PÆONIA

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PRODUCING HIGH QUALITY INTERSECTIONAL HYBRIDS

by Don Smith

One approach to producing intersectional hybrids of high quality is to simply repeat crosses that have already resulted in top quality hybrids (i.e., ones that were considered good enough to be named and introduced). In order to employ this approach, we need to have detailed knowledge of the parentage of as many named varieties as possible. To aid those that would like to use this approach, I have put together a comprehensive list of 40 named intersectional hybrids with information on the parentage of each variety. This information is presented in Table 1 along with flower type and color. This data was assembled from various published articles and from registration information found in the APS bulletins. In a few cases the published information from different sources is contradictory and educated guesses needed to be made concerning the correct parentage. Where discrepancies existed they have been noted with a ? in the table. As you can see from Table 1 these hybrids cover the full range of colors and flower forms. Figure 1 shows the distribution of these 40 hybrids by flower color.

In addition, I have analyzed the data presented in Table 1 to determine which parents have produced the largest number of quality hybrids. The results of this analysis are given in Tables 2 and 3. However, since I have little or no information on the total number of crosses made or the number of seedlings (with the same parentage) from which these named varieties were selected, these results may be quite misleading. For example, the fact that *Alice Harding* and *Golden Era* have produced the same number of named *(cont'd on page 3, col. 1)*

Table 1. The pedigrees of all registered and/or named intersectional hybrids

Cultivar Name	Flower Type	Flower Color	Herb. Lactiflora Seed Parent	T.P. Pollen Parent
Yellow Heaven	SD	Yellow	Kakoken	Alice Harding
Yellow Dream	SD	Yellow	Kakoken	Alice Harding
Yellow Crown	SD	Yellow	Kakoken	Alice Harding
Yellow Emperor	SD	Yellow	Kakoken	Alice Harding
Yellow Gem	SD	Yellow	Sgle White Lacti.	Alice Harding
Garden Treasure	SD-D	Yellow	Carr East #2	Alice Harding
Border Charm	S-SD	Yellow	Carr East #2	Alice Harding
Prairie Charm	SD	Lt. Yellow	Miss America	Alice Harding
Beethoven	S	Red	Martha Wash.	Thunderbolt
Court Jester	S	Yellow	Martha Wash. Sdlg	D-256
Joanna Marlene	S	Cream Bld.	Gay Paree	Golden Era
Canary Brilliants	D	Yellow	Martha W. Sdlg ?	D-75 ?
Lollipop	SD	Yellow	Martha Wash. Sdlg	D-79
Lemon Dream	SD	Yellow	Martha Wash.	Golden Era
Morning Lilac	S	Purple	Martha Wash. Sdlg	Golden Era
Copper Kettle	D	Copper	Martha Wash.	Golden Era
Callie's Memory	SD	Lt. Yellow	Martha Wash. Sdlg	D-74
Scarlet Heaven	S	Red	Martha Wash. Sdlg	Thunderbolt
Unique	S	Dk. Pink	Martha Wash.	Potanini, T. Yellow
Yellow Waterlily	SD-D	Yellow	Martha Wash. Sdlg	D-79
Sequestered Sunshine	S-SD	Yellow	Miss America ?	D-74 ?
Saffron Innocence	S-SD	Yellow	Miss America	D-79
Norwegian Blush	S-SD	Lt. Pink	Martha Wash. Sdlg	D-74
Julia Rose	S	Ch. Red Blend	Unk. Lacti Sdlg	Renown
Hillary	SD-D	Ch. Red Blend	Unk. Lacti Sdlg ?	Renown ?
Watermelon Wine	S	Red Pink	Martha Wash.	Chinese Dragon
Pastel Splendor	S	Cream Blend	Martha Wash.	Saunder's F2A ?
Cora Louise	SD	White	Unk. Lacti Sdlg	Golden Era
First Arrival	SD	Pink	Martha Wash.	Golden Era
Mozart	D	Yellow	Martha Wash. Sdlg	D-75
Bartzella	D	Yellow	Minnie Shaylor ?	Golden Era
Luxuriant	SD-D	White	Unk. Wh Dble Lacti	Golden Era
Little Darling	S	Pink	Martha Wash.	Golden Era
Somona Sun	SD	Yellow	Minnie Shaylor	Golden Era ?
Dark Eyes	S	Dk. Purple	Mikado	p. delavayii
Viking Full Moon	S	Lt. Yellow	Unk. Lacti.	Unk. Yellow L. Hyb.
Lafayette Escadrille	S	Blk. Red	Unk. Lacti.	Thunderbolt ?
Rose Fantasy	S	Dusty Rose	Harriet Olney Sdlg.	Chinese Dragon
Hidden Treasure	S-D	Yellow	White anemone	Alice Harding
White Emperor	SD	White	Kakoken	Alice Harding

