PAEONIA

Volume 2, No. 4 December, 1971

REQUIRED READING — None

SUGGESTED READING -

1. The Peonies by John C. Wister, $3.50 from American Peony Society
2. The Bulletins of the American Peony Society
3. Srb*, Owen and Edgar — Advanced Reading on Genetics, 1965
4. Srb*, Owen and Edgar, Facets of Genetics, 1970, Readings from Scientific American.

*It has been asked — "What does Srb stand for?" Now I know. The names of the authors are as follows: Adrian M. Srb, Ray D. Owen, & Robert S. Edgar.

The PAEONIA is authorized by the American Peony's First lady -- Our Miss Saunders.

Our leader and teacher in hybridizing has been, and will continue to be, Roy Pehrson.

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

Suggested yearly contribution is $2.00 to cover expenses of printing and mailing.

See Page 4, September, 1971, issue - re. Rock's variety of *P. suffruticosa* –Roy Pehrson says: "Rock's variety 12 feet wide — as a suffruticosa I suppose it is not stoloniferous but at 8 feet height it could maybe arch over enough so that the 'drip line' would cover a 12 ft. circle."

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OUR SYMPATHY TO MRS. DONALD KOZAK -

A friend of many of us, Donald Kozak, 8215 Branch Road, Medina Ohio, 44256, was killed in an automobile accident on October 9. Don and his young wife, Lois, (who is the niece of Father John L. Fiala) had already been able to make their influence deeply felt by the Peony Society. At the Peony Show in Mansfield, Ohio, in June of 1969, the pair led an extremely good workshop on Health and Culture of the Peony, and it is to be regretted that they have not been able to repeat it at subsequent shows.

Then in the spring of 1970, the Kozaks became "printers and publishers" of the small Newsletter which goes out to about one hundred people who are deeply interested in the techniques of Peony Hybridizing. The letter was written by E. L. (Roy) Pehrson, of Lafayette and Mankato, Minnesota.

In its first twelve months, four issues of the letter were put out by this excellent triple partnership. It has now been taken over by Chris Laning of Kalamazoo, Michigan.

It seemed that Don and Lois were just getting keenly interested in acquiring good peonies, and it appeared likely that they would, given time, go into hybridizing. Don’s most untimely death illustrates once more how precious each member of a very small Society can be, and how much influence one person can exert. Harold Tinnappel, Sam Wissing, and now young Don Kozak, are losses that it is not easy to recover from, and they can never be replaced.

The sympathy of all of us .goes out to Don's lovely young wife, Lois, as well as to Father Fiala, who is close to them. - *Silvia Saunders*

PEONY BREEDERS' BONANZA

by Silvia Sounders

Peony breeders got a real Bonanza this year. Roy (E. L.) Pehrson of Mankato, Minnesota, told me at the Peony Show in Edina in June that he probably would have a few extra roots of number 12128 this year, and would I like some for my customers? "Oh yes, thank you", I replied. Then it developed that besides 12128 there might be a "couple of roots of '**Moonrise**'". "These are plants I'll no longer need, as my concentration on certain specific lines of breeding increases," Roy explained. Again, gladly accepted.

Then mid-August arrived and with it, the Pehrson roots. By mid-September four big boxfuls had come in, containing 60 plants in all. And not a one that looked as if it were a division, or had had a division out of it. All huge, entire, bursting with great pink buds and exuberant vigor. And not a plant among them that is over five years old. I began to send them out to my customers — my Hybridist Customers — for these are precious Breeding Material. Some of the plants contain 5 species bloods, and are therefore Quintuple hybrids. Quad F-2 x '**Roselette**', for instance, contains; lacti, officinalis, Mloko and macro (from the Quad side) and lacti, tenui, Mloko (from the '**Roselette**' side). Two shots of Mloko.

There were 24 with five bloods, 16 with four bloods, 9 with three bloods, and the remainder, 25, had two bloods. In order to send Quintuples to a few more people I was able to do a little dividing, and in the end there were 74 roots sent out. In addition, many bagfuls of fine robust seeds, of these same or other equally precious parentages. By all odds the most exuberant roots and seeds I have ever had the pleasure of distributing. Somewhat later, David Reath sent me a great number of mixed seeds which, again, I was happy to distribute to these and other "hybridists, Actual or Potential".

