PAEONIA

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Kalamazoo, MI.

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CUTTINGS

(from The Peonies, ed. John Wister, pp. 181-183)

GARDENERS of the last century, while lacking much of our present-day scientific knowledge, had many skills that are rare today. They excelled in the art of propagation as can be seen from an account in the French magazine Revue Horticole (29) over a hundred years ago.

This described the making of cuttings of shrubs with large pith and tender wood of which the Bignonia and tree peony were mentioned as typical.

About mid-June, buds of the current year's growth (such as are commonly used in peach budding and rose budding) of tree peonies were cut off. The cuts were shallow, only about half the depth of the stem. The leaf stalk was left on and the leaf cut about in half. The buds were sowed almost like seeds in a mixture of peat and sand in trays, covered about half an inch or an inch. The trays were usually round for convenience in covering with the bell-jars ("cloche") so universally used in France. (We would use flats in a greenhouse, frame sweat-box, or plastic tent.)

The trays were watered regularly, placed in half shade and kept covered with the bell-jars until the end of September. In this process, no top growth is made by the bud, but half a dozen or a dozen roots, from one to two inches in length, are formed which will enable top growth to start early the next spring.

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6-10-87

324 Wai-iti Rd.
Timaru, Canterbury
New Zealand

Dear Mr. Laning,

I am writing to thank you very much indeed for the generous packet of Suffruticosa T. P. seeds which arrived in our mail-box about a month ago. Such a wonderful surprise and all being T.P. seeds was a thrill. It did not take any encouragement to get myself organized and commence the gathering of suitable pots, soil mix, etc. I did not plant them deeply, only on the surface of damp mix, and a layer of fine gravel on top. I think with a rough count there were in the vicinity of 220 seeds and those were divided between 29 containers. No doubt you will wonder at that — but we are in a flat, and although there is ample area for my gardening efforts not much spare earth. But one advantage with containers, I do have control of their moisture needs. Also I can cover them if a rainstorm is approaching — as they seem to rot in wet soil.

And now I only have to be patient, and wait for perhaps 2 1/2 - 3 months. I intend to leave, them in the pots for 18 months - 2 yrs. before shifting any. I have found that they do not take too kindly to being uplifted with only the root-shoot.

Gardeners in N.Z. who may have T.P.'s in their gardens don't seem to think of trying to propagate them ever, which is a great wonder as they are becoming a much talked about shrub here and you just can't buy any. But now there are some people importing mainly from the U.S.A. it seems, but whether they intend to propagate and sell plants later on, time will tell. With the fast delivery by air-freight, plants arrive here in very good order. Last year our daughter-in-law ordered plants of T.P.'s from Long Island, New York, and they took only 5 days to arrive. Those plants are out of quarantine only recently and have made good growth. She let 2 plants flower and they were gorgeous — those were 15 Japanese T.P.'s. This year our son and daughter-in-law sent to Klehm's Nursery, Barrington, Illinois, for an order of Lutea hybrids and others which have just arrived and gone into quarantine. Altogether with the seedlings which I hope to grow, plus some 4 yr. old plants which I have grown from seed probably fertilized by bees, but still could be interesting, they should have a very good collection. They are both in their mid-forties and intend to perhaps have a T.P. nursery in a small way in years to come when they retire. They have 2 sons and a daughter (our grandchildren) all in their early 20's. I only wish that I had started on Peonies 30 yrs. ago perhaps but even if I can help them in their collection it's a great interest. They both belong to your A.P.S. and receive the quarterly Bulletin which I also enjoy reading and it's very informative, and the Peony Handbook is splendid, full of advice with practical experience from all you enthusiastic growers.

We in N.Z. (away down under) are in the last month of Spring (October) with extremes of weather, snow up to 20 cm - 30 cm. on the alps a few weeks ago, but back to warm days again, 16°C - 18°C. This follows a very mild winter of very few frosts. With our summer approaching it is of great assistance in the shortening of the period of sprouting of seeds from U.S.A. They miss the following cold winter of which they normally should have in the States.

