PAEONIA

Volume 18, No.2 June 1987

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553 West F Avenue
Kalamazoo, MI.

Suggested yearly contribution:
$2.50 in the U.S. and Canada
$4.00 in Europe and Australia.

WHY COLLECT SPECIES?

There is a resurgence of interest in species (wild) peonies among our hybridizers along with peony enthusiasts in other countries and far away places. This is fortunate and timely since many of the species are in danger of extinction.

Don Hollingsworth, your National Peony Society President, is heading up the rescue project. In the future, when possible, he will distribute species seed to members who have developed some knowledge in peony seed germination. At present he is corresponding with people of foreign countries — those who will work with us on this project. Hopefully, a goodly number of us will choose to cooperate!

Some may think — why the great interest in species now? Well, Professor Saunders used many species in his various crosses AND kept record of his successes and failures in this endeavor. His notebook #1 lists albiflora, now known as P. lactiflora, as the pod parent on which pollen from the species was applied. Hopefully, PAEONIA will present a condensed version of his Big Notebook #1 record in the forthcoming issues starting with this issue.

What Professor Saunders did with the crosses onto lactiflora, we must do but by using the fertile tetraploids as pod parents. There are quite a number of full double tets in many colors so the outlook is encouraging, yes, tremendous!!

- Chris

A. P. SAUNDERS "BIG NOTEBOOK #1"

Vol. 1, All albiflora crosses

P. albiflora x P. anomala

#7082 through 7105 plus 8051 and 8052, This strain is very much all alike, single flowers, fairly large, very mauve pink. Not good color. Always a lot of polycarpy. A very unattractive race.

May 29, 1933 - No anthers. Wildest polycarpy

June 11, 1934 - Laterals have some pollen. One seed in 1939 produced an F2 - no other seedlings recorded.

(P. albiflora x p. anomala F2 = Echo)

Reciprocal

1937 anomala x albiflora gave two seedlings #15464 and 15465. No blooms up to 1941.

Albiflora x arietina

Seedling number 4907 (1925) albiflora #897 x arietina excelsior. In 1934 it was very handsome — pollen 5% good #7072, 7149 through 7152, 8053 through 8074, etc.

Viable pollen generally 2-5% but one or two seedlings had 20% good.

F2 #16452 and 16453 - a total of 39 seedlings recorded plus the two F2's.

Ed. note: Not any of the seedlings of this cross was introduced. Also, Saunders noted "Violent polycarpy, petals mauve pink, not very good."

(Was considered at Kew as a subspecies or variety of peregrina Tatraploid.
Reciprocal Cross - Arietina x albiflora. Twenty seven seedlings of this reciprocal cross recorded but no additional notes.)

Albiflora x Bakeri

#10990 - just one seedling with no notes.

Albiflora x beresowskyi

#8061 and 8062.

In 1932 it looks like albi in leaf but roots are bright red externally and buds (on the crown) crimson. June 6, 1933 - pink flowers, polycarpy and almost no stamens. Much like the albi x woodwardi hybrids. Very little pollen, 10 to 30% good, hard to tell.

Albiflora x broteri

#14573 to 14613 = 40 seedlings. Most of these are mauvish pink singles. My impression is that they are not as good as coriacea hybrids.

#4611 is marked "lovely" and that I am sure was a fine lavender like one of the coriaceas.

Albiflora x P. brownii

No crosses. I must have tried this cross often but evidently I never had any seed.

Albiflora x cambessedesii

I have never had a flower on any of my plants of cambessedesii. Have bought plants several times and raised many from seed, but they all died out soon.

Got a plant from Glasnevin (1928?) which opened a bloom in the package and I took pollen from it when it arrived. Made one cross, no seed.

More crosses in 1932 and 1933 from what pollen?, got a couple of good seeds but no plants.

No germination from these few seeds, and I have never since then had any pollen of cambessedesii with which to pursue this cross.

I should have liked to make this cross because cambessedesii seems to me not very far in character from coriacea, and the hybrids might have had an interesting range of color just as the coriaceas have.

Albiflora x Corallina

There are several items to be considered under Corallina - (1) the Corallinas that are like Mlokosewitschi, i.e. reddish foliage, red or particolored blooms (2) Corallina of the Broteri type (3) Corallina pollen sent to me, which may be anything.

10799 - 10802 - These are in 7e but I have no notes on them whatever. Also in 1942 I made some crosses with pollen from Major Greshane's Corallina (see below).

There seem to be two kinds of Corallina, one near Mloko. with red stems and reddish leaflets, blooms red, pink or variegated; the other of the Broteri type, like cambessedesii, Ozieri Alba, Barr's Broteri and Barr's Corsica, though then the last is I suppose tetraploid.