These plants, as well as anything could, give us a picture of what Roy Pehrson is up to and has been up to for these past years. Any one of us could have done it, but he did do it. He criss-crossed his hybridizing every which way, and although it may well be that none of these plants, when they bloom, would be worthwhile putting on the market as Garden Peonies, the genes they carry make them Treasures to all of us.

And they would give a great 'Shot in the Arm' to our beloved Paeonia. So, who knows? 1971 may go down in Peony History as a Vintage Year. What 1911 was to Champagnes, 1971 may prove to be for Peonies.

Twenty-six hybridists took part in this Bonanza. Sixteen were known to me previous years, plus ten new names, they received at least one (and some got four or five) of Roy's Peerless Plants. The sixteen "upperclassmen" are all on a list called "50 plus 30 Hybridists, Actual or Potential" (this exists in typed form for anyone who is interested in seeing it), and I think I will list the ten new ones here, for unless I miss my guess, there is going to be some pretty lively correspondence among them, come Spring, 1972.

Mrs. E. L. Bennett, 1933 West Lawn Avenue, Madison, Wisconsin, 53711
Dr. John S. Dumanski, 180 Lexington Avenue, Passaic, New Jersey, 0?055
Mr. Cameron English, 41 Citation Drive, Willowdale, Ontario, Canada
Mrs. Carl F. Hertz, RR #L, Nevada, Iowa, 50201
Mr. David J. Hochstein, ILJ.4 E. 48th Street Brooklyn, Hew York, 11234
Mr. David W. Hudson, P.O. Box 127, Amberg, Wisconsin, 54102
Mr. August Krupien, Bethmour Road, Bethany, Conn., 06525
Mrs. George Modderman, Alexander, Iowa, 50420
Mr. Harold Rogers, 20 Vernon Terrace, East Orange, New Jersey, 07017
Mr. Richard J. Sloan, 6450 Jonathan Lane, Gurnee, Illinois, 60031

And I am adding finally the name of -

Mr. Dara Emery, Horticulturist, Santa Barbara Botanic Garden,
1212 Mission Canyon Road, Santa Barbara, California, 93105

Mr. Emery is keenly interested in peonies, and we should all know him. Perhaps he will be willing to publish a list of the places where the species peonies may be obtained. He is on the list as John Wister, Brian Mulligan, and Silvia Saunders are; no hybridists they, they try to make themselves count by helping out in other ways.

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One man's evaluation of our outline in the September, 1971 issue of the Newsletter, and it is a letter from a great hybridist. These letters from our leaders are a great delight! (How soon will he be able to drop the Jr. from his name, I wonder).

Sent by Edward Auten, Jr., 2148 Horace, Abington, Pa., 19001 –

In Illinois, 1910 to 1970, raised 30 acres peonies, thousands of seedlings, 2800 for advanced trial, named 275. Gilbert H. Wild and Son, Sarcoxie, Mo. offered 125 of my varieties in their 1970 catalogue.

I. My earliest '**Early Scout**', May 3; May 13 - 21 officinalis x lactiflora hybrids; my latest June 10.
   I-C and I-D – phooey.
II. All phooey except yellow
   B. Bicolors: '**Carolina Moon**' and many Japs.
III. A. Size 3 inches to 8 inches best
   B. and C. - size least important. Small blooms - '**Polly Prim**' side buds perfect doubles, 1¼ inches.
   D. Ideal is one large bloom, 4 med. size, perfect side buds -'**Maid of Honor**'
IV. A. - height 14 inches to 4 feet. '**Peggy**' - 14 inches. '**Suzanne**' - 4 feet. Stiff stems a must.
V. A tiny yellow lump in a very narrow petal in center of finest white Lemoine double yielded less than pinhead batch pollen. Result, finest white and yellow Japs, '**Moon of Nippon**'
VI. Why put in pots? why force? I love many different flowers. Peonies and narcissi, and roses are tops!

My age - 90 /s/ Edw. Auten, Jr.

