

American Peony Society Bulletin

DECEMBER, 1974

No. 212 DEC



PERIODICALS SECTION
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PRAIRIE MOON • (Fay, 1959)

**(Early-Single) Hybrid, large pale yellow blossoms
carried on strong, upright stem - vibrant foliage.**



MRS. F. D. ROOSEVELT

(Franklin, 1932)

(Mid-Double)

Highly refined sea shell pink with classic flower form and delicate garden effect.

AGE OF GOLD

(Saunders)

(Very Double)

Camelia-like ruffled, cream-like blossom. Each petal has a small red flare at base.





OLD-WORLD PEONY HABITAT

map showing localities in which the most important
peonies are native

- P. Albiflora: Central China and Siberia (there is not exact information as to just how far north P. albiflora grows)
- P. Emodi: Rinalayan Mt. India
- P. Lutea: Yunnan Mt. Southern China. (note: the only peony native to America is P. Brownlii) (found in California and the Northwest)
- P. Moutan: Central Part of W. China
- P. officinalis: Europe, S. 48th Parallel
- P. Tenuifolia: Terek Region, Caucasus
- P. Wittmaniana-Tschorak River Region, Caucasus

Map — Old World Peony Habitat, Mrs. Edward Harding's Tabulation of Principal Species Of Peonies, submitted for this issue of the Bulletin by R. W. Tischler, Brands Peony Farms, Faribault, Minn.

INSIDE COVER — Tree peonies — Age of Gold and Taiyo

AMERICAN PEONY SOCIETY

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Vice President Gary P. Seaman Bulletin Editor Greta M. Kessenich

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DEPT. OF REGISTRATION

The department was formed to properly supervise the nomenclature of the different varieties and kinds of peonies. All new varieties should be registered to avoid duplication of names.
Greta M. Kessenich, Secretary

OBJECTIVES

The Articles of Incorporation state: Section (2) That the particular objects for which the corporation is to be formed are as follows: To increase the general interest in the cultivation and use of the Peony; to improve the methods of its cultivation and methods of placing it upon the market; to increase its use as a decorative flower; to bring about a more thorough understanding between those interested in its culture; to properly supervise the nomenclature of the different varieties and kinds of peonies; to stimulate the growing and introduction of improved seedlings and crosses of such flower; and to promote any kind of the general objects herein specified by holding or causing to be held exhibitions, and awarding or causing or procuring to be awarded, prizes therefor or in any other manner.

The AMERICAN PEONY SOCIETY BULLETIN is the official Society publication. It is mailed postpaid quarterly to all members in good standing.

MEMBERSHIP

The By-Laws state: All reputable persons, professional or amateur, who are interested in the Peony, its propagation, culture, sale and development are eligible for membership. Dues are as follows:

Single Annual	\$ 7.50	Junior of member family	2.50
Single Triennial	20.00	Junior non-member family	3.50
Family Annual	10.00	Life	150.00
Family Triennial	27.50	Commercial membership	25.00

Family membership, any two related members in same household — One Bulletin.

Junior membership, any age through completion of High School — Separate Bulletin.

For those who wish to further support the Society, the following special memberships are available.

Contributing	\$ 25.00	Supporting	\$100.00
Sustaining	50.00	Patron	250.00



AMERICAN Peony Society Bulletin



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FROM YOUR PRESIDENT

Greetings and best wishes as the year ends. We hope all our members will have a good peony year in 1975.

As winter closes in, some peony enthusiasts stop for a rest after the fall planting. Others just change directions a little and start looking for roots in the bags of seeds. This is a great weekly past time in our house. When the roots are seen the seed is planted in a plastic cup of vermiculite and put in the refrigerator. If many seeds are planted this can be quite an activity taking up four or five nights a week in January. There are other ways of enjoying the peony.

While driving to the Mansfield Show in 1972, Violet and I discussed the selection of a painting for the bedroom. We decided to look for one about three feet by two feet, which featured peonies. On the trip back we stopped in stores which sold paintings along the way and finally found a beautiful golden yellow painting of peonies by Anastacie. Since then I have found peony paintings such as "Peonies in a vase," by Renoir, and others by Belvedere and Bove. It is a great way to browse in the art stores looking through catalogues. These paintings fortunately are available in reproductions so they can be bought at modest cost.

There must be peonies painted on china. I have seen some Chinese vases decorated with peonies, but none within my price range. There must be some stamps or coins featuring peonies. There is a large field to explore during the quiet season.

Peony book collecting is another way to enjoy the winter. There are many book stores that catalogue out-of-print books. A good one to collect and one not easy to find is Stern's "A Study of the Genus Paeonia," published by the Royal Horticultural Society in 1946. Best searched for in England where it sells for about £60.00 or \$130. This should be a good investment and is a beautiful book containing several colour drawings by Lillian Snelling.

