PAEONIA

Volume 9, No. 1 March, 1978

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.

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.

TABLE OF CONTENTS

TOICHI DOMOTO NURSERY
26521 Whitman Street
Hayward, California 94544

January 11, 1978

Dear Lanings,

The season's greetings to you from California. At last we're getting the necessary rains, which should make for a good peony year.

Enclosed is my check for $2.00 for PAEONIA, which I enjoy reading and studying. Sure hope that the information available is used by anyone interested in growing peonies, be they young or young old. Sure wish such was available to me in the 1920's.

Regarding seedling tree peonies from our seed in June, 1977 Paeonia, I have found that the double ones are produced from the weakest and takes them a longer time to flower. Singles are the most precocious.

Sincerely,

Toichi Domoto

ED: A pound of tree peony seeds has been provided by Toichi Domoto for distribution, a very generous gift! You Paeonians who would like some of them, drop me a card. These seeds, if sown (or planted) in June or July of this year and protected from freezing next winter, should provide nice seedlings next year.

- Chris

American Horticultural Society Volume XX, No. 1, January, 1978

PROBING THE PRIVATE LIFE OF FRUIT TREES –

One of the big problems with growing fruit in some areas is that fruit buds may be seriously damaged by warm spring temperatures followed by freezing weather. Another problem is that in some areas the chill requirement of the best varieties cannot be met. A research group at Utah State University is trying to find out whether it is possible to do something about those problems.

It seems safe to assume, says Dr. Schuyler Seeley, professor of fruit crops, leader of the research group, that the average tree simply responds each year to a series of interactions between its internal and external environments.

If we could determine the hows and whys of when fruit trees start and stop growing, we might be able eventually to program a tree's time of bloom by artificially manipulating chemicals that occur naturally in the trees.

In effect, we might be able to supply the trees with a hormone-based anesthetic in early spring and withdraw it when frost dangers moderate.

Right now, the research group is concentrating on one particular piece of the puzzle: Why do fruit trees require a certain amount of chilling before they can respond productively to warming spring temperatures?

Thanks to prior research, he says, we are starting with some "knowns". For example, a healthy tree, left to its own devices, has to accumulate a certain number of chill units before it can begin to grow each spring (1 chill unit equals 1 hour of 43°F temperature; a longer time is required above and below 43 degree; 2 hours at either 50 or 35 degrees for 1 chill unit).

Also, once a mature tree's chilling requirement is satisfied, it will grow best at temperatures between 40 and 80 degrees. In fact, temperatures that consistently exceed 80 degrees will stop growth. And, after a tree has produced its fruit, stripping it of all its leaves simultaneously strips it of its chilling requirement (The Javanese, with their mild climate, put this phenomenon to practical use. They harvest Rome Beauty apples in April, strip the trees of their leaves in May, and harvest again in October.).

The Utah State University researchers are experimenting with peach trees to find out whether the observed effects of leaf removal are correlated with variations in the trees' supply of growth-promoting and growth-inhibiting hormones. If so, the next step will be to separate the hormones from all the other chemicals in the leaves. Once that technically exacting task is accomplished, the hormones would be tested on seedling trees to pin down precisely how they operate.

Achieving the ultimate goal of controlling the dormancy (chilling) requirements of fruit trees would mean better fruit production in areas that are currently marginal because of either too much or not enough natural chilling potential.

EDITOR'S COMMENT ON PRECEDING ARTICLE (Probing the Private Life of Fruit Trees)

I'm wondering? — Since lutea hybrid tree peonies and suffruticosas form flowering buds in early summer, would the process of stripping them of their leaves in July or August cause them to bloom again in the fall (rebloom)? Also, some Itohs form flower buds during the summer time but freeze out during winter. Could these be forced into fall bloom by stripping them of their leaves in summer?

Maybe the article can give some direction for experimenting. Don't forget, gibberellic acid spray is an interesting tool — and it could possibly come into play in this experiment. Triacontanol or even alfalfa pellets conceivably could come into play right here.

- Chris

ALCOHOL STIMULATES CROP OUTPUT
from "News and Views
The American Horticultural Society

A new growth stimulating chemical that increased field crop yields up to 24 per cent in Michigan promises to enhance worldwide food production dramatically, scientists say.

The chemical is a natural plant alcohol called, triacontanol which Michigan State University horticulturist Stanley K. Ries extracted from alfalfa hay.