See -even our leaders can use our outline! Ed.

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Dear Mr. Laning: September 30, 1971

The September Newsletter and the September Bulletin have both arrived and I am much happier.

I am inspired to write to you. I like your outline. I like the emphasis on the earlier flowers and on the later ones. I don't know how soon somebody can get re-bloomers or ever-bloomers, but certainly somebody should try. In the 1920's it could never have occurred to me that there would be re-blooming Hemerocallis. We have them now!

There are good yellow and good purple tree peonies. Certainly someone will get them in herbaceous peonies.

All the single varieties I know fade or wither quickly in hot sun. They need more substance, much, much more substance. And as you report Mloko doesn't grow well for most of us.

I think your note on Potanini is of extreme importance. It sounds as if a great and thrilling breakthrough might be coming sometime soon (tho I'll hardly live to see it!)

Your editorial is splendid. Do follow it up. Do try to do more to find (and catch!) younger men and women and try to open their eyes and their minds and their hearts to the fascinating hobby of peony breeding.

You quoted me correctly as having been worried, (with Roy Pehrson and others) about the survival of the Society and its Bulletin. I have seen both go down-hill for a long time. During that time I have also been aware of the progress of other special plant societies. Their leaders seem to have been able to catch new members, younger in years, and even more important, younger in enthusiasm.

I don't think that we are going to lack great men like Saunders, Glasscock, and. others in the future. I fact I am hopeful that Dr. Reath, Mr. Pehrson, and Father Fiala, to name only a few, will in time not only take their places but, building on their foundations, will advance beyond them.

Let us all hope so. Maybe you and your Newsletter will lead the way, with Mr. Sindt, Mr. Harper and Mrs. Kessenich helping you. Your Newsletter and their new Bulletin certainly fill me full of hope.

Yours sincerely,

/s/ John C. Wister

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NOTE: How do you like our new name "PAEONIA"? To me it has all the "class" that you could desire. At first it seemed to me too exalted a name for us to use, sort of like trying to start at the top and working up. Since none other but Our Miss Saunders suggested the name, and she is top man on the totem pole in the peony world, I hope none of us will feel this name as overweening. I like it!

P. CALIFORNICA

P. californica (along with **P. browni**) is an American species. Its flowers are very small and inconspicuous, the plant is very short of stature, and is quite difficult to grow. (And what can be the use of it is more than I can see) — NO! Wait a minute!! This species has two very important traits that we may be able to incorporate into our own future hybrids:

1. A unique growing habit. It does not object to having two growing seasons per year when the right conditions are provided.
2. Seed germination differs from all other peonies. Seed will germinate in as little as six weeks — with no rest period.

And if a third reason is wanted, you can add chromosome count (see Rev. John L. Fiala's article in the January, 1971 Newsletter issue).

Read the following articles (and try to figure out who you may be able to help on the project).

1. Dr. Saunders' information.
2. Don Hollingsworth's notes.
3. Stress Father Fiala's article in Jan. '71 Newsletter.

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NOTES ON P. CALIFORNICA FROM NOTEBOOKS OF A.P. SAUNDERS

Note: Through the generosity and labors of Mr. Frank Ruppert of Julian, Calif., quite a few plants of "our own" only wild peony species, *P. californica*, have been distributed in the past year or two to various persons interested in having them in their gardens. One or two of these have expressed interest in knowing whether any attempts were ever made at using *P. californica* in hybridizing.

A. P. Saunders owned plants of *P. browni* (the very similar if not identical species) at one time, and made the following notes on his attempts to hybridize with it.

August 1927_____3 plants from D. M. Andrews (Boulder, Colo).
Seed from Anderson (1927)__1 up 1928
Seed from Correvon (1927)__a few up 1928
Seed from T & M____March 1928 in pot. - about 12 up 1928

The Correvon seed which was in a frame germinated quickly in spring of 1928, but the leaves withered early in summer and it looked as if the plants might have dried. (Which they had!)

Note of May 23, 1928: A pot containing 22 *P. browni* seeds from Thompson & Morgan, sowed March 28, got tipped over. About half the seeds were disclosed and I think every one that was visible had germinated, and in a couple of weeks they should be above ground. This is the quickest germination of Peony seeds I have ever known of. Three months.