I have been experimenting this last year or two by layering 8-10 yr. old T.P.'s. The whole plant - except the ends of branches with leaves on. Firstly by making vertical slits an inch below dormant buds with a razor blade (only through the cambium layer) laying the peony in a shallow trench - one end 6" deeper than top end - sprinkling crushed pumice and peat on top of roots, trunk and branches and forming a slight mound on top. This took 16 months to show roots and at 18 months I was able to cut the 7 rooted sections off leaving the parent root and stump to recover. It now has 5 strong young pink growths. I do think that I was too impatient and should have left the young roots to mature longer — but it appears that this time I may have been lucky — they are all doing very well. But I have to sacrifice the flowers for perhaps 2-3 years.

I did try grafting last year, but no success. It was too difficult just for amateurs, and the wood of T.P.'s is so very hard.

I only have 5 mature T.P.'s which are about 9 yrs. old - 'Age of Gold', 'Renkaku', 'Godaishu', Yalsata-jishi and 'Sakura jishi'. I find that any T.P. is beautiful in leaf and especially in flower.

Now I have appeared to go a little on non-stop over peonies, but they are special. Please excuse writing as my sight is not as good as it used to be.

Thanking you again for those lovely seeds and Good Wishes for future years in peony growing.

- Marion McFarlane

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NOTE FROM HOWARD BURNETTE: 6-5-87

Dear Chris —

Here is that wayward contribution to PAEONIA. I seem to be seeing California from the inside of hospitals. April 16, I had a second open heart surgery at Stanford University — released on the 30th — returned for a week May 18th for leg surgery — complete healing is taking place!

I see Toichi Domoto every week. A more dear friend couldn’t be. The tree peony season here was rather short. Am surprised at the number of herbaceous peonies growing in mild Castro Valley.

Filoli Gardens in Hillsborough, CA. is a huge estate left to the Federal Government. Toichi has offered them several hundred tree peonies for a specimen planting but they haven't responded very favorably. If they were to see the Hamilton, Ontario, or Gratwick plantings, I'm sure they would respond.

I am trying to reach someone who can accept this general offer.

Toichi mentioned that the Itoh hybrid (Imperial?) bloomed very favorably this year.

SUGGESTIONS ON GRAFTING

Don Hollingsworth

My first attempts at grafting were successful followed by results that varied all over the spectrum. Meanwhile, I stewed and studied over what the key variables might be — from getting the genetically correct root variety to just what the reason one method or another of fitting the two pieces might contribute. I dipped the pieces in Clorox/water 1:9, I scrubbed roots, I worried about the moisture level and the temperature during the knitting period, used plastic bags and expanded mica or other media and kept the new grafts near the furnace, etc., etc., etc....

Here is what I now think makes any difference. THE FIT: fresh cut surfaces on the two parts, fashioned for all-over contact and bound to hold them snuggly together for the knitting period and to prevent mechanical damage in later handling. How the cuts are shaped may be meaningless so long as the contact and binding are maintained. SANITATION: Of course, within reason. The best way is to have the fungus controlled during growing season on the source plants — both ends. CARE DURING KNITTING: The plastic bag method allows control of environment at any season. The material should be warm during the callusing period. How warm? +70°F for a month or so. Aeration/oxygenation is absolutely essential. Polyethelene breathes (gas exchange) while retaining moisture. However, you need to keep track of what is going on in the bags. Our colleague in Tasmania wrote once that he merely opened the bags periodically and gave them a good shaking to get some air change. A lot of rot from deteriorating material will use up the oxygen. In turn more material may die, due to shortage of oxygen. (Outdoors in late summer, in the ground, as done commercially, is good, but you can't take them up and look at what's going on, you see!)

The most important variable, I am becoming more and more convinced, is to have vigorously growing material for scion and root. Scions from unthrifty stems that you wanted to prune out anyway may be worthless. Unless the material grew with benefit of good light and fertility, it's not a good prospect for success. The graft union requires growth from both parts, which means a sufficient supply of stored food in the scion is necessary, as it is in the root. The root needs to be well supplied with stored food (starch). In Lacti roots this shows as creamy white richness, as opposed to discolored, grayish, translucent or other uncertain appearance. The indicator is not so certain in the hybrids, as some of them carry a certain amount of pinkish, yellowish or other color, even when healthy and vigorous.