Another interesting way to let the peony enrich your life is to write to another member or two. Use the members list published in September 1972, or if you don't have this, write to Greta or myself (we love to get letters) or anyone whose name and address is in the bulletins. If you are going on a vacation, drop a line to a mem-

ber when stopping overnight and pay them a visit. This will make your trip more memorable.

These suggestions I hope will keep all our members enthusiastic about peonies all winter. One other way to be happy next year is to give yourself for Christmas a ticket to the Peony Show in Mansfield on June 21st and 22nd, 1975. You will really have an interesting time there and see peonies you didn't know existed.

The President, Executive and Board of Directors of the Society will be trying to make 1975 a memorable year for the Society. We ask all the members to help by enrolling peony-growing friends and being as active as your time permits in the Society.

John Simkins

MRS. EDWARD HARDING'S TABULATION OF PRINCIPAL SPECIES OF PEONIES

I. Herbaceous Peonies

These are bushy plants two to four and one-half feet high that die down to the ground in the autumn.

1. P. Officinalis (of the apothecaries' offices or shops—used for Med. purposes.)

This species is a native of southern Europe and is the peony of mythology and of Greek and Latin literature. It is grown to some extent in some gardens now. This species gave the genus its name.

2. P. Albiflora (white flowered)—improved type—with red, pink, white, mauve, or yellowish flowers of several forms, single, semi-double, crown, bomb, rose, etc., and many of them fragrant. This is the most important and interesting species of the herbaceous group and it is the principal one grown today. It is sometimes called P. Sinensis or Chinese peony. P. Albiflora is a native of the central regions of Siberia to central China. Its early history is entirely in China and Japan; it was not known in Europe prior to 1656.

The improved type was obtained:

- (a) By importation into Europe from Siberia or China about 1850.
- (b) By crossing P. Albiflora with other imported primitive types or the imported improved type and certain little-known species such as e.g. P. Peregrina (foreign), P. Arietina (ram's horn fruited), etc.
- (c) By crossing P. Albiflora (either the imported primitive type or the imported improved type) and P. Officinalis. This crossing was done chiefly since 1850, is probably the origin of most of the beautiful double

kinds of today with their varied forms and exquisite colorings.

3. *P. Tenifolia* (narrow-leaved) introduced into England in about 1765 from Caucasus.
4. *P. Wittmaniana* (Wittman's)—a pale yellow peony. Discovered in the Caucasus about 1842. One of the parents of the desirable *Wittmaniana* hybrids.
5. *P. Emodi* (Mt. Emodus), the only peony native to India.
6. *P. Anomala* (Unusual) *P. Corallina* (coral red—referring to the seeds), *P. Decora* (comely), *P. Peregrina* (foreign), *P. Brownii* (Brown's)—the only peony native to America—and others, are less important species from a gardening standpoint.

II. Tree Peonies

These have woody stems that do not die down to the ground in the autumn. Cultivated in China for many centuries.

1. *P. Suffruticosa* (woody) or *P. Moutan*.

Characteristics are: Large flower of 8 to 10 inches across of various shades of red, white, pink, salmon, and purple. A native of central part of western China, it was first exported to Japan in 724; and first exported to England, France, and the United States in 1787.

2. *P. Lutea* (yellow)—discovered in southern China in 1882.

REPLANTING WHERE OLD PEONIES HAVE BEEN GROWING

Peonies are known to grow well in the same place for many years, 50, 60 or more, in some cases. While the plant remains undisturbed, in the same spot, the feeder roots are constantly reaching out into new soil for food. They do not receive all their food from the same space originally allotted to them, for in old clumps the center roots grow large and crowded and are continually sending out feeder roots at all terminals.

When you dig up this huge hunk of roots and replant in the same hole, the plant has been allotted the same area as the first one. All the nourishment has been taken up by the old plant. However, if the new soil is filled in that is rich in plant food, the new plant will do just as well.

From a commercial standpoint this would not be practical, but for individual gardens, this practice is recommended.

On the farms, corn stalks, wheat stubble, manure etc., are plowed back into the ground.

When you fill a large hole with entirely new soil, with good rich compost, you are practicing not the rotation of crops but the rotation of soil.

WINTER CAN BE RUTHLESS IN THE ALTERNATE FREEZING AND THAWING OF THE PEONY

Damage to peonies by alternate freezing and thawing some years is considerable. That is why a slight covering of marsh hay or other mulch should be used to prevent this trouble. If there was but one freeze-up and one thaw, the ill effects would be negligible, but the damage is due to the cumulative effects of a number of alternating freezes and thaws. Even with good drainage, there is always moisture in the ground and when freezing comes, there is an expansion of the soil due to the expansion of the water as it freezes. The freezing begins at the surface and works downward. The only chance for expansion is upward. The top of the root in the grip of the frost is forced upward. The lower part of the root in the unfrozen soil below follows along until finally the frost progresses deep enough to encase the whole root.