1942 - 5 seeds of Albiflora x 15572 (Corallina Major Greshane)

F2, 1942, 9 seeds. These are F2's of Albi x 65916 giving six seedlings.

SAUNDERS WINDFLOWER STRAINS FOR HYBRIDIZING

I am taking an active renewed interest in the Saunders Windflower strains and so am trying to interest other hybridists to join in this quest for distinctive clones and strains. With this in mind, the material sent by Roy Pehrson many years ago has been located and will now be presented.

- Chris

l-25-72

Dear Chris:

Here's the account of the Windflowers from Silvia – wonderful as usual. It clears up some facts about these plants which I did not know.

First, the large number of plants, no doubt almost identical, which were lumped together into the two strains.

Then this circumstance suggests that their parent plants may not be too difficult. I bought Woodwardi (?) once and it died, but it may have been a poor plant.

I had 3 seeds on my F_2 last year and one of these is making a fine strong root. There probably would have been more, but I cut 3 blooms to take to the show — then froze them in getting my new refrigerator adjusted.

- Roy Pehrson

A FEW NOTES ON THE "WINDFLOWERS" - Clinton, New York
By Silvia Saunders January 20, 1972

Roy Pehrson has asked me to write something about "the Windflowers" to go with an article he has written on "Small-Flowered Peonies; the Prospects". This, of course, I am most happy to do.

First let me quote my father's remarks, taken from his own wonderfully detailed and readable notebooks, on the two first-generation plants, "Early Windflower" and "Late Windflower."

> " 12591-604: No. 6516 x Emodi (but 6516 is Species Tibet!). In 1938 all these were grouped together, to be called "Early Windflower". (My father must have thought he was using Woodwardi, and then found upon looking in his own records, that the seed parent was Species Tibet. He later concludes that Species Tibet is indeed Woodwardi, but that this plant is extremely variable.) "My plant has pink stigmas, and is taller and more vigorous than Woodwardi", he concludes.

So, after thirty years of our cataloguing Early Windflower as Veitchi x Emodi, it appears that it is actually Woodwardi x Emodi, Alas! Well, what's done cannot be undone.

I will continue with father's notebooks:

> "12212-233: Beresowskyi x Emodi. All these plants were grouped together as Late Windflower. Very little fertility; a seed only very rarely."

There were also two little F_2 seedlings at one time, but whether their parent was the Early or the Late, he did not know, and they never lived very long.

As we went on through the years both the Windflowers were widely distributed to people's gardens. In I960 I began to move all the more precious hybrids from our old nursery up College Hill (and called "The Ribbon" from its shape) down to my "new" one in our garden round the house. In the course of time we have had many big plants of both varieties blooming here through all the days of Spring. Instead of Early and Late, they should be called Very Early and Early! Early Windflower is always among the very first hybrids to open, some years on May 16. In a late season, the Early may not open till May 25. Late Windflower comes along about 8-10 days later, so that in a cool spring we have Windflowers in bloom for three weeks, I'd guess, and a delight they are, the entire time.

Apart from the difference in blooming seasons, I have never discerned any real differences between them. Some plants (and I think they are the "Early") have bright scarlet sepals in the fall, making a very pretty gay effect like tiny red autumn flowerets. Perhaps this is true simply of one clone. Since there were originally something like thirty-five clones, thrown together into two large groups, I suppose this could easily be the case.

I don't think I myself have ever raised a seedling from a Windflower seed. I have gathered and planted a very few in my 20 years here, but had no germination. However, there were plants in the old nursery labeled "Windflower F_{-2}" — perhaps four of them. They were carefully moved down here, and then I began to offer them to "special" people who I felt were particularly interested and "deserved" them! One of these F_{-2}'s I sent to Roy Pehrson in 1965 I believe. I do not recall its color, but he has since told me it is a pale pink. The first F_{-2} to really strike my eye was a little red one! A perfect replica of a Windflower, but in a matt deep cerise rose when fresh. Small gay blooms of about 9 petals. Outer white flares. Petals edged white as they age. Stigmas pale pink; carpels pale green. Filaments short, fine, white; disc white. Very gay charming thing and quite unique. Where did the red come from? Who can tell, indeed? About two years ago I sent my entire plant (saving a little division for myself) to David Reath. This past spring, mine had 6 blooms on June 9 (we had an extremely late season), and I noted: "one bloom has one white extra little petal with a red stripe in it. Obviously Windflower F_{-2}'s are interesting and varied". The plant was in bloom a week.