May 26, 1928. *Browni* opening. Also the first macro-sinensis hybrid # 1687. (Macro itself is beginning to drop).

Browni is a funny little flower: - the green sepals hiding the very short reddish-brown petals. The anthers come off easily and the filaments leak a white (clear) juice reminding me of Delavayi. Try crossing them.

Browni seems to be proteragynous. The opened flowers had no anthers burst, but the stigmas looked ready.

1930. Seeds from Thompson & Morgan sown May 5. One up June 17: Just 6 weeks. December 21, sowed in 2 pots about 60 seeds from Lester Rowntree & Co., Carmel, California.
Set 8 fine seeds 1930.

Douglas' Journal (Lib. Mass. Hort. Soc. pg. 192) 1826.

> (149) "Paeonia Sp. root large and jointed, partly creeping, stem glaucous, red; leaves alternate, compoundly lobed, smooth & glaucous; flowers small, petals same length as the stamens, centre and the outside dark purple, on the edge and inside bright yellow; a low plant 6 inches to a foot high, in great abundance in clumps among low bushes on the sunny side of the mountains, flowering in perfection on the confines of perpetual snow; lower down it is seen in feebly enervated plants, and in the more temperate regions completely disappears. This valuable addition will, I trust, be an acquisition to the garden."

He doesn't say exactly where he was, but approximately at the junction of the Walla Walla and Columbia Rivers. Blue Mountains, that's where he was. He speaks in a letter to Joseph Sabine of having found a "most beautiful species of peony".

March 1932. Description of seeds. Very large, long oval, very dull, brown.

1933. Twelve plants from Mrs. Nye. 12017 in 16(4). (*12017 in 16(4) gives the plant accession number, and it's location in the nursery. - Silvi*a)

Mrs. Ruth H. Brant, Peony Bulletin #42, page 16, says "Spending two winters in California, I found *P. browni* on my brother's "hill" near San Diego. There it blooms in February. But I have read that in the mountains it blooms much later, sometimes as late as July."

Gray Herbarium has specimens from Wyoming, Idaho, Nevada, California, Washington, and Oregon. Some have flowers larger than others. Californica not distinguishable. Sometimes quite tall. One specimen with stem 1½ feet long. "The type was found by Douglas near the confines of perpetual snow on the sub-alpine range of Mt. Hood, Northwest America, 1826. Flowers June-July." Hook. Fl. Bor. Am. 1-27-1829. Specimens taken mostly high up, 3500 ft. or more. Oregon. "May, 3500 ft. August, 5000 ft." 36 specimens in Gray Herbarium.

CROSSING RECORDS:

Browni (as seed parent)

1928	x T.P. - 2 crosses of t.p. '**Madame de Vatry**' on browni failed.
1929	x Mloko - 1 (fair)
1931	x Coralline 6101 - 20 fair
1933	x Obovata alba - 3 rather soft plus green pods. 0.
1934	x tenuifolia - 16 poor, 1 good, plus 0, plus 9 poor.
1935	x tenuifolia - 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

Browni (as pollen parent)
(1927 pollen from Andrews; probably not very good).
on tenuifolia 1927 - 0 plus 0
1928 - 0
1934 - 0. 0. 0. 0.
on tenuifolia rosea
1934 - 0. 0.
on Veitchi 1927 - 0 plus
1928 - 1 plus 0 plus 0 plus 0
1929 - 0. 0. 0. 1.
on Woodwardii 1927 - 2 seeds, but hollow
on Mloko 1927 - #2790 - 0. #2791 - 0 plus 0. #2792 - 0
1928 - #2781 - 0. #2783 - 0.
1930 - #2784 - small red seeds, no blacks, plus ditto, plus ditto
on sinensis 1927 - on '**Edith Grant**' - 1 softish. on #463 - 1 soft
1934 - #3494 - 0. 0. 0. on '**Snowflake**' - 0. 0. 0.
on macrophylla
1927 - #1482 - 0 plus 0.
1928 - 0.
1930 - #1488) lots of reds only, plus empty pods.
on Wittmanniana 1927 - 0.
on Otto Froebel
1927 - 2 seeds; only 1 good.
1928 - 0 plus 0
1929 - 1. 0.
on officinalis rubra plena
1928 - 0 plus 1.
1929 - 1.
1933 - 0.
on officinalis rosea plena
1928 - 0 plus 0.
on tree peony 1928 - 0 plus 0.
on Delavayi1928 - 0. 6. 0. 0. 0, 0.
on obovata alba
1933 - lots of red seeds, 2 blacks.
on obovata Jap
1935 - reds, no black seeds.