Notes on Table 1:

? indicates that at different times more than one variety has been given as the parent of this plant. When this occurs, I have no way of knowing for sure which is the correct parent. In these cases I have made my best guess at the correct one. For example, Sequestered Sunshine has also been listed as originating from the cross Martha W. x Golden Era. Both Canary Brilliants and Bartzella have also been listed as coming from Minnie Shaylor x Golden Era. Pastel Splendor has also been listed as originating from Martha W. x Golden Era. One source incorrectly listed Garden Treasure and Border Charm as originating from the cross Miss America x Alice Harding. The description which accompanied the recent registration of Hillary (APS Bulletin, No. 310) lists the parentage as (Bartzella x open), thus making this variety an F2 hybrid. This seems highly unlikely to me. I believe that this is some kind of typographical error and that the parentage previously listed elsewhere is more likely to be correct. I have therefore assumed that the previously listed parentage is correct and have used it in Table 1.

I have no direct information on the parentage of the four unnamed Daphnis tree peony hybrids D-74, D-75, D-79 and D-256. However, D-73 is from Goldfinch x F2A as is also D-78. I would assume therefore, that D-74 and D-75 are also from this same cross. D-79 may also share the same parentage as well, but this is less certain. I believe that D-256 is a Tria seedling, but I can not remember the pollen parent. Anyone with more information on these unnamed Daphnis advanced generation hybrids is encouraged to write.

Table 2. Distribution of currently named and/or registered intersectional hybrids by tree peony pollen parents.

Pollen Parent	No. of Named Hybrids	% of Total
Alice Harding	10	25
Golden Era	10	25
Unnamed Daphnis Hybs	9	22
Thunderbolt	3	8
Renown	2	5
Chinese Dragon	2	5
T.P. Species	2	5
Others	2	5
Total	40	100

Table 3. Distribution of currently named and/or registered intersectional hybrids by herbaceous seed parents.

Seed Parent	No. of Named Hybrids	% of Total
M.W. Seedlings	9	22
Martha W.	8	20
Unk. or Unnamed Sdlgs.	8	20
Kakoken	5	13
Miss America	3	8
Carr East #2	2	5
Others	5	13
Total	40	100

(cont'd from page 1) varieties might be somewhat misleading since *G.E.* has produced many more intersectional hybrid seedlings over the years than *Alice Harding.* On the other hand, due to the much lower fertility of *Alice Harding* pollen, it is quite possible that a comparable number of crosses have been made using each of these pollens over the last few decades. As a result of these issues, the reader is cautioned about trying to draw too many conclusions from these data.

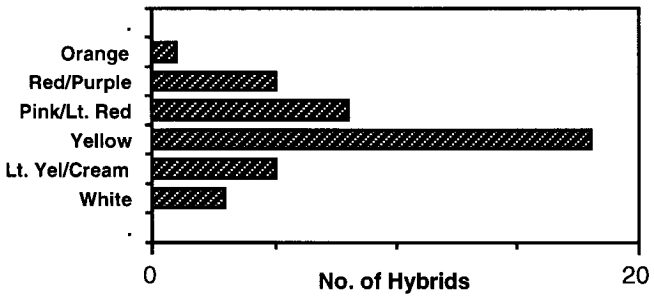

Figure 1. Distribution of named and registered intersectional hybrids by flower color.

A more meaningful comparison might come from examining the distribution of flower types exhibited by the named A.H. and G.E. progeny. This comparison is shown in Table 4. It is interesting to note that these two Lutea hybrids (one double and one single) have produced similar numbers of double and semi-double offspring. Other conclusions from these data are left to the reader,

Table 4. Comparison of flower types exhibited by A.H. and G.E. progeny.