The other important consideration when carrying the grafts indoors (which you must do if you wait until now, as I have, to make the grafts), is that the buds must be exposed to a long period of cold (+40°F) in order to reduce dormancy. A refrigerator is useful for this but they don't usually control at 40°, more like 36°, and this may take longer to accomplish the necessary result. A good way to go is to get the surviving grafts out into a cold frame or protected containers as soon as winter temperatures will allow — maybe February. Then the remaining cold may be supplied outdoors, by the season.

ITOH Hybrids graft just fine. My early experience was with Nos. 205 and 206. At one time I thought 205 was working better on the 206 root, but that may have been because I had more 206 root to use, having elected to divide it earlier, simply being cautious with 205, once having seen the flower.

Some of the Macro Hybrids and the Lavenders represent interesting avenues toward purple color. However, I do not feel we have exhausted the possibilities of splitting out color components of Lacti toward a more purple color. Also, coming from tree peonies through Lutea Hybrids and then Itoh hybrids remains as much a possibility as it ever was. Just have to overcome the reluctance of Itohs to breed. I am of the impression Roger Anderson already has some promising results in this area. We already have Lutea Hybrids from purple Suffruticosas — from "Choni", for example.

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T. L. Singh
2100 Old Grove St.
Berkeley, GA. 94704

9-4-87

American Peony Society
250 Interlachen Rd.
Hopkins, MN 55343

Dear Sir or Ms.

Dr. Constance of the Botany Dept. at U.C. Berkeley gave me your address and suggested I contact you. I am trying to discover which species of Paeonia produces shiny red seeds, in an effort to discover exactly which species I am seeking. All that I have to go on is a few obscure passages in the books of John Gerard and Parkinson, in which is stated "and Aglaophotis from the shining redness of the graines or seeds, from whence so many fabulous and detestable illusions of Aelianus his Aglaophotis, and Iosephus his Baciaras are referred and reported of Peony." Gerard reported that according to Aelianus, this species was also known by the elderitch names of Cymospastus or Baarus.

If you could let me know the Latin names of those species having red seeds, it would be a big help in my obtaining this elusive plant. Enclosed is a S.A.S.E. for your reply. Thanks.

Sincerely,

T. L. Singh

The above letter was sent to Chris Laning by Greta Kessenich and it was then forwarded to Don Hollingsworth who sent the following report to T. L. Singh.

Donald Hollingsworth
5831 N. Colrain Ave.
Kansas City, Missouri 64151
November 18, 1987

T. L. Singh
2100 Old Grove Street
Berkeley, CA 94704

Dear Mr. Singh:

Your inquiry concerning species of Paeonia which may produce red seeds has been forwarded to me. A cursory review of my files turns up the only reference which connects in my memory. It is in an article by A. P. Saunders, PhD. (1869-1953) formerly Dean at Hamilton College of Clinton, New York, and the most noted hybridist of Paeonia. Dr. Saunders was also a collaborator in studies and publications on the species relationships of Paeonia with Dr. G. Ledyard Stebbins, later a noted biosystematist at UC-Berkeley.

The article is entitled "Some Asiatic Peonies" and first appeared in The Flora and Silva, published in London, the first part appearing in Vol. Ill, No. 4, July 1931. I have a photocopy from the Bulletin of the American Peony Society, No. 186, September 1967. Either or both of these references may be obtainable from the collections of the University of California.

Saunders states, in part, "Paeonia macrophylla. ... seed pods when open, display blue-black fertile seeds along with many large, brilliant, rose-red, sterile ovules. It is hard to see what purpose these sterile ovules can have served in the evolutionary process," he continues, "but they are common to quite a number of Peony species,.."

Further along, after discussing Paeonia Mlokosewitschii and P. triternata and during his discussion of P. Wittmanniana, Saunders writes, "This species, like the others, shows the same idiosyncrasy of producing red sterile ovules mixed with the fertile seeds. This character is, I presume, very marked in coralline (the species), from its name; but that species will not be dealt with here, as I have still to see it in bloom."