Two other F_2's are in a bed together, side by side. They could hardly be more different in plant habit, though the flowers are pale peach and ivory. One is very tall, has the peach-colored blooms, has lateral blooms too. The other one is extremely dwarf, with small ivory flowers; its petals are long ovals, prettily rounded. With its center in all gold and white, this is a very dainty little plant.

I cannot range these in the order of their blooming, but I think '**Sparkling Windflower**' (the red one) is last to bloom. I had its chromosomes counted, and they were reported to be 20. It is therefore a tetraploid if the count is correct.

It took me some years to recognize that, as a Family, this is an extremely interesting and varied one, and I wrote in my Special Breeders' List in the fall of 1971, drawing attention to them and recommending them for Breeders. Even with the extreme sterility of the first-generation plants, clever hybridists can no doubt manipulate them into setting seed. (I suppose they have some pollen). For, look at the Lutea Hybrids as a group: sterile as stone (almost) yet they have been made to yield an amazing new race these past years. And who of us is to say whether this new race isn't the first of a long series of brand new, undreamed-of peonies which are just now beginning to stir; and whether the next twenty-five or fifty years won't bring forth miracles — many of them.

MORE ————

The windflowers are making good progress, first the F_1's, then Saunders F_2's and now the F_3's are appearing. I have one clone, an F_3, which has been divided enough times to make a whole row! And they are fertile though not really beautiful. Surely, we can expect to get something nice from this strain though it is distressing that the plants are too large for the size of the flowers.

-Chris

CLASSIFICATION OF PEONIES CALIFORNICA-BROWNII AS WOODLAND PEONIES

Nancy Ann Halas

Every once in a while we make a little step forward in cultivation and this may be a consideration in the two that we have neglected — Californica and Brownii. Aside from being different in leaf and flower, they are also different in culture.

The seeds of both peonies are germinated in damp peat moss in a refrigerator at cool temperatures. This much at least suggests to you that the peony is subject to Phythoptera which is a root or leaf disease brought on by higher temperatures and at the same time moisture. The solution is coolness of the roots and a certain dryness when the temperature is higher. The easiest planting location is near the roots of certain trees that will deprive the peony of nutrients and moisture in the summer when the plant prefers dormancy. However the peony must retain its leaves and get at least a half days sun if it is to develop buds for blossoming in the next growth period.

The growth period is triggered by cold rain after about eight weeks of dormancy. If there are buds from sun exposure, there will be blooms. There are two times the peony could bloom, either very early in the spring or late in the fall. It could never bloom twice in one year however. In certain locations they could bloom either in the spring or in the fall but never both, depending upon the sun exposure to the leaves. However if the leaves die too quickly, the peony can never bloom for you, because a certain ripening is necessary before the buds will set. Examination of the roots will easily tell you if the peony will bloom or not. If the buds are sharp and pointed, these are leaf formation buds. But if the buds are like the head of a snake, sort of blunt like, then that is a blossoming indication.

Some people like to plant them under the branches of evergreens to shelter the leaves from moisture in the summer. However I don't think that some moisture on the leaves is that destructive as long as there is a quick run-off and the crown of the peony is in bark or gravel to prevent heat build up or disease colonies to multiply. Surprisingly enough, Botrytis is not a serious problem for these types of peonies. They appear to be immune to Botrytis and can easily stand cold freezing rain with impunity. In fact they won't grow in warm rain.

Whatever works exceptionally well for the conventional peony is destructive to this class. It could be a way of extending the peony season much earlier in spring than before.

I'm not saying that you will immediately succeed with these peonies because it is a little like learning the newest dance, your timing and reaction are not synchronized to the new beat. So it is with these peonies, like a new music, awkward at first.

SOME COMMENTS ON ARTICLE IN PAEONIA
(Volume 16, No. 1, March, 1985)

Nancy Halas

Page 4 of the March, 1985, issue of PAEONIA refers to article by Father Fiala, P. Californica, pages 5 & 6, Vol. 2, January 1971, issue of the Peony Newsletter edited by Don & Lois Kozak.

As an afterthought, it seems a little late in time to comment on the article which relates to a Brown making chromosome counts of 6,7,8,9,10,11, 12,13,14,15,16,17,18,19,20. This, by the way, is not the same Brown who historically first described the Peony Brownii, but another person with the same name.

Mrs. Edward Harding in the book published by her in 1917 has this to say about the Peony Brownii. "This is the only species native to the Western Hemisphere. It blooms in June and July, often near banks of melting snow. The flowers are dull red or brown and not attractive."