Flower Type	Alice Harding Progeny	Golden Era Progeny
Doubles	1	3
Semi-doubles	7	4
Singles	1	3

GERMINATION OF PEONY CALIFORNICA SEEDS

by Nancy Halas

Attached is a colored Xerox copy of two photographs of germinating conditions actually taken on my kitchen table with a ruler to give an idea of lengths and sizes. Please disregard the colors of the table cloth.

In the far left, is a normal condition of one root sprouting from the seed pod and developing for some length an underground rootlet. From a split in the root stem near the pod would emerge some time later a leaf shoot which would develop slowly. Presumably the nourishment of the leaf is partly from the root and partly now from the leaf as well as some from the pod.

To the far right, is a small growth, in which the leaf shoot emerged first, rather than the root stem. It seems that the pod is programmed to release either a rootlet or a leaflet after a period of time and temperature. Just what those temperatures are, I don't really know. However the leaflet only obtains nourishment from the pod. It seems after the temperature lowered to a sufficient point then the rootlet would emerge from the split in the leaf stem near the pod. Because the root is undeveloped, it can't seem to support the growth of the leaf. After a period of stunted growth the combination seems to die off.

Although the middle sprout seems to look like and octopus with four appendages coming from the pod. this is a rather novel condition that you will never see very often or recognize it when it does occur. If you can guess why, you will smile at the novelty, since there is nothing new under the sun. This is a set of twin roots and leaflets from one pod. First two roots came out first from the pod after a given time and temperature. When the temperature would rise a bit, then two leaflets would emerge, one from each rootlet. Although, in the photograph the leaflets are still smallish, in time they did accelerate in growth and quickly caught up to the single rootlet and leaflet combination. This set of twins did survive, as it should since it isn't an abnormal condition, only an unusual one.

This experimental illustration seems to point out that time and temperature play a role in the emergence of rootlets and leaflets, and the pod can be confused into releasing the leaflet first, and when it does, the plant may not survive.

The last question you may ask, is the Peony Californica able to survive anywhere outside of californica? I don't know since I only have one spring, summer and fall experience with the species that would actually grow for me outside. What I did find was that Peony Californica seedlings seem to like cool weather such as spring and fall. In the summer the plant seems to slow down in growth and prefers the shade. The plant may die down in the hot mid summer but it

comes out again in the fall. It seems to have a high leaf transpiration rate and needs a very moist soil. It loves to be fertilized and to have rich applications of composted sheep or cattle manure. This would kill a normal peony, but not so Peony Californica. I haven't grown any in direct sun since my seedlings did not do well under the direct sunlight. I had a lot of seedlings and I lost a great many actually experimenting with them under different locations. As for winter survival, I don't know from experience. I only know that at temperatures of 26 degrees Fahrenheit to the point of time I mailed the article. The plants did survive and were not frost damaged yet, although the normal peonies were. California does have frost in the north and it does have these peonies growing in the mountains. Mountains are rough growing conditions, more so than at sea level which is where I am at. I don't know if Peony Californica will overwinter in the Detroit, Michigan area.