A few explanatory notes by Silvia. Saunders:

- Anderson must refer to Mr. Edgar Anderson of, the Missouri Botanic Garden, St. Louis.
- Correvon is, of course, the great Nurseryman in Geneva, Switzerland.
- Sinensis, I hardly need say, is today called albiflora or lactiflora.
- Mrs. Brant was from Iowa City, Iowa.
- t.p. is tree peony.
- I suppose 0 repeated nine times, means 9 crosses, all without seeds whatever.
- With respect to Veitchi, I find in a later notebook, under the number 8906, "Browni x Veitchi. No notes- I don't suppose this plant ever could have been genuine."
- Mloko 2790, 2791 etc. were numbered plants of Mloko.
- There is no record of whatever happened to the six seeds obtained on Delavayi in 1928.
- Obovata alba is today called Willmottiae. Is Obovata Jap perhaps a form of it?

PEONY CALIFORNICA NOTES -- From Don Hollingsworth's File

30 October, 1970 - letter to Roy Pehrson from Don Hollingsworth.

Roy: Herewith a copy of my notes on P. californica from Frank Ruppert's visit last winter. My plants were in pots and kept dry when they died down, in an attempt to keep them dormant until spring. However, I examined them last night and all are dead but one and it is trying to grow now, so watered it and moved to the light.

You might suggest to Laning that he mulch that plant as one would a Madonna lily to see if it will hold in the ground outdoors. However, in its (the species) adaptation to Southern California conditions of long summer drouth, it may have acquired a winter blooming pattern as he proposes. My skimpy notes indicate wild plants in good bloom there during early June (not peonies) so the local pattern may not be limited to late winter, yet the ecology of the area tends to "put" native things into dormancy for the summer period.

A cool greenhouse might be necessary to keep this plant well enough for reproduction.

NOTES: 28 December, 1969, at garden and fields of Frank Ruppert, Julian, California.

Geography: mountain
Elevation: 3600
Rainfall: USDA Crop extension agent says maybe l8"
Temperature - lowest 1968-69; 8° F
USDA plant handiness .zone: 8b - 9a around 20° F minimum temp. A lot of moisture winter and spring of 1968-69, dry summer and fall. Had a good rain around the first of December.

"Wild" *Paeonia californica* growing, some as much as 4 inches high. In the garden (irrigated) a plant had stalks about 10 inches tall, bloom buds size of a dime or a little smaller. Mr. R. says they would bloom in about 6 weeks (how about freeze?)

In the garden, *P. delavayi*, still green or maybe with new growth. Another t.p. Akushi gati, showing dormant with mature buds.

Collected seeds and plants of *P. californica* -

Location A. Under dead oak tree, a lot of bark, etc. has built up from the old tree. Plants have long necks where they are seeking new level for buds. Found two seeds with roots, one broke off. Other seeds showing no development. Rooted seeds were probably from 1968 season? A lot of organic material, roots almost entirely in this.

Location B: Under big tree with thicket around. Plants smaller here than at "A", probably due to light and competition for moisture. 69 seeds were collected by Frank at this location.

Other Flora - Holly oaks, big manzanitas, one manzanita in bloom, buds showing on others.

Questions to ask Frank:

Does this peony californica grow at other area locations?
Any open places?
Where did report of 20 chromosomes come from?
Elevation?
Rainfall?

Other peonies: Frank says that garden varieties of lactiflora bloom from April 20 to the end of May. These dates also include some of the named hybrids.

He also has several seed grown species acquired as small plants from the Santa Barbara Botanical Garden, where the seeds were grown.

