

PAEONIA

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Editors: Chris and Lois Laning
553 West F Avenue
Kalamazoo, MI.

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MAGNOLIA

Three magnolia trees have produced such a prodigious crop of seed this year that distribution is possible. Clones that produced this crop are:

M x soulangiana

Dr. Merrill

M x stellata

M virginiana produced only a few

M macrophylla - none

M. macrophylla is a tree that sports flowers up to 12 inches in diameter — white and of heavy substance. It probably is not hardy in Zone 5 as it dies back often. Seeds came from Don Hollingsworth, germinated well, but even with protection of the plastic A-frame, all except one died.

I have seedlings of M. soulangiana, Dr. Merrill, M. stellata, and M. virginiana coming along nicely and all seem to bloom at an early age.

- Chris

NOTE: Paeonians, a newsletter needs readers that contribute articles! If at some future time you receive our Paeonia newsletter and find that it has just one word -- "Hi!!!" you'll know why.

LACTI x EMODI

For many years a search has been going on to find a fertile seed on '**White Innocence**', without success. There must be 30 plants in the row and a half and each plant a giant! Last year two seeds were found, one of which was no good, the other is still in vermiculite, still appearing sound, but not indicating evidence of germination. This is distressing since I expected something great from this unique clone. Now, I find that another clone of this type of cross is fertile and has excellent characteristics. It is '**Laura Dessert**' x Emodi, a very big good plant with many bright red single flowers. I received it from Roy Pehrson a long time ago. Why this plant had been neglected for so many years, I cannot explain. Many seeds were collected and about half of them (50) are good! This just has to be the discovery of the year for me!

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Windflower F₂, an off-white single has been doing well lately and has been divided into 18 plants that are now of nice size. Roy Pehrson sent this clone in a group of plants he supposed were Itohs. These pseudo-Itohs are lactiflora x T.P. mix, which means pollen from suffruticosa applied to lacti stigmas -- from this Windflower F₂ has been gathered 90 seeds.

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Veitchii x Mlokozewitschii did well in that it produced 34 seeds from four plants. Because of its parentage it probably has value in hybridizing though the flowers aren't all that great. I must use it with the '**Nosegay**' F₂ which is Mloko x tennui – this '**Nosegay**' F₂ has excellent yellow flowers (I believe this is a tetraploid) and is fertile – 150 good seeds this year from this cross.

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'**Halcyon**' F₂ is a collector's wish come true. The plant is first class and the flowers are darlings. It produces seeds each year which germinate well, giving little seedlings which have always frozen out in the second year of their lives. This time they will be protected from freezing. Twenty-four seeds have been collected.

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'**Sable**' X Super "D", #113 which is only mildly fertile and #114 which produces a good crop of seeds are two very tall plants with dark red single flowers. The stout stems do not fall over as does their mother '**Sable**' though almost as tall.

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'**Moonrise**' X '**Archangel**' #105 is a white double that will be used as a pod parent. As time goes by, it produces less and less pollen so hybridizing with it will be fun. From several plants of it, about 180 seeds were collected. Next year I should use '**Alice Harding**' (lutea hybrid) pollen on it since the plant itself is massive.

Quad F₃ X '**Moonrise**' - #123 is an excellent tetraploid. The whole row of it should be used as a pod parent. The flowers tend to be semi-double so great care must be exercised in protecting it from unwanted pollen. I doubt that I'll find time to do this.

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Pehrson's Best Yellow F₂ seedlings all have off-white flowers but the foliage is light green indicating there is a possibility of recovering the yellow in future generations. From a row and a half of these seedlings, a quart or more seeds were gleaned. Our seed distribution program should make good use of this bounty!

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P. decora will be used because of its dark, dark red flowers and its furry (tomentose) leaves. It is not tall, therefore it should be of use in developing dwarf plants. Seeds are produced in a satisfactory number but the seedlings seem to have over wintering problems. Should we give these the same care as T.P.'s get? I guess so.