Sincerely,

Nancy Halas

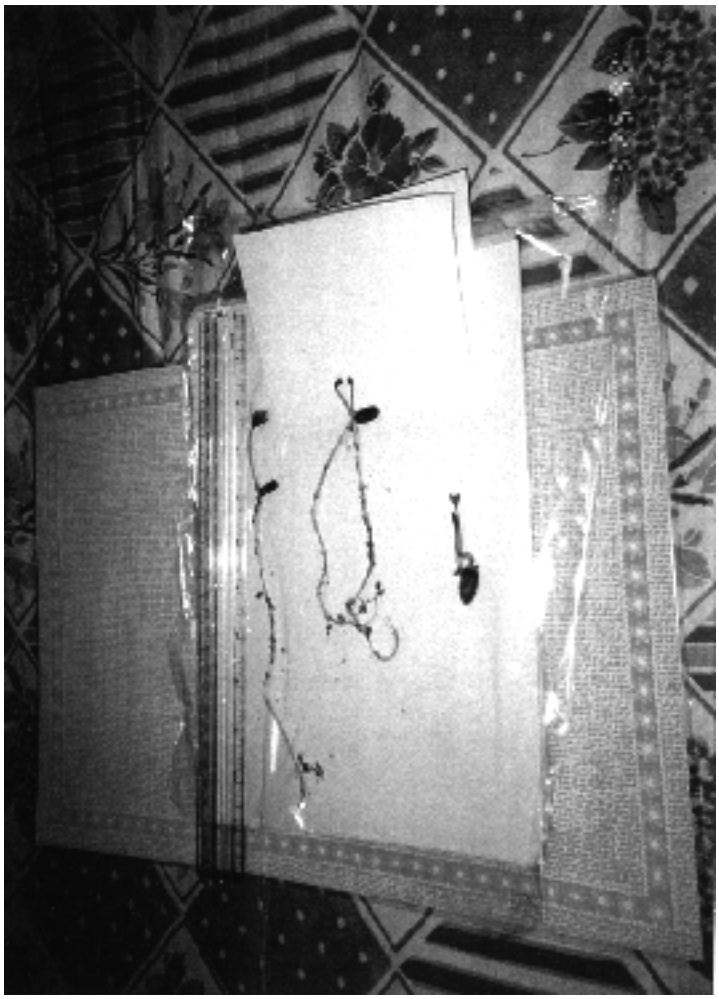

Figure 1. Photograph of three germinated p. californica seeds. A clear plastic 12" ruler is located just to the left of the first seed for the purpose of size comparison.

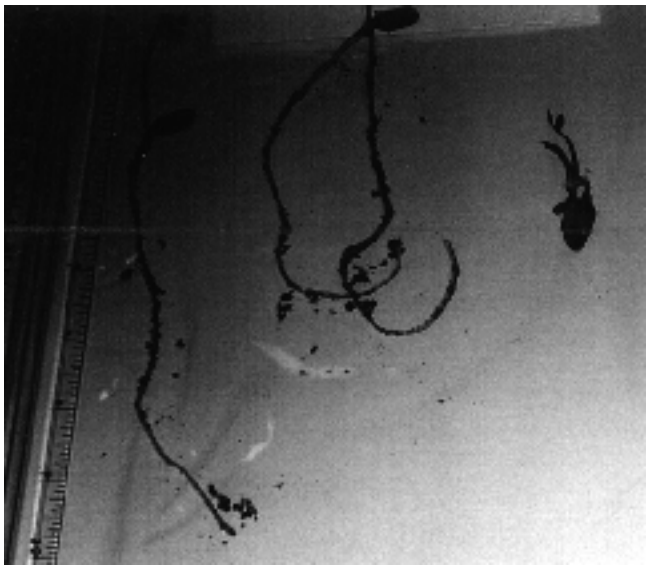

Figure 2. A slightly enlarged version of the three seeds shown in figure 1.

LETTERS TO THE EDITOR:

Received 9 December 1999

Dear Mr. Smith

In your last Newsletter I saw the note regarding the experience of Zlatana Draskovick concerning the plant *Leda* being two different plants; one being single and the other being double. The fact is there are two plants, *Leda* (D-308) which is double and *Zeus* (D-309) which is single.

I know that chemistry of the soil might have some effect on the color of the flowers, but not on the structure of the flowers. Originally, these two plants were growing next to each other. I don't know how these two different flowers grew from the same plant. Maybe these two plants were growing together and came out as a single plant? In any case, for the record

D-308 is Leda which is a pink double that is from the cross (Moutan # 11 x BC1), whereas

D-309 is Zeus and is a pink single that is from the cross (Thunderbolt x BC1) .

I hope that the above information clears up the difference between these two plants.

Sincerely.

Nassos Daphnis

Editorial Comment to the above Letter:

In response to an article by Harold Entsminger in Pæonia (V29, N2), I provided information that now appears to have been at least partially incorrect. This information was based on a listing of Daphnis hybrids which appears on a web site established by Walter Good (Paeonia.ch). It lists *Leda* (D-308) as single and *Zeus* (D-309) as double. Both varieties are listed as having the same parentage (*Kokomon* x BC2). This is the opposite of the information provided above. Now that we have the word on these plants directly from Daphnis, I am happy to stand corrected on this point. This being said, it would then appear that I probably have *Zeus* and not *Leda* as previously stated. This might also account for the differences in the fertility of "*Leda*" as reported by Zlatana Draskovick and myself.

Notice!

Pæonia readers that have computers and are on-line can now contact me by e-mail at

paeonianews@aol.com

Those who are on-line are highly encouraged to submit future articles and letters-to-the-editor by e-mail at the above address.