James Kelway in "Garden Peonies", page 60, states that Brownii was first reported in North America in 1826.

I had always assumed that the name was after the person who first reported it. Perhaps that is still true.

In "Genetics of Flowering Plants" by Verne Grant, Columbia Univ. Press, pages 389 to 394 discuss the variances of chromosomes in colonies of Peony Brownii and Peony Californica. The microphotographs were taken by Walters and appear convincing. Four variations of chromosomes are shown. All of them are with a chromosome count of ten. One chromosome count has what it calls five bi-valents and they look like ten horse-shoes. One chromosome count is shown with a ring of four, a chain of four, and a bivalent to make a total of ten chromosomes. A third shows a ring of eight chromosomes and a bi-valent interlocked with ring for a total of ten chromosomes. A fourth shows a chain of ten chromosomes.

What we should conclude is that it is difficult to take chromosome counts, since they are three dimensional and the time to take the chromosome counts has to be when the root tips are expanding. Then again the counts have to be repeated a great number of times to rule out experimental error or misunderstanding. About the certainty is that the species is diploid with a chromosome count of ten.

There are different ways of verifying the chromosome counts and that includes comparison with a known species as a reference.
We have to conclude that the account related to the issue in 1971 is probably in error, although I'm not certain either how the determination was made or just where the error could have occurred.

It is sort of a shame that although the species has been known since 1826 there has never been much interest in it.

1624D Shore Road
Port Angeles, WA 98362
Jan. 11, 1987

TO: Mr. and Mrs. Chris Laning

FROM: Irene Tolomeo

Hello -

Paeonia, 1986, has fed a lot of dreams and desires. Thanks.

Much of my enthusiasm this year centered around '**Age of Gold**'. Planted fall of '83 it was (Spring of '86) a many stemmed plant covered with lovely flowers. Pollination attempts were severely limited by the fact that we were away for all but the very beginning and very end of the flowering season. In our cool summers seed matures slowly and average first frost is about mid-October. In deference to the cold and rain, seed was taken Oct. 10th (5 by '**Tria**', one by '**Leda**', and one by '**Hana Daijin**'.) Only four of the seed (all x '**Tria**') remained firm and germinated.

'**Leda**', purchased fall of '85, bloomed earlier than any other tree peony. The blossom, cut at once to conserve the young plant's energy, was much more beautiful than the picture in Klehm's had led me to expect. The flower, matured in water in the house, produced pollen.

'**Zephyrus**', also planted Fall of '85, suffered from several fungal attacks but ended the season in apparent good health.

Just as I'm beginning to get a little confidence growing t.p.'s in the Northwest, we are planning a move to California to be nearer our mature children. Meanwhile the lovely seedlings resulting from the seed distribution program have been bare-rooted and replanted there. Some of the mature plants will go with us, canned. And we will resume the learning process.

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4 tFOr Yoxur iNterre#sT?%!!!

4866 Seven Hills Road
Castro Valley, CA 94546

March 10, 1986

Dear Chris:

On Friday the 7th, I had been to Toichi Domoto's to pick up some camellia grafting stock and he had given me 200 choice TP seeds and upon my return home I had received my copy of PAEONIA. Toichi just called to discuss the Nancy Ann Halas article on peony seed culture. I think I shall try this method on some of Toichi's seed. These are seeds harvested from select plants growing in the lathe house and were harvested after he had sent you a selection of seed.

Normally the seeds are planted in a cold frame which has hardware cloth on the bottom to protect it from gophers and moles. The seeds are left in the cold frame for two years. I brought some rooted seeds from Fort Wayne which were planted in pots and put in a cold frame but it appears that all have rotted. I will be receiving a tree peony plant from Domoto's as soon as the doubles start to bloom. The singles are just beginning to bloom as this is an early although very wet spring.

Our home in Fort Wayne sold in seven weeks' time and the buyer was insistent that he take possession on July 1, so we did not have the time to take plants in the fall as we thought. There was a contingency that permitted me to return in the fall and get the plants but I had foot surgery which made this impossible. The cost would have been prohibitive anyway. I left a good collection of peonies which I hope are appreciated by the buyers. My landscaping here will have some of the better tree peonies and Lutea hybrids, but most of the area will be taken by the camellias. I have quite a few plants in pots, many seedlings on the way and 80 grafted plants to be watched.

My interest in peonies will always be active and I hope to follow the many interesting developments which are taking place. I hope you are able to use that colchicine to further your interests and you and Lois are to be congratulated on your fine publication, PAEONIA. Keep up the good work.

Best personal regards,

Howard E. Burnette