It is not a fertilizer, the scientists said. It apparently affects plant metabolism in ways that are not completely understood. Ries said much more testing is required before it can be widely used in agriculture.

He said triacontanol works in such small doses that one pound could treat 90,000 acres of farmland. It is found naturally in many plants -- and in fact is routinely ingested by humans in food — and therefore appears to be environmentally harmless as a plant treatment, he said.

Sylvan H. Wittwer, director of the MSU agricultural experimental station, said the chemical is a break-through of another kind. Until now, most efforts to enhance crop growth involved external factors such as irrigation, fertilization and mechanization.

LETTER TO: Chris Laning
FROM: Edgar DeWitt Brown, 1845 NW 197th Street, Seattle, Washington, 98177

..... Although I do not have the time nor the space available to participate in the programs of breeding on culture discussed, they do interest me. Perhaps one of my disappointments in the objectives of many of the efforts is toward the full, large blooms. Some of this attitude, I realize, is public demand (preference?). My inclination of choice is toward the single, semi- or full double corolla with delicate coloring. In fact toward the smaller, less flamboyant flower. Then again I refute that with a choice of some like 'Alexander Woollcott', 'Good Cheer', etc.. Land, or space, is our (I participate with Keith and Peggy Goldsmith) biggest shortage. Since we both live in what might be classified as suburbs or environs of Seattle, arable land, at reasonable price or rent, is impossible to obtain. Seems somebody wants to "improve" anything halfway flat by putting buildings, etc. on it. So, what's new? Since I work full-time and Keith has his general nursery also, neither of us can utilize anything distant, so we do what we can.

LETTER AND ARTICLE FROM: Charles R. Trommer, Tranquil Lake Nursery
River Street, Rehoboth, Mass, 02769

TO: Chris Laning (12-23-77)

Dear Chris:

.....I have put peonies on the back burner until I can figure a way to rid my plants of root knot nematode. Has anyone ever tried planting marigolds, then later rototilling them in to drive off the nematodes?

The enclosed article seems to offer hope but the specific varieties found to be effective are not indicated nor are sources of seed.

MARIGOLDS VS. INSECTS AND WEEDS
by P.R. Robinson

If ever a prize is awarded for the most useful annual flowers, I think marigolds will win it hands down. In addition to their ornamental uses, marigolds have proven in various tests to be helpful in insect and weed control.

Nematode Repellent: Some years ago, when a world-famous rose garden in Europe was declining rapidly, soil tests revealed tiny nematodes destroying the roses' roots. Marigold seedlings were set into some of the rose beds to test whether the legend that marigolds repelled nematodes was true or not. Roses in the treated beds recovered. Those in untreated beds died.

Later, bulb growers in the Netherlands tried sowing marigold seeds in their fields before planting narcissus bulbs. Nematodes which had formerly attacked the bulbs disappeared.

In further tests, marigolds were planted around trees and field crops. Again, the nematodes disappeared. It was discovered that when marigolds were planted as a cover crop on land that had been abandoned because of nematodes, infestations were reduced by an average of 93 per cent. The control was effective up to 6 feet away from a planting of marigolds.

Helpful Against Other Bugs: Marigolds have been used in Africa to repel weevils living beneath the surface of crop land.

They are even helpful against Japanese beetles: Planted in rows surrounding susceptible crops, the marigolds attract and hold the attention of those voracious pests while the more valuable plantings are left alone.

Weed Deterrent: In other instances, field tests showed that marigolds could aid in destroying some noxious weeds such as ground ivy, bindweed and couch grass. When tall forms of marigolds were grown from seeds sown on cleared ground in May, the roots of the troublesome weeds were greatly reduced. Some were found to be eaten up as if with acid.

What Does the Work: The offensive smell of old-fashioned marigolds is probably helpful; odorless and faint-smelling verities don't seem as effective.

Research by chemists has revealed that marigold roots contain sulfur compounds known as Thiophenes. This may be part of the marigold's power.

Just recently, a chemical compound quite similar to the insecticidal alkaloid in pyrethrum flowers was fond in marigolds. This has led to spraying fruit trees with a derivative of marigold leaves boiled in water. This solution remains stable under storage, an advantage over pyrethrum.

Marigold's One Drawback: Marigolds may become weeds in warm climates where no natural enemies hold them in check. When they were introduced into a farming section of Australia about 1900, they rapidly become rampant weeds. They were named "stinking Rogers" after the unfortunate farmer who introduced them.