When a thaw comes, the process is reversed. The thaw starts at the surface and works downward and as the ground thaws it settles. As the roots are firmly anchored in the soil below, the crown does not settle with the earth. Obviously, it cannot. When the frost is all out of the ground, the entire root is at higher elevation with relation to the surface of the ground than before the freeze came. Given a sufficient number of cycles of alternate freezing and thawing and the root is eventually above ground.

Now supposing the entire root is gripped in the frost and the thaw only extends a few inches below the crown, it stands to reason that no matter how good the underdrainage the top soil will now be waterlogged and the greater the water content, the greater expansion of the soil as it freezes. As before, the earth will settle and the crown of the plant will not, or cannot; then when the next freeze comes, the unfrozen top soil will again freeze and expand upward, gripping the crown, forcing it up and tearing it away from the roots firmly anchored in the frozen soil below. This means destruction to the peony, unless pieces of crown attached to the remaining roots have the ability to start life anew. In windswept locations, erection of barriers to catch and retain the snow would be beneficial. This would not be necessary if mulching had been done after the first heavy freeze.

AMERICAN PEONY SOCIETY COLORED SLIDES

Several colored slides of herbaceous hybrids have been contributed to the collection of the American Peony Society. Thanks to Mr. Roy Pehrson for sending Flame, Halcyon, Laura Magnuson and Sunbright.

A set of 80 35mm color slides may be rented for a two week period for \$7.50, check payable to the American Peony Society. Richard W. Edblom, Chairman, Colored Slides, 6917 45th Ave. No., Minneapolis, Minn.

MR. PEONY



Marvin Karrels

When I was **very** young, I used to explain to my friends that my Dad not only 'dug' peonies but, also, was one of the top ten bowlers in Wisconsin, golfed in the 70's and then to add an extra "punch" I'd point out that he played amateur football. Come to think of it—I was probably a female chauvinist type! It took awhile for his sports-minded only child to adjust to his, then, new found interest—The Peony. A thing of beauty, now. I not only described a 200 yard drive straight down the fairway, but also Red Charm in all its glow and glory. His 50-yard line seats in spring consisted of a bench in the garage in front of which several milk bottles were set up. A peony was centered in each bottle to be admired and discussed with friends. As I reminisce, it occurs to me that my parents' peony friends are some of the most colorful, erudite, kind people I've ever met.

Warm memories flood back of the many shared good times with peony people. I remember Hertha and Doctor Hyde driving to Milwaukee from their home in Chicago in the middle of the night to put on a local Department Store Show for my father when he was taken to the hospital with a kidney stone attack. They took a station wagon loaded with his best flowers and set them up at the store for Dad. Roy Gayle owned a cemetery in the Chicago area which was generously laced with his peonies. He and my father would put on "shows" in our basement just for the two of them...they even chose a court of honor. They would talk most of the night about the flowers "milk bottled" in front of them. Both of them loved good peonies. Every time I look out into my own garden (oh yes, I've grown up and enjoy the peony, too) and see the beautiful pink double

called Norma Volz, I remember Norma and Al Volz spending relaxed summer evenings with us, discussing the best way to develop a new variety and what peony "cross" might develop all the qualities a good peony ought to have. When this particular pink seedling came to bloom in the Volz's garden, Dad kept encouraging them to propagate it, name it and show it. How happy to be remembered with a lovely flower named in your honor, as was Norma. Gardening has not been a solitary hobby for Dad, with hours spent only in the fields, but it has been a rich experience shared with friends past and present.

Dad became interested in the peony in the late 30's and as with all things he does, he put his whole heart in knowing and growing the best flowers. He is in the habit of saying, the real test of an exhibitor is winning the Gold Medal for the class of 25. (It used to be the class of 50.) He always points toward entering this class and has won it 14 times. At one point in his peony life he had about 8000 plants from which to choose blooms.

Years ago whenever the peony show was held in Minneapolis one chair was always set aside with the name Mr. Peony on it. This was reserved for Mr. Peyton, an avid peony enthusiast from Virginia, who was also a past secretary of the Peony Society. I've often thought since Mr. Peyton's death that there were several people who could have inherited that chair, not the least of which is my father, Marvin Karrels.

WRITTEN BY AN ADMIRING AND LOVING DAUGHTER
ELAINE K. RISCH

Marvin Karrels was president of the American Peony Society from 1947-1949. A member of the Board of Directors through the following consecutive years and continuing. He is a life member of the Society, a member of the seedling committee, and one of the most knowledgeable and outstanding authorities on the herbaceous peony. He is highly respected for his knowledge in the evaluation of the peony.

Mr. Karrels is and has always been an advocate of peony exhibitions. He is one of the pro's in peony exhibiting, having entered peonies in 27 National Exhibitions in various areas of the United States and Canada.

He is a strict advocate of being in adherence with the By Laws of the association so that the high standards of the Society always be maintained.



1500 peonies growing in the fertile farm land of Nebraska.