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In working with plants that have such diverse characteristics, the goal is not a collection of exquisite clones for introduction, but rather, a gene pool that will have unlimited possibilities. American melting pot or Americana is the general idea of the route I choose to take. Now, if along the way we find incompatible crosses that produce stunted plants, these seedlings will be a basis for a dwarf line. But what I really want is miniatures that are only inches high – and while I'm at it, I'll hope for a vining type that runs along the ground.

P.S. If anyone has a runt plant that he wishes to give to me, I'll say thank you.

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SEED DISTRIBUTION

From Mr. and Mrs. De Reamer (all seeds are open pollinated).

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|-------------------------------|--------------------------------|
| 1. 'Charlie's White' | 7. Spoon Petals (jap seedling) |
| 2. 'Bo Peep' | 8. 'Walter Marx' |
| 3. Dark Red Single | 9. Pale Pink Seedling |
| 4. Doreen type (jap seedling) | 10. Mixed |
| 5. Medium Pink Single | 11. 'Primevere' |
| 6. 'Lotus Queen' | |

From Chris Laning

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|---|--|
| 1. Lactiflora mix | 7. 'Vista' x 'Archangel' |
| 2. Quad F ₃ | 8. 'Serenade' F ₃ |
| 3. Quad F ₄ | 9. Quad F ₃ x 'Moonrise' |
| 4. 'Sanctus' x 'Silver Dawn' F ₃ | 10. Quad F ₃ x 'Archangel' |
| 5. Tetraploids from pink clones | 11. Tree peony seed (suffruticosa) |
| 6. Roy Pehrson's Best Yellow F ₂ | |

From Gus Sindt

- | | |
|---------------------|---------------------|
| 1. 'Kansas' | 7. 'Florence Bruss' |
| 2. 'Spellbinder' | 8. 'Kay Tischler' |
| 3. 'Miss America' | 9. 'Pico' |
| 4. 'Krinkled White' | 10. 'Vanity' |
| 5. 'Dawn Pink' | 11. 'Gay Paree' |
| 6. 'John Gardner' | 12. 'Sea Shell' |

HERE'S HOW TO PROPAGATE TREE PEONIES by A. P. Saunders

Here is another method of propagating — from seeds. This results in a great variety of new plants rather than more of the old. There is great interest, I find, among gardeners for information on growing for themselves tree peony plants not prohibitive in price.

You will find this method successful, I think, if you follow the instructions carefully. I regularly get 40 to 60 per cent germination from fresh seed this way:

Seed is sown in flats when ripe, usually in October in my latitude. I fill the flats, which may be 4 inches deep, with soil, to within 1/2 inch of the top; then, after the seeds are planted, I cover them with 1/4 inch of clear sand. This keeps down the growth of weeds and moss and secures a more uniform degree of moisture. I put about 200 seeds into a flat 12 x 20 inches.

These flats go into a frost-proof cellar for the first winter and may stay there or may be put in a shade corner of the garden the following summer, seeing to it, of course, that they do not dry out. But when October comes they most go back into the frost-proof cellar. There germination will begin in November or December.

As soon as a few young plants show, the flats should be taken to a local greenhouse (unless you are fortunate to have one of your own); here they have light and warmth, and germination goes on rapidly so that by the middle of winter there will be a good stand of young plants. The flats should remain in the greenhouse until about the middle of April or the beginning of May. The foliage is delicate at first and should not be subjected to trying conditions until it has begun to toughen. Hence, the flats when brought out are set in shade in the garden until July, when the young plants may be set in their permanent quarters.

When transplanting the seedlings you are almost certain to find a number of seeds just beginning root growth, getting ready, in fact, for leaf growth the following winter or spring. These seeds should be saved and replanted in the flat and you will get a second germination during the following winter. I usually get about 50 percent germination in the first lot and about 10 to 15 percent in the second.