Compatible With Most Crops: Otherwise, marigolds seem to be compatible around most crops except potatoes. Planting the two together reduced the potatoes' yield in field tests. Mother Nature knows why this is so, but she guards the secret.

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Rev. Joseph A. Syrovy
Vining, Iowa
January 13, 1978

Chris Laning
553 West F Avenue
Kalamazoo, Michigan

Dear Chris:

Enclosed find a check for the upkeep of Paeonia. We've had a very hard winter so far and I believe you have too! The way Bill Seidl describes what they had, ours was very similar. About transplanting time Don sent me a lot of his stuff, both herbaceous and Tree peonies. It was so wet and late, I had difficulty digging holes and planting. I planted all the herbaceous Don sent for hybridizing and put the Tree peonies in pots. They are in the coldest spot I have, in an old pump well. I have seeds sprouting in plastic bags in the refrigerator, which I'll have to plant in pots in vermiculite mix, and then put them on my sleeping porch, and set out later.

Because of the drought also had a time trying to save seedlings. Some I guess won't come up or won't survive the winter, as some died down, and then when it rained so hard and became warm and remained warm for so long a time, they started to come up again, thinking it was spring already! I was lucky to put some seedlings on the north side of the house, where I could water, mulch and take better care of them. Among them are Roy's Best and Second Best yellows and some Itoh crosses. Haven't had too much success with those! I hope what I have sprouting in my ice-box will be some good Itohs!?!

Best regards and a belated Happy New Year.

Sincerely,

Father Joe

LETTER FROM: L. J. Dewey, 2617 Wyndham Drive, Richmond, Va. 23235

TO: Chris Laning October 18, 1977

PAEONIA, September 1977, arrived here October 11 containing the Seed Distribution List and along with it the catalog from Far North Gardens. PAEONIA was, as usual, packed with interesting information and I won't take time now to comment on everything which caught my fancy. Suffice it to say I was most pleased with the mailing.

First of all I want to enter two requests for seeds:

1. P. suffruticosa
2. About 100 (or what you can spare) peony seeds for germination tests with chemicals.

I plan to use the suffruticosa seeds mainly in my colchicine studies and hopefully many of them will be grown to the flowering stage. Incidentally, I will report to you later on this year's results from treating tree peony seedlings with colchicine.

The second lot of seeds will be used in my studies to speed up germination with chemicals. Therefore, the type of cross may not be so important at this stage of testing and I wouldn't want to use seeds from valuable crosses. You could send me seeds which nobody else wants or which are even unlabeled — in other words clean out your seed bins! The seedlings obtained in these tests, if they are herbaceous, will probably not be grown on since I am rapidly running out of space, and I plan to concentrate now primarily on growing tree peony seedlings in the garden. I am enclosing $1 to help defray the cost of postage.

I was glad to have a copy of the catalog from Far North Gardens and have already sent off an order — mostly for tree peony species. In this connection, I was wondering if Paeonians are familiar with the peony seed offerings in the catalog of the English firm, Thompson and Morgan Inc. They have an outlet in the U.S. with the following address for those who might want to order a catalog with the rare seed lists.

Thompson and Morgan Inc.
P.O. Box 24
401 Kennedy Blvd.
Somerdale, New Jersey 08083

Last fall I tried packets of their P. lutea Ludlowii (5 seeds) and P. delavayi (8 seeds). There was no germination with the latter — all seeds turning soft during "incubation". I did get one seedling from the Ludlowii batch — again the remainder turned soft. This is not a good testimonial, but then one seedling can be very valuable if it is the right one.

My results on the germination of seeds you sent me last fall have not been tabulated yet, partly because of procrastination and partly because of the slow germination I encountered with the tree ponies. The slow germination may be due to my technique. I will try to send you a full report when I compile it. As a preview I will tell you the chemical treatments which I tried were disappointing; but I learned in the process and will push forward with new tests this fall if I get a supply of seeds. My own seed harvest was poor this season due to a lot of hail damage in the spring and a discouragingly hot and dry summer.

Your note on triacontanol stimulated my interest in this compound again. In case you have not seen it, I am enclosing a copy of the paper by Dr. Stanley Ries, et al. which appeared in Science 195, 1339-1341 (25 March 1977). It's a bit technical in spots but does give some background and some idea of the concentrations needed. I want to test this compound to see if it will speed up germination. I don't have a sample of it on hand,

but the fact is mentioned in the reference you cite in "Horticulture" (Aug. 1977) that triacontanol occurs at high levels in beeswax. On further checking I find it is present in beeswax as the esters of long chain fatty acids and I don't know if it would be effective in this form. Anyway I will try dissolving some beeswax in an organic solvent for the germination tests with peony seeds.