*Submitted by Lela Pfingston
Geneva, Nebraska*

Over 40 years ago, a small planting of peonies were growing in the cemetery at Clay Center, Nebraska.

At that time, before a cemetery board, Mr. Ralph Fry, a businessman was in charge of the cemetery. With the assistance of the caretaker, Mr. Chris. Wenske, all the peonies were moved to an adjoining acreage.

The soil being black loam and accessible to water, the peonies flourished. They have been divided many times. No one remembers the names, only the beauty of the peonies speak for themselves, with huge flowers of red, white and pink.

The acreage is cared for by the present caretaker of the cemetery, using a roto tiller and mowing off the tops in the fall. In the earlier years the tops were cut off with a scythe and the rows were hoed and weeded by hand.

Many of the people depend on the bloom for memorial day, especially those coming from a distance. Many mail orders are received. For many years the blooms sold for \$1.00 a dozen, but in later years the price has increased.

All the money from the sale of the flowers goes into the general fund which is used for the upkeep of the cemetery.

THE ANEMONE PEONY

By *W. G. Sindt, Afton, Minnesota*

The anemone peony is without a doubt the least understood of the five types of herbaceous peonies. Most people with only a modest knowledge of peonies can identify the single, Japanese, semi-double, and double types, but are not sure about anemone. The description of the anemone type is essentially word for word in the "Handbook of the Peony" 1953, Wister "The Peonies" 1962 and Boyd "Peonies" 1928. Since all three are practically identical, I shall quote from the most recent one, "The Peonies," by Wister.

"Japanese: five or more petals and a center of stamens bearing abortive anthers, nearly or completely devoid of pollen, which appear in many different forms and are commonly called staminodes. These surround the carpels and disc. The term 'anemone flowered' is sometimes used when the center of the stamens is more fully transformed into small narrow petals called petaloides. The carpels are usually normal. Few catalogs list this type, classifying them either as Japanese or double. The transformed stamens are usually yellow, although they may be of other colors, often quite different from the guard petals. The so-called yellow or near yellow varieties belong to this type. The yellow color of the staminodes or petaloides is due to the color of the stamens and always fades with age to white, and the guard petals are white or light pink."

While the characteristics of the anemone type flower are consistent in some varieties, they may also appear on young plants or the side blooms of double varieties. Shows do not usually have a class for the anemone type peonies. They are shown in the type they most nearly represent, either the Japanese or double. The "yellow" doubles which may appear to be of the bomb form are anemone. *Primevere* (Lemoine 1907) is an example of this. Probably one of the best known anemone peonies is the pink, *Gay Paree*. This is quite widely grown and appears in many shows. It has been best Japanese at several large shows because it so closely resembles this type that most people think of it only as a Japanese.

The anemone peony is well suited to landscape purposes. It stands up well and with a fuller flower than singles or japs satisfies many people who think of peonies only as being double flowers. Since the bloom is smaller than the full doubles, it does not go down as easily in the rain, which always seems to come during peony season.

Varieties especially recommended as garden plants are *Ruth Clay*, *Winnefred Domme*, both red, and *Butter Bowl*, a medium to tall white. Other varieties recommended are: *Duchess de Nemour*, *Golden Dawn*, *Laura Dessert*, *Primevere*, *Red Bird*, *Gay Paree*, *Vesper* and *Aurealin*. The preceding varieties are all recommended by the American Peony Society. *Cheddar Cheese*, a very recent introduction, is also an excellent variety.

For something a little bit different in herbaceous peonies, why not try the anemone type? You may like them.

CONCERNING THE SAUNDERS HYBRID PEONY

"RED LACQUER"

Silvia Saunders

Since "Red Lacquer" is referred to as one of our lobata-hybrid F-2's, I think a few words of explanation are in order:

This plant, to begin with, is now non-existent.

It did once exist, under number only, in a bed of seedlings, some of which were supposed to be F-2's. It was seen by a painter-neighbor who admired its brilliant red, "Like Chinese red Lacquer," he said. My father gave him his only plant, and the neighbor took it home and planted it in his own garden.

Its stamens were a funny caterpillary sort of texture something like chenille. I cannot recall ever having seen pollen on them.

Many years later, our neighbor gave me permission to dig up his plant with the idea that I would take some small divisions of it and replace the largest piece in his garden.

As with some plants, the more you try to have more of them, the more you have less and less. And what you have do not grow well. My neighbor's division finally died. The pieces in my garden, when they bloomed in the following years, never had the "chenille" stamens and I finally came to question whether I hadn't mixed up some plants in the bed.

So, it is not a proven F-2. May never have set a seed. May not have had viable pollen. And is now, as I said at first, non-existent.

For lobata hybrid F-2's, we shall have to concentrate on Moon-rise.