I have personally observed the red sterile ovules in pods of some of the hybrid peonies which I grow. However, I have not recorded data as to which ones, as would be necessary to compare them for ancestry of the five species mentioned in the referenced article.

Other than the infertile ovules, the only red I have observed in peony seeds is a transient color seen in not-yet-mature seeds encountered upon too soon breaking open the pods for seed collection. Most of my peonies more commonly show a cream colored seed at a similar stage of immaturity. However, it should be noted that my observations encompass few species and only the hybrid descendants of not more than 15 species of Paeonia.

Another factor to be considered is the possibility that we are looking at the matter in a different context of thought than did Parkinson or Gerard. Presumably the red color shown by seeds at a near-ripe stage has been present during much of their growth and may have been noted so (and the red colored seeds used in herbal medicine) at a point in the evolution of plant knowledge at which the distinctions we now make between fertile and infertile or mature and immature were not in use.

- Don Hollingsworth

PROPAGATION OF THE TREE PEONY SEEDLINGS

Chris Laning

Increasing the P. suffruticosa population by raising seedlings is the least expensive way of propagation and, for me, the most satisfying method. Not enough of them have been raised to really evaluate their potential. After investing five years or more in a T. P. seedling, you will know that it is absolutely beautiful even though some mean guy may tell you differently! But when you get back down to earth you will realize that about 3% of a batch are worth propagating. A real challenge arises when the naming and introducing a certain seedling presents itself since the form, color, and texture of the flower changes as it matures (or ages). Rogueing - or - eliminating the mediocre T.P. seedlings is something I don't do! Even the poor ones are prettier than a rose.

GRAFTING: Increasing the population of named varieties of suffruticosa and lutea hybrid T. P.'s is commonly done by grafting but this is not an easy method to learn. Developing the grafting skill is a matter of following the prescribed procedure and then practice, practice, practice! Many articles have been written on this subject, still "you learn by doing" is the way to go.

Reading material on this subject may be found in:

The Peonies - John C. Wister, pages 183-190

The Best of 75 Years, American Peony Society, edited by Greta Kessenich, pages 61 and 62.

Also, many gardening books give detailed instructions and some in picture form.

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The following information is from the A.P.S. Bulletin #224, December, 1977 —

TREE PEONY PROPAGATION BY ROOTED CUTTINGS

C. Graham Jones, Churchdown, Gloucester, England

The accepted method of propagation of the tree peony family is by grafting, but during September I was shown a different method which appears to have positive possibilities. This method is rooting cuttings.

The experiment was started as the results of an article, in the May 28th, 1977 issue of "Popular Gardening". It was written by Christopher Lloyd who obtained a success rate of 7 out of 9 or 78% by using this method. This is considerable improvement over the 40 to 50% grafting rate. I examined the experimental results after four months. The rooting was very impressive. Two cuttings were in 4" clay pots which were filled with roots. This was photographed.

I will try to explain the procedure as outlined in the article by Mr. Lloyd.

The principle is to obtain current season's growth immediately after flowering. In the British Isles the correct time is the end of May. The shoots (cuttings) selected are taken with a small amount of old wood at the base, then trimmed where the new and old wood meet, the top being trimmed just above a leaf to give a length of cutting between 5 and 6 inches.

The lower leaves are removed with a sharp knife and the top leaves are removed by half to reduce length. This is not to reduce transpiration as with other cuttings but to save space. The terminal leaf is removed.

Blind cuttings have been used and are suitable. I presume this means blind at the terminal bud. The prepared cuttings are dipped in water to save drying out and laid on the bench while the compost and pots are prepared.

The compost is made from the following: One part loam, 2 parts peat and 3 parts horticultural sand, but any sharp well-drained compost will do.

4" clay pots are used and filled to 1/2" from the top when lightly firmed. A dibber is required to make the holes. Each cutting is dipped in a rooting compound such as Seradex B2 or Murphy's medium to hardwood, which are used here. Place two cuttings in a pot at 180°, the depth of the cutting being important so the reduced length of leaves do not touch the compost, this to avoid botrytis. When inserted, water in and place in a closed cold frame, the type used in a cold greenhouse. This part to me is variable, with the different climates experienced by members. Trial and error will give the optimum.