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WHAT NEEDS TO BE DONE

You people who live in the *californica* area, or at least live in a state where it grows, can be of real service to our Peony Team. Will you be active members on this project? Now this is what should be done: COLLECT SEEDS!

Also:

1. Locate an area in your state where californica grow in the wild.
2. Give detailed description of its location, such as elevation, rainfall average per year, and rainfall by season.
3. Temperature extremes for the year - also during growing season.
4. General conditions - such as
    a. Growing in woods or forest
    b. Growing in full sun or shade, etc.

Don Hollingsworth's article gives you an idea of what is really needed.

Your State botanical gardens have this plant and under their cultivation it is much bigger and more robust. *Californica* responds favorably to irrigation and cultivation, so we need information on their plants of *californica* and/or *browni*. Cultivated plants could be of more value to us than the wild but let's have an all out - full steam ahead - program and get all information possible on both wild and cultivated plants. Be sure to ask for seeds!!

Private gardens should not be overlooked, and if the owners are cooperative they may even save the seed for you and donate a plant, (This, I think, is fun.)

No matter what <u>your</u> opinion may be, ask anyone and everyone who is involved in the growing of *californica* and *browni* if he has ever seen a hybrid or cross of this variety.

Does this all sound like too much work? Don't you have the time? You are not interested in this species? Well then, would you be willing to go to your public library and have your librarian look up this information for you and then will you send it to me?
The following names are the persons that we are especially dependent upon:

Mr. Elmer Kirchner, Hillsboro, Oregon
Mr. Frank Ruppert, Julian California
Mr. Brian Mulligan, Seattle, Washington
Mr. Dara E. Emery, Santa Barbara, California.
Mrs. Valeria Colmegna, 6?11 Ludiano, La Grillaia, Tessit, Switzerland

Will you people cooperate, or have some friend to help us out? And if you know anyone else that could be of assistance, please let us know!!

P. californica -

1. Willing to support two growing seasons per year.
2. Seeds seem to have ability to germinate in any season.

3. Plant hardy but very difficult to grow and (for me) impossible to make bloom.
4. Plant very short but roots seem gigantic.
5. May be good for re-blooming. May be a help in eliminating seed dormancy of *Paeonia*.
6. Possibly new color and gene pool. (Someone should send blooms to Cooper for his color test if this hasn't already been done).

Again, let me stress: we need seeds and plants from both the wild and the garden plants for this project; but more, we need data and hope to hear of a hybrid of *californica* growing in some garden.

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ROY PEHRSON'S REPORT ON HIS "ITO TYPE" CROSSES OF 1971

I'd decided to make a perfunctory report — with apologies, because my results don't make the sense I'd hoped. I'll give it all to you so you can see what I mean.

'**Largo**' x '**Aurore**' - 3,3,1,1,1,000000000

'**Vesper**' x '**Golden Isles**' - 1, 000000000000000

'**Vesper**' x '**Amber Moon**' - 3, 2, 2, 1, 1, 1, 0 0 0 0 0
'**Nippon Beauty**' x '**Amber Moon**' - 1, 1, 00000000

'**Vesper**' x '**Golden Bowl**' - 1, 0
'**Ama no Sode**' x '**Golden Bowl**' - 00000
'**Minnie Shaylor**' x '**Golden Bowl**' - 2, 1, 1, 0 0 0 0 0

'**Plainsman**' x '**Argosy**' - 1, 0000
'**Christine**' x '**Argosy**' - 2, 1, 1, 0 0 0

'**Kate Barry**' x '**Chinese Dragon**' - 2, 1, 0000

'**Moon of Nippon**' x tall lutea - 0000000
'**Mary Moy**' x tall lutea - 000000
'**Ama no Sode**' x tall lutea - 00000
W. Jap x tall lutea - 1, 0000000000
'**Petite Rene**' x tall lutea - 1, 1, 1, 1, 00000000000000000
'**Vista**' x tall lutea 1, 1, 1, 0000000000000000000000

'**Golden Dawn**' x lutea # 14 - 3, 2, 0 0 0 0 0 0 0 0
'**Vesper**' x lutea # l4 - 000