LANDSCAPE WITH PEONIES

Landscape possibilities can be enhanced with a liberal and judicious planting of peonies and color combinations achieved that will add floral beauty to your surroundings. The various colors of green are really most interesting and can be skillfully employed to bring out striking contrasts in the foliage alone. This is a continuous picture throughout the growing season.

The peony as a garden flower, is dependable; hardy; easy to grow; does not require constant attention; is unsurpassed for decorative effects; lends itself nicely with other perennials; will withstand a rigorous growing season throughout all seasons and come up smiling the following year; has a blooming season of several weeks by using the hybrid and tree peonies, as well as species to start the season, followed by lactiflora varieties in their various seasons. It has everything we could expect in a flower.

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THE STATELY JAPANESE PEONY

By Joseph Glocka, West Allis, Wisconsin

Our peony garden fronts a rather well trafficked street. As a result it attracts a good number of passersby during the blooming season. Most of those who stop are greatly impressed by the full doubles because of their size, color and fragrance. Princess Margaret, Norma Volz and Mrs. Livingston Farrand rate ooh's and aah's consistently.

Admittedly the big jumbos are truly quite impressive especially to new initiates. Others, however, also should share an equal place in the sun. Take a semi-double like MINNIE SHAYLOR. You can spot it anywhere in a multi-mix garden. Miss America, a white semi-double with a dark honey center stands in elegance, too. As for singles, a plant or two of SEASHELL is certain to be spotted and seems to remain "in the pink" for weeks on end.

Hybrids are in a prestigious class all by themselves and are truly worth a mention simply because of their varying pedigrees. Who can deny the impressive beauty of RED CHARM, or CYTHERIA, or even CAROL with its curious un-peonylike petal structure?

But, for my part, when it comes to the real eye stoppers in our garden, I find myself growing ever more partial toward the stately Japs. These color-splashed beauties command singular attention no matter where they share a berth with others. Each has a most succinctly defined bloom structure with a generous supply of delicately colored and tinted staminodes. There is no pollen to mess up the petal colors at the slightest weather disturbance. As for durability... come rain or storm, the sturdy Japs are the first to survive, dauntless and unshaken.

There are a number of varieties which do well from year to year without too much apparent upkeep beyond periodic roto-tilling. LARGO, for instance, has been a phenomenal repeat performer in our garden from year to year. It is a pink Jap with huge diameter blooms. It is matched only by WESTERNER in stamina and vigor. Both are superbly prolific.

CARRARA, POLAR STAR and TORO NO MAKI, among the whites bear a crispness that persists a good many days after blooming and after cutting for vase use.

Among the "Nippons," NIPPON BEAUTY and NIPPON BRILLIANT steal the show as they come into bloom flaunting their redness in every direction.

Among the reds, too, there's HARI AI NIN, a most striking, almost maroon Jap with just a hint of contrasting color at the tips of the staminodes. RED SPLENDOR is another vigorous bloomer. A five or six year old plant of Red Splendor stands about 36 inches tall and attains a 40 inch diameter. It bears literally dozens of fine, impressive blooms.

Other Japs which are in color classes by themselves, but which are equally as hardy are BREAK O' DAY—a fine dark, rose-pink Jap with dark red staminodes and PRAIRIE AFIRE. This is a firey pink with deep raspberry overtones. It reminds one of old fashioned Christmas hard candy.

There are a good number of fine Japs commercially available which I do not have the good fortune to own but hope to add to our garden in the future. Building a collection of Japs is like specializing in a specific type of postage stamps in stamp collecting. One is more apt to own somewhat of a complete set of the best in a few years. This is in contrast with other peony varieties which are so great in number that securing even a representative collection is a near impossibility for the average peony fancier.

This fall, we have added two truly fine Japs from the gardens of Marvin Karrels. They are WHITE CAP—a most striking maroon petalled Jap with a white staminode structure, and WALTER MAINS which Marvin took to the show in Hamilton, Canada. This red hybrid Jap with its variegated color staminodes stands in a class by itself. It is peerless and a precious addition to our collection.

Japs should be given more attention by everyone who owns peonies. Growers will find them perpetually sturdy, vigorous and very, very prolific. They are generally resistant to botrytis and mature plants produce many fine root divisions. Japs keep well as a cut flower and take refrigeration exceptionally well when held for a show. They're blue ribbon winners all the way!