One more thought before I close. It's encouraging to know Saunders' Big Notebooks are available. It's my understanding these cover the herbaceous crosses. Are there similar notes on the tree peony crosses? If so, these would be extremely interesting to me.

I will close now with the idea of getting back with you when I get some of my findings better organized. Trust you and Lois have had a good season.

Best regards,

L. J.

ED: Information from Saunders' Notebook:

"Notebook No. 2 contains virtually the same information as No. 1, arranged in a different fashions which seems less convenient, somehow. His daughter, Silvia, who had these copies made, through the great kindness of Mr. Walter Pilkington, the Head Librarian, thought it unnecessary to have No. 2 Xeroxed. No. 4 contains notes on the Japanese Tree Peonies and on the so-called Lutea Hybrids (Tree Peony hybrids). Since these notes were kept in a far more casual way than the records on the herbaceous, I consider that they do not impart information that would be at all useful to a Hybridists such as what plants were used, there they were obtained, etc. Therefore No. 4 was not Xeroxed."

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REQUEST FOR PEONY INFORMATION

From: Harley E. Briscoe,
Route #1,
White Hall, Ill. 62092

Dear Mr. Laning:

I have become interested in the following peonies and have not been able to locate where I could get them. I thought perhaps you would know.

'**Barbara Utterback**' (Winchill 1948)

'**Moonglow**' (Rosefield 1939)

Sincerely,

H. E. Briscoe

ED: Can any Paeonian help us out with information?

-Chris

ALBIFLORA X CORIACEA (From Saunders' Notebook)

As to how well *coriacea* pollen takes on albiflora varieties, consider these data;

1928	#3485	2, 2, 0, 0
	#667	2, 3, 5
	#447	5, 5, 9, 4, 6, 12, 5
1934	#1875	24, 29
	Rose Valley	22, 19
	#993	0
	J. Kelway	1, 0, 1, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 2, 0, 0, 0
	#1090	0, 0, 0, 0
	#1951	13, 12

Total number of crosses 48; seeds 186; average yield per cross, nearly 4.

The James Kelway crosses take very badly. I had no pollen again until 1940 when I made 16 crosses on James Kelway, but the pollen came from one of the seedling coriaceas which are sterile, though I didn't know it at that time.

In 1942 I made, I think, 35 crosses on J. Kelway with pollen from the C.E.F. (Ottawa) plant (which is strong) and got apparently only 2 seeds now in 10.12 row 11. These *coriacea* hybrids are very beautiful things. On opening the flowers have a little too much red in them, but when they are a day or two old the red fades out and the flowers become a lovely clear lavender, and remain so until the petals fall off. This is a new color in peonies and very interesting. The coriaceas after blooming have a deep brilliant red calyx, quite showy.

8075-6:	667 x *coriacea* , (Ottawa pollen) crosses in 1928
8077-8:	3485 x *coriacea*, some of these plants bloomed in 1933
8079-89:	447 x *coriacea*
14842-55:	1951 x *coriacea*, pollen firm plant from Ottawa
14856-75:	Rose Valley x *coriacea*
14876-8:	James Kelway x *coriacea*
14879-902:	1875 x *coriacea*

The first set was originally in Frame 12. They were lifted and divided and are now mostly in 23.2 and 8.7

Pollens:	8076	May 29, 1933	v. few - 0 - v. few	6-8%
	8077	June 3, 1934	0 - v. few - v. few	5%
	8078	May 29, 1933	v. few - 0 - v. few	5%
		June 3, 1934	0-0-0	2%
	8084	June 4, 1934	not tested	8%
	8087	June 1, 1933	0-0-0	1-2%
		June 4, 1934		10%
	8086		pure albi out	
	8088	May 31, 1933	Very lovely and distinct delicate mauve singles.	
	8089	May 30, 1933	Pollen: 0 - v. few - v. few	5%
		June 3, 1934	v. few - v. few- v. few	3%
			(Noted in 1941 - perhaps the loveliest of these)	

No notes on the more recent group (crosses of 1934) except this note in 1941 - Albi x *coriacea* (Barr) has naked red seed-pods just like the *coriacea* hybrids, and also very few seeds whereas albi x ozieri alba has furry pods and sets seed fairly well.