'**Vesper**' x Delavayi/lutea #1 - 2, 1, 1, 0 0
'**Petite Rene**' x Delavayi/lutea #1 - 3, l, 0000000000000000000000

'**Nippon Beauty**' x Delavayi, tall maroon - 100000000
'**Vesper**' x Delavayi, tall maroon - 0000
Pink jap x Delavayi, tall maroon - 220000
Pink jap x Delavayi, tall maroon - 20000

'**Golden Dawn**' x Ludlowi - 1, 1
'**Vesper**' x Ludlowi - 13, 4, 3, 1, 1, 1/0000000000

'**Gay Paree**' x Potannini - 1, 1, 1, 1, 0000000000000
'**Golden Dawn**' x Potannini - 5,00000
Nippon Gold x Potannini - 4, 3, 2, 1, 1, 1, 0 0 0 0 0 0

'**Nippon Brilliant**' x F2A – 4, 2, 1, 1, 0 0 0 0 0 0 0
'**Petite Rene**' x F2A – 0 0
Giant Jap x F2A – 2, 1, 0 0 0
'**Shaylor's Sunburst**' x F2A – 7, 5, 4, 2, 2, 2, 1, 1, 1, 1, 0 0 0 0 0 0 0 0

There is something wrong in all this. In some way I have surely goofed for there are certainly too many seeds. Probably in almost every group of crosses listed some of the seeds harvested are not real hybrids.

In order to modify these data so as to make them more realistic, I'll make some assumptions:

1. Where single seeds are shown they are genuine.
2. Where two in a pod, one only is real.
3. If three or more - none is hybrid.
4.

Having "corrected" the totals in this manner, it is now a simple matter to compute values or percentages representing the comparative effectiveness of each pollen in producing hybrid seeds. Simply divide the number of seeds assumed to be hybrids by the total crosses made. It works out like this: -

F2A _____ .45	'**Aurore**' _____ .36	Lutea No. l4 _____ .20
Ludlowi _____ .44	Potaninni _____ .29	Delavayi/lutea #1 __ .16
'**Amber Moon**'_ .38	Tall Delavayi __ .25	Tall lutea _____ .10
'**Argosy**' _____ .36	'**Golden Bowl**'_ .20	'**Golden Isles**' _____ .07

My previous guess that lutea and delavayi (species) pollens might be more effective than the hybrids is not supported by this data and I'm compelled to abandon it.

Dave Reath suggested that unreduced gametes may have played a part in the production of the "lutea" tree peonies. On reflection I can only agree. If it's true, then all the following statements probably are true also.

1. The lutea x suffruticosa cross is possible only when undivided gametes are involved.
2. All F1 "lutea hybrid" tree peonies are triploid.
3. F2 plants and backcrosses may be either diploid or tetraploid, and possibly fertile.

In the making of "Ito" hybrids the following statements, though less certain, are also probably true.

1. The cross is possible only when the pollen plant provides 10 chromosome gametes.
2. The "Ito" hybrids are triploid.
3. Lutea (species) or delavayi (species) pollens will be less effective than any other because unreduced gametes again required.
4. F1 hybrids somewhat better - some gametes will normally contain all 10 chromosomes.
5. F2 lutea hybrids will be most effective of all if tetraploid. All pollen grains will have 10.

It's on the basis of argument No. 5 that I obtained some of Gratwick's advanced generation hybrids to try. Perhaps one or more of these may be tetraploids.

I'm going to try my best to get more hybrid plants. If I don't succeed I won't be too disappointed. It's going to be immensely interesting to watch the baby plants I now have grow into adulthood.

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THOUGHTS RAISED BY ROY'S REPORT

by Chris Laning

All of Roy's article makes sense to me, but there is more to the picture than the "Ito type" seeds. What about the remaining seeds? Are they different from ordinary seeds? Let me explain my thoughts

Lactiflora x tree peony

1. Crosses protected meticulously.
2. Seeds produced were either -
   Real "Ito type" or –
   Lacti, Haploids arising through pseudogamy.

Then –

1. Lacti haploid necessarily is homozygous.
2. Monoploid - having only the N chromosome number; this also should be homozygous.