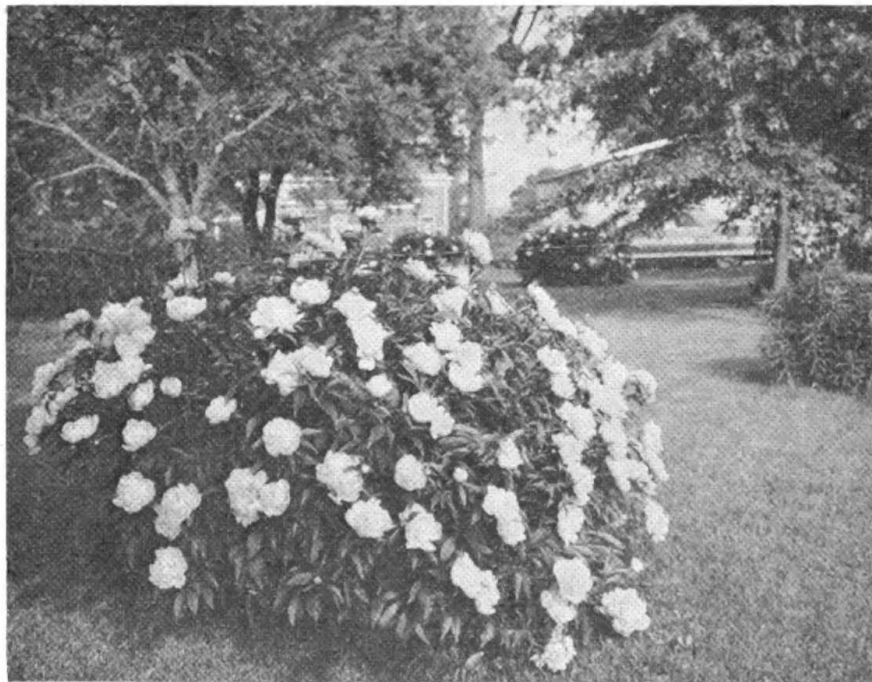
KINGWOOD CENTER — MANSFIELD, OHIO

Frederick E. Roberts has been appointed Director of Kingwood Center succeeding Dr. Raymond C. Allen, now Director emeritus. The change was announced by Charles E. Nail, Chairman of the Administrative Board, who expressed the Board's regret at Dr. Allen's resignation. He stated the action was being taken at the request of Dr. Allen who cited health and other personal reasons in requesting emeritus status. Dr. Allen will remain at Kingwood as a consultant with special responsibilities for greenhouse operation and for the rose and perennial gardens.

Frederick E. Roberts, Kingwood's second director, has been Assistant Director since September, 1973. He came to Kingwood as Horticulturist in January of that year from a position as Landscape Superintendent for the Department of Administrative Services in the State of Delaware. At 32, Mr. Roberts is one of the youngest persons ever appointed to head a major horticultural institution. His educational background, varied work experience, and extensive travel combined with an energetic and outgoing personality fit him for his new position.

A native of eastern Connecticut, Mr. Roberts holds an undergraduate degree from the University of Connecticut and a master's degree in ornamental horticulture from the Longwood Program of the University of Delaware. He has been a Mercer fellow at the Arnold Arboretum and lived and worked in India as a participant in the International Farm Youth Exchange Program. He has visited many of the outstanding botanical gardens in the U. S., Europe and Central America.

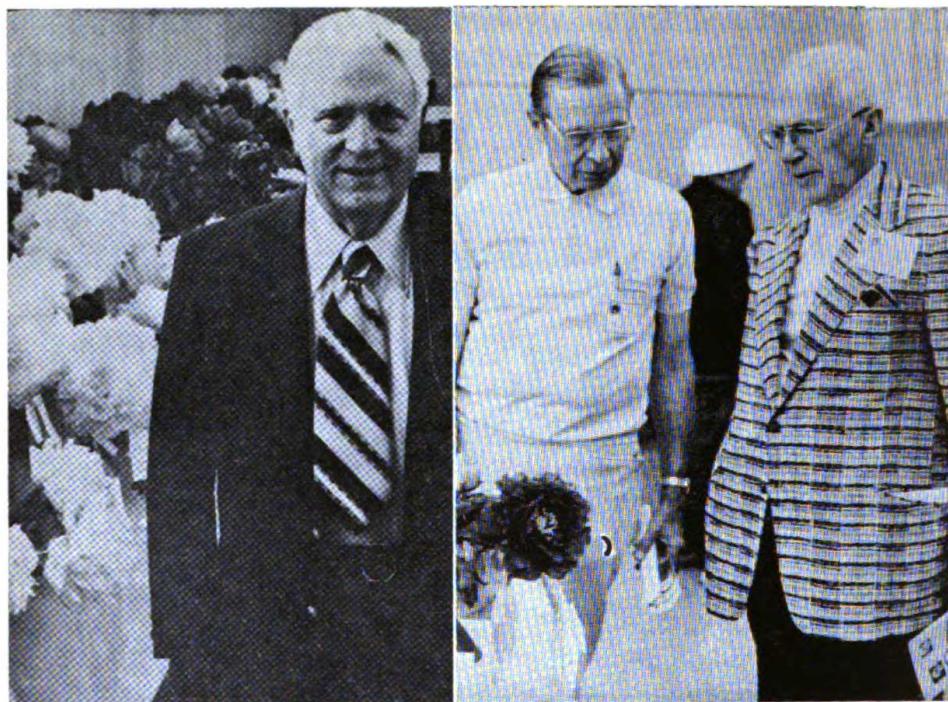
As he undertook his new responsibilities, Mr. Roberts commented on Dr. Allen's magnificent accomplishment of turning the private estate of Charles Kelley King into an important horticultural center which attracts some 400,000 visitors annually. Building on this solid foundation, the new director hopes to make the center even more responsive to contemporary needs.