The little plants will grow steadily but slowly; they won't flower until the sixth or seventh year from seed. If you are in a hurry for blooms, perhaps you had better plant petunias instead!

GERMINATION OF TREE PEONY SEEDS
(From the March 1954 issue of the American Peony Society Bulletin)

The Boyce Thompson method consists of having the seeds in a moist medium, first for two to four months in a "warm" temperature, then for two and half to three months in a "cold" temperature, and finally in a "warm" temperature again, where they may remain until the following winter. Details follow:

1. Warm treatment. This warmth is necessary to start the roots growing.
 - a. Seeds may be sown in flats and kept indoors. A mixture of equal parts peatmoss, sand and soil is a good germination medium. Instead of regular planting, the seeds may be mixed with moist granulated peatmoss.
 - b. Seeds may be sown outdoors if they can be kept moist and warm for the necessary maximum four months' time.
 - c. Temperature should be about 68 degrees F. It may vary from 60 to 75 F degrees (25° C) but should average about 68.

Root production may begin from about two to four months.

As the rootlets grow to be 1-3 cm long, the seedlings may be removed one by one if they have been in peat only. They may now be planted in mixture of equal parts peatmoss, sand and soil. If seeds are in soil mixture they may wait until root production is "complete" and then the entire flat may be transferred. Four months is the maximum time for this treatment.

2. "Cold" treatment. After four months in the warmth, transfer the seeds to a "cold" treatment:
 - a. If indoors, the seeds may be kept in a cold storage room or in any ordinary household refrigerator if the temperature is right.
 - b. The seeds may be outdoors provided the soil is not allowed to freeze, nor to remain too long above 50 degrees.
 - c. Temperature for this treatment should be between 40 and 50 degrees. It may fluctuate between 38 and 60 but should average about 47.
 - d. The seeds should be left here for about two and a half to three months. Nothing is gained by leaving them longer.

3. "Warm" treatment:

- a. Indoors: flats may now be placed in a cool greenhouse or in some daylight room whose temperature can be held fairly well to the required limits.

- b. Outdoors: Spring temperatures outdoors are ideal for this stage after the "cold" treatment of winter.
- c. Temperature for this treatment should be about 65 degrees. It may vary between 59 and 75 degrees but should not remain long at either extreme.

The young shoots should make their appearance in from one to three weeks. Shoot germination should be almost 100 percent of those whose roots are already started.

Of course it is essential that planted seeds be kept always moist, never allowed to dry out, nor to freeze.

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GERMINATION OF TREE PEONY SEEDS

(From Jan. 1955 issue of National Horticultural Magazine)

Store seeds in cool, dry place. When ready to pot seeds soak for a few minutes in one gallon water containing one tablespoon Clorox.

The soil should be very friable and crumbly. In an ordinary clay pot place about one inch of soil, on this a layer of seeds, then layer of soil, etc. until pot is filled. Be sure each seed is covered with soil.

Bury pot so that its top rim is 18 inches below surface of ground in a well-shaded, well drained location. Water if ground is dry. Soak pots in water before burying. Cover pots with soil and fill hole to previous ground level. The refilled area should be mulched.

In about six weeks lift pot, invert and jolt out contents. Every viable seed should show visible signs of germination.

The seeds are now ready to be put out in beds. Prepare a trench as wide as spade used and 2-1/2 inches deep. The ground should be rich and well drained. It should be in half shade, if possible. Plant seeds in trench as close as one inch apart. Fill trench, level ground and cover with two to three inches of sawdust.

In the Spring, before growth starts, sprinkle the surface with a chlordane dust. As soon as plants appear spray bed with one-half strength solution of Bordeaux mixture or same strength solution of Formate. Repeat spraying several times at two week intervals.

The seedlings should be left in this bed for two to three years before transplanting.

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A grower in the Pacific Northwest advises following the method outlined by Harold Wolfe in this National Horticulture Magazine of January 1955 on Page 40, but he adds "use sand instead of soil, rather sharp sand, and I believe you will have good luck if you follow this method exactly."