F_2 albi x *coriacea* 1941 2 seeds in 10.12 row 9
1942 2 seeds J. Kelway x *coriacea* in 10.12 row 11

PURPLE AND LAVENDER

These colors are wanted and hybridizers are now working toward this goal.

Lactiflora x *coriacea* has produced '**Lavender**'. It seems strange that Professor Saunders who produced this color by using this cross didn't theorize as to how this could come about. *Coriacea* is a bright pink or dark red species; the lactiflora was white; whence comes the lavender color?? And now, how do you go about intensifying this color? The Lavenders are sterile and species *coriacea* seems impossible to find!

Gratwick's advanced generation lutea hybrids are another example of new color possibilities. No. 258, a plant that has plum purple color, comes from parentage that shows no potential for purple. No. 258 is No. 95 x Choni; No. 95 is Red Cloud x F_2A; and Choni is probably Rocks Variety so this is what you have: (Red Cloud x F_2A) x Rocks Variety. This plant produces pollen on its single flowers lending hope that purple may yet be gained for seed-bearing tree peonies, also, farther down the line, on herbaceous peonies.

Things are getting more exciting for the hybridizer every passing year! Come to the peony show and see this new color (that is, if I can hold one over for the show without its shattering and falling apart.)

- Chris Laning

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USING DORMANT BUDS FROM HERBACEOUS STEMS TO GRAFT ITOH HYBRID PEONIES

Don Hollingsworth

It appears that most Itoh Hybrids produce at least some shoot buds on above ground stems. These are sometimes smaller than those produced by their tree peony ancestors, though they are often fully as big. Since plants of the Itohs remain scarce, one is usually curious about the possibility of propagating from these buds. The stems always die down and the buds are lost when left on the plant.

I have had good success in grafting the larger buds which are formed below ground on those hybrids. However, scions cut from the typical upper stems have always failed. Last fall, I gave some thought to the possibility that it is some herbaceous quality of the stem that leads to failure rather than the buds. In order to test this idea, attempts were made to insert the buds directly into a piece of nurse root, completely eliminating this stem portion. The results are promising.

All the buds were used, ranging from those that were very small to some that were of typical size for tree peony flower buds. Buds from second year seedlings were even tried. A bud was prepared by cutting the lower half to a wedge shape. These were inserted in a deep cut made at one side of the root. The idea of a deep cut was in order to give a flap that could be brought up over the top of the bud to keep it from popping out while being bound.

Binding the buds proved to be difficult due partly to the width of the two binding materials at hand. One was the usual plastic tape and the other an adhesive tape, both about one-half inch wide. In order to gain the critically required firm contact between the short wedge of the buds and the root tissue, the pressure has to bear on a narrow space. The wider binding materials are not adequate for this, or I didn't figure out how. In light of this I think a waxed cord or narrow rubber binding might overcome the problem.

After six weeks at least two of the 30 or so tried seemed firmly "caught". This tends to confirm that the buds have the ability to form graft unions when the other conditions are suitable. It was not the largest of the buds tried that succeeded. This further encourages me, for I think it is generally true that tree peony grafters favor scions having large buds, believing them to "take" in greater percentage. If the smaller buds have the ability to form graft unions, then the larger buds probably will do as well, or better, when the mechanical fit is satisfactory.

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MEMO FROM: DON HOLLINGSWORTH, 5831 N. Colrain Ave., Kansas City, Mo. 64151

TO: Chris Laning

Date: March 7, 1978

Dear Chris:

. . . . . Also, you may report that I will offer to send pollen, as available. As a practical matter, the requestor should see that I get a reminder as it gets three or four weeks from their expected time of use. In this they should tell me what they're trying to do, in general, and whether a substitute of similar potential is of interest, (it turns out that some folks want only specific cultivars, others are willing to try for certain goals with whatever seems promising among the available kinds. Either way is O.K. by me. I just don't want to bother with substituting if it's not desired.)

Perhaps one of the best prospects is for me to supply pollen of double Lacti peonies for using on early flowering kinds in more northerly gardens. I'll also have pollen of some Lutea species types in small amounts if there is some interest in using it on tree peony flowers to produce Lutea Hybrids. I do not expect to have a sufficient supply of Lutea Hybrid pollen to send out, although I am willing to do so if it is available.

Hope things are going well with you folks.

Sincerely,

Don