In Lamoni, Iowa, this peony plant of over 60 years is growing in a private yard. Year after year it is covered with myriads of pastel pink blooms. The name has long been forgotten, but the plant is ever a reminder that the perennial beauty of the peony

has its place in the land.

Mr. Oren Allen of Lamoni, publisher of "Joe's Bulletin" featured this peony plant on the cover of the June 1974 issue, with the caption, "A Happy Lawn in the Bulletins Home Town."



Marvin Karrels
Wisconsin

Frank E. Moots
Kansas

Louis Smirnow
New York

Hamilton, Ontario, Canada. 1974

It Takes Men of Dedication

Twenty-five years ago this President's Message was written by the then President, Frank E. Moots.

This June, Messrs. Karrels, Moots and Smirnow attended the 69th Exhibition in Hamilton, Ontario, Canada.

Mr. Moots was head judge of the Exhibition; Mr. Smirnow was occupied with the display of tree peonies, as well as judging the herbaceous. Mr. Karrels brought his annual display of peony blooms, transporting them by air from Milwaukee, Wisconsin.

DECEMBER 1949

PRESIDENT'S MESSAGE

May the year of 1950 be the best ever for all peony fans.

The excellent shows of 1949 should spur us on to bigger and better exhibitions during the coming season. The National Show at Milwaukee was a great success and so were the shows at New York and Minneapolis. Many other groups also had outstanding exhibitions. The Peony Society and its individual members face a challenging goal in trying to excel the record of the past year.

But in addition to the accomplishments of the past year, many new possibilities were revealed. The better performance and the wider acceptance of the new hybrids open a broad new field for the progressive grower. And the new tree peonies, especially the Japan-

ese varieties which Mr. Louis Smirnow has done so much to popularize, are setting new standards of perfection.

Let no one say that the peony has reached its full development. It is just getting started and the prospects for the future of the peony are just as good as or better than those of any other flower.

The American Peony Society demonstrated that it is a growing organization and that it is doing a good job in getting a wider knowledge of the peony to the general public.

That the membership of the society has increased and its influence is more widely felt is due principally to the efforts of Mr. Marvin Karrels, president for the past two years. Mr. Karrels has spent much time and energy in behalf of the society and all peony lovers are indebted to him for the publicity and popularity which has come to our favorite flower recently.

Let us all keep in mind the great possibilities of the peony and of the society and make 1950 the best year in our history.

FRANK E. MOOTS, Pres.

THE PEONY

Submitted by Louis Smirnow

*"In the third month the 'Loyang flower' is in full bloom,
In the whole universe there is none to compete with its splendor,
Contented amidst the spring breeze as head of the flowers;
Unchallenged as the foremost fragrance of Spring."*

中華歸氏蘭藝社

WOMEN'S GARDEN AND ART CLUB
OF THE REPUBLIC OF CHINA

"Mudan" is the Chinese name given to the peony tree, a flowering sub-shrub indigenous to China. The flowers of this perennial have been highly praised in Chinese literature and have been given titles such as Gold-Worthy, Queen of Queens, Flower of the Empire, Flower of the Capital, and Flower of Wealth and Glory.

The mudan is not mentioned in the ancient classics of China, and is seldom mentioned as late as the Chin, Han, Wei and Chin Dynasties (2nd century B.C. to 5th century A.D.). The first person to paint the mudan was Yang Tzu-hua, a man of the Northern Chi who lived from 479 to 502 A.D. The peony was introduced into Japan during the time of the Emperor Yang of the Sui Dynasty (589-618 A.D.).

The mudan reached the peak of its popularity in China during the Tang Dynasty. It prospered particularly in Loyang, in modern Honan Province, in the times of peace that accompanied the Kai Yuan reign (713-741 A.D.). The Tang was a powerful and brilliant dynasty representing the height of Chinese culture and among the flowers only the mudan can properly serve as its symbol. The period was a time of poetry and romanticism, epitomized by the lush and vivid appearance of the mudan. One story has it that the Empress Wu (reign 648-704 A.D.) ordered the palace gardeners to have all the flowers in her garden bloom, despite the fact that it was winter. She visited the garden and saw that all the flowers had been obedient, except the mudan. Angered at this impudence, she had the offending plant banished from the capital of Changan to Loyang. For that reason it is now said that "Loyang is the home of the peony" and the blossom is, among its other names, known as "the flower of Loyang."

The Chinese have traditionally held the mudan as an aristocrat of the plant kingdom but that has not prevented them from utilizing it outside of the garden. The follicle fruit with its hairy pubescence is used for ornamental purposes. The petals of mudan flowers are consumed as vegetables and as tea. The tuberous root was long used as an herbal medicine by the ancient Chinese.