Mr. Lewis continues:

I germinate seeds in three months with approximately seventy per cent strike. I then discard all seedlings which do not show the embryo as, in most cases, these seeds do not come through anyway. I use only the seedlings which show the young plant. This is very easy to see and saves time in trying to carry over into the second year.

By the embryo I mean the seed which shows the break in the root system. To be more explicit: If you will examine carefully the germinated seed you will find that a majority of them have simply one or two long, straight, shoots or rootlets. Now some of these rootlets will show an enlargement, and this, under a glass, will show it to be an embryo plant.

These seedlings are potted in clay pots, plunged into sawdust beds and shaded for the first year. Ninety-eight per cent of these will grow and break out a nice plant in the early spring.

The second year they are transplanted into the open field and then grown until they bloom. These plants are much easier dug than seedlings which have been allowed to grow from planting, as the roots do not go straight down.

GROWING TREE PEONIES FROM SEED (From an experienced grower in -Virginia)

The seed may be planted outdoors, or in a cold frame, early as the ground can be worked. Loose, friable soil with good humus content is best. A location protected from the hot afternoon sun is desirable, both for the young and the mature plants. Never plant in shallow flats indoors or in the greenhouse.

My own practise is to plant outdoors, about one inch deep. If the soil is inclined to bake, sand or granulated peat moss may be used to cover the seed. A light litter of straw, moss, or even a cloth spread over the area, will help maintain surface moisture until the seedlings appear. The sprouted seed should come up promptly. Unsprouted seed usually take a year to come up.

The first year the young plant will have from one to three leaves. When these fall in autumn the stalk will scarcely show about ground. A light mulch during the first two winters is helpful in preventing damage due to heaving because of alternate freezing and thawing. This should be removed from the top of the plants early in the spring. A good mulch around the plants is helpful at all times. If the seeds are planted as much as a foot apart the plants need not be moved until they begin blooming, beginning in about five years, at which time the colors and type of blossom may be determined. Moving should be done in the fall, preserving as much of the root system as possible, and the plants spaced not less than four feet apart in permanent location. If done carefully, with a large ball of earth, blossoming will not be checked.

The tree peony is a shrub that sometimes reaches a height of five feet. Old stalks die after from ten to twenty years, but are constantly being replaced with new shoots.

The annual growth is very rapid in early spring, and growth is completed, even in the North, by early June. Never cut back living tops, or remove leaves in Summer while they are building up the root system, which is at all times more extensive than the top.

At the end of the season the blossoming shoot dies back to the fourth leaf below the blossom, in the axil of which the blossom bud is formed for the next season's flower. If blossoms are cut, never take more than three leaves with them.

Once established under good conditions the tree peony will endure for a life-time. I know of one plant 45 years olds and another that survives after 96 years.

Tree peonies are very hardy. In the public parks of Rochester, New York, and Milwaukee, Wisconsin, no special protection is required in winter, though a good mulch is helpful in all locations.

PROPAGATE TREE PEONIES FROM SEED — NEW METHOD:

To get germination as soon as possible and thereby having seedlings the first year, one must have fresh seeds. If these seeds are placed in moist vermiculite in a plastic bag and held at room temperature for two or three months (at this time it is evident that rooting is taking place) and then placed in the refrigerator for two or three months (at this time there is evidence of the epicotyl forming) plant in flats or if Spring has arrived, plant outdoors. If planted in flats, light must be provided 16 hours a day and flats held at room temperature as soon as there is evidence of growth above ground. Timing can present a problem so an easier and slower way can be used as follows:

1. Plant seeds in a cold frame in early spring (June is O.K.). Keep moist always!
2. Rooting takes place in the fall.
3. Prevent them from freezing the following winter and the second winter too.
4. Seedlings may be transplanted in late July or early August of the third year.

P.S. Just received a dandy box of T.P. (suffruticosa) seeds from Mr. Toichi Domoto!