And then -

1. All F2 seedlings produced by selfing must be homozygous (running as true as in a species).
2. Eliminating need for inbreeding thereby providing method of applying gamete selection for breeding.

See Discussions in Cytogenetics by Charles R. Burnham, pp. 179-184. (If you can locate this book).

Parthenogenesis

1. Development of egg without fertilization – or, through pseudogamy – development of egg by pollination without fertilization or by fertilization of primary endosperm nucleus only. Then –
2. Monoploid offspring (being diploid) through restitution nucleus should be homozygous.

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Mr. Dara E. Emery, Santa Barbara Botanic Garden, California, is a new member of our peony newsletter readers' team. Two paragraphs from his letter of October 29, 1971, are presented here:

> "If the newsletter may include short notes of species wanted and species available, please let me know when you must have the material for the next issue of the newsletter. We have a few species available and would like to obtain plants of the Mediterranean species.
>
> "On the list of those receiving the newsletter are no doubt some commercial people, thus is there an objection to a notice offering to give plants free of charge or to trade same? I do not like to junk perfectly good plants which someone else might use, yet surplus or unneeded ones must be disposed of. Thanks for your help."

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OMNIBUS SECTION
(of this and that)

Note to Rev. John Fiala, Dr. David Reath, Mr. Fred Cooper and others: Processes are of more value than the products developed when thinking of peonies, so tell us HOW you did what you did and if possible, WHY!

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Reporting on failures as well as successes will provide a more nearly complete picture of processes and goals. Error corrected gives double impact. Don't fear mistakes, use them!

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It isn't what you know — it's what you do with what you know that is productive.

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Reminder: Have you renewed your membership in the American Peony Society (for 1972)? And if you are not a member, will you please think about joining us. It's $7.50 per year.

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SWAP COLUMN:
Miss Saunders suggests having a "for sale and wanted" column as a service of our newsletter. Do you want it? O.K., then develop and make use of it. As for me, I don't believe in selling anything I can give away.

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Note to Howard L. Treganza, 515 Maple Street, Canton, South Dakota

'**Primevere**' x '**Alice Harding**' T-P. cross would produce yellow herbaceous plants. This type of cross is what is now called "the Ito cross". Mr. Ito of Japan was first to successfully cross lactiflora x tree peony and produced nine plants, eight of which grew and prospered. Five of these are available from Louis Smirnow at $50.00 per plant.

When you try this ("Ito") cross, pollen from '**Alice Harding**' T.P. on '**Primevere**', you will find it "takes" very poorly, maybe not more than ore true hybrid out of 100 crosses will be produced. BUT WHAT A PLANT is finally obtained!!

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Does any one of you people have Oriental Gold, a yellow lactiflora? Is it a good yellow? Does it set seed, or/and have good viable pollen? Do you like this clone? Let us hear about it.

Miss Saunders writes -

"Cameron English of Willowdale, Ontario, called me today (September 29, 1971) in great excitement. '**High Noon**' has a big bloom on it! This is the latest I think I've heard of a peony re-blooming. '**Renown**' does it too but not in my garden this late.

Roy Suggested to me (and Miss Saunders is still writing) that this re-blooming is merely that the plant is over enthusiastic and can't wait for next spring — but can't we breed over-enthusiasm into the race? I believe men who are crossing lutea hybrids and herbaceous should use '**Renown**' and '**High Noon**'."

Ed.: I believe *P. californica* could come into play here too if we can hybridize with it.

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From Fred Cooper of Ottawa, Canada (re. Potanini.; tall yellow)

> Examination of the pigments from the flower of potanini Tall Yellow indicates that it is different from both potanini trollioides (a single chalcone) and lutea (carotenoids). This flower appears to have 4 or 5 distinct yellow pigments, probably 3 being chalcones (one being the same as found in trollioides), a yellow flavenol pigment and perhaps a carotenoid pigment (not a major pigment, and maybe only an artifact).
>
> All this is pretty academic, but it does suggest a possible hybrid origin for this plant. Nonetheless I believe it should perform in the same fashion as predicted for trollioides when used in hybridizing.