When rooting has taken place, this can be found by the roots emerging through the draining holes or by inverting the pot and knocking out the mass. The cuttings can be hardened off in late summer. Cuttings examined after rooting show that the tree peony is not only a node rooter but produces roots between the nodes. It is an internode rooter as well, which is an asset.

It is recommended that the potting of rooted cuttings be delayed until spring as it is considered much better to move a cutting which is becoming active rather than going dormant.

Botrytis could be the problem in this procedure. It is presumed the same problems could exist with the rose propagators where the time cycle between cuttings and budding is extended by the use of rooting cuttings.

I will start this experiment in May 1978, using node and internode cuttings to find out if it offers an improvement to the success percentage without increasing the time factor.

SOMETHING NEW — PINK TENUIFOLIA

Nancy Halas

By some fortune I was able to obtain an authentic Pink Tenuifolia. What I have is still small and may not bloom this year 1988. However I will report anything new or different in what I am able to observe in the coming year.

It is difficult to speculate on what the precise differences between the red single and red double Tenuifolia and the Pink Tenuifolia is. At this time I am unable to ascertain as to whether it is a single or double pink. I think that it is a single pink.

I have long suspected that there are two chromosome counts in the Tenuifolia species both diploid and tetraploid. However there has never been much breeding performed with Tenuifolia other than to clone existing plants. The red Tenuifolia was always a superb color and there was never any incentive to come to a lighter shade. However because it is there existing, it offers some curiosity as to what the possibilities are if any at all.

I would suppose the colors could get to the stage that I experienced at a Conference I attended one time. The fine gentleman to my right exclaimed a unique color referencing the plant to which we were looking at, I asked him what he meant and he pulled out and opened a color chart listing all the shades of pink, red and purple as published by a Horticultural Society, and pointed with some triumph to one shade he named. I felt somewhat defeated by his degree of precision in colors.

However now there is a new shade in Tenuifolia and the species may not be quite the same anymore, I hope. Once the pinks are crossed with the reds, there will be or should be, many intermediate shades of red, pink and purple and one day you may actually need a color-patch-fold-out to correctly distinguish between the different shades of colors in Tenuifolia.

..... continued from page 1

CUTTINGS

The leaf stalk and leaf should remain green during the summer and fall off at the natural ripening time. If the leaf stalk should turn black prematurely, it is a sign that the bud has died.

French nurserymen asserted that these buds formed plants straighter than those made from stem cuttings, indicating that stem cuttings were also being rooted successfully. They said that in the tree peony side buds, which would otherwise be lost or make only small growth, could be utilized without checking the growth of the plant. Apparently this method has not been used in this country, or at least not in recent years.

During the past twenty years, various stories have cropped up from time to time that certain persons were growing some of the hybrid tree peonies from cuttings. Investigation never seemed to locate any actual plants that had been propagated by this method.

Apparently the late Edward J. Gardner of Horicon, Wisconsin, was the only person successful in rooting cuttings of the Moutan varieties. In the 1940's, he used softwood cuttings under a continuous mist spray, but he operated on a comparatively small scale only. He expected to undertake mass production, but his illness and untimely death prevented his doing this.

A number of nurserymen have had recent success in the mass production rooting of subjects hitherto not thought practical or even possible. By various types of frames, with and without bottom heat, and greenhouses with controlled humidity through continuous mist spray or fog machines, they have produced from cuttings enormous numbers of plants like Soulange magnolias, pink dogwoods, Japanese maples, and various rhododendron species and hybrids, that were formerly grafted.

Professional magazines like The American Nurserymen have, in the last four or five years, run series of articles on this subject describing in great detail the various new techniques and procedures. This has quite naturally stimulated tree peony growers to try the new methods, and in a few years perhaps we shall learn of their successes or failure. There have been small-scale successes in rooting cuttings under polyethylene tents. No reports are available at this time.