There have been numerous varieties of the mudan developed during the long history of China. The varieties are too extensive to describe in detail here. The most common categories, characterized by their flowers, are as follows:

Thousand-leafed yellow, early flowered, bright yellow flowers with darkish centers;

Thousand-leafed flesh-red, flowers up to nine inches in diameter;

Thousand-leafed purple-red, flowers seven to eight inches in diameter;

Thousand-leafed blush-red, flowers up to ten inches in diameter;

Thousand-leafed pink;

Thousand-leafed green;

Thousand-leafed white;

Thousand-leafed black;

Multi-faced, purple when budding, turning to blush-red at early bloom and apricot-red at full bloom.

As the mudan can be woodenized to some extent, it is also referred to as the wooden peony and as a tree. Its sturdy woody stems survive winter without dying back to ground level. The peony as popularly grown in the United States today is not the real mudan tree as known to us Chinese. The mudan is a delicious sub-shrub with a tuberous underground root. The smaller plants, which can be grown in pots, are generally two to three feet or more in height.

The ground-grown mudan often reaches a height of ten feet or more. It has biternated leaves, each having a long stalk, and its leaflets have wide margins and three crenated lobes. The leaves are light green in color with a whitish cast. The color of flowers varies with different varieties, the most common running from red to purple with a darker center. Varieties of white and black flowers have also been recorded. The flower of the peony tree is considered botanically "complete," with many stamens and a few pistils united into a cap. The fruit body developed from a fertilized flower is a follicle in nature. The fully double varieties are extremely top-heavy and require support for each bloom.

There are three ways to propagate the mudan: by seed sowing; by separating suckers or tillers; and by grafting one variety on another. For seed sowing, seeds are first collected from fruit follicles and the proper agro-chemicals are mixed with the seeds before sowing to minimize the possibility of insect attack. A seedling takes about six to seven years before it reaches the flowering stage. The trees propagated from seeds grow vigorously and have a longer life span than those propagated by other means. The second method of propagation requires digging up full-grown peony trees and cutting the tuberous roots into pieces with one to four tillers on each piece. These pieces are replanted directly into the soil. Treatment with a chemical such as sulphate powder prevents possible contamination by disease in the cut pieces. Grafting is best done in mid-autumn by the lunar calendar. Inarching, cleft-cutting, or root-grafting can be used.

The mudan grows luxuriantly in a cool and semi-arid climate. Any area with an average yearly temperature around 15° Centigrade is appropriate, providing that the tuberous root is not exposed to a temperature below zero Centigrade. The soil should be loamy and the place well-ventilated and properly shaded. Despite its glamorous appearance, the mudan is a hardy plant which can prosper under a variety of conditions.

A WOMAN APPEARS

Peony History — Submitted by R. W. Tischler

Seldom is a great and noble venture ever carried to a successful conclusion without the aid of a woman. We must pause in this brief history to pay tribute to a woman who has done a great deal for the improvement of the peony, and for the spread of reliable information about the peony.

Mrs. Edward Harding holds such a place of distinction. She

was an ardent gardener in her own right, having resided near Boston in early life and later moved to New York City where her interest continued. Mrs. Harding contributed most, not through breeding of fine peonies, but by writing about fine peonies. Mrs. Harding published in 1917, "The Book of the Peony," with twenty illustrations in full color, and twenty-two in double tone, and one may. A few years later she published, "Peonies in the Little Garden." The first publication contains a very extensive history of the peony, along with classifications of the peony from time to time, as worked out by prominent botanists, and two chapters on the Tree Peony. She sought every way possible to extol the peony, and while our records seem to indicate that she did some peony propagating, her greatest contribution was in her writing.

To encourage the peony breeders with the introduction of new stock, Mrs. Harding, evidently a lady with some wealth, offered a prize of \$100.00 for the peony produced that year. This prize was won by E. J. Shaylor, with a peony that he eventually named, Mrs. Edward Harding, in honor of her great interest, in 1922, while Mrs. Harding was touring Europe, she offered to the Societe Nationale d'Horticulture de France, a prize of \$100.00 for the best peony introduced that year. This was won by Emile Lemoine, with a peony which he eventually named Alice Harding, in recognition of Mrs. Harding's outstanding work. Mrs. Harding and Alice Harding may be found among the twelve best peonies listed of the lighter hues.

In 1935 Emile Lemoine crossed *Paeonia Lutea* X *Yaso okina* producing varieties, all of which have yellow or red and yellow flowers. Of these produced, he named one of our most popular *Lutea* Hybrids, ALICE HARDING.

In the book "Peonies in the Little Garden," Mrs. Harding writes in her concluding Chapter: As I read the title of this book, once more before I lay down my pen, I have a vision:

I see a little girl leaning upon the seat of an immense old chair, covered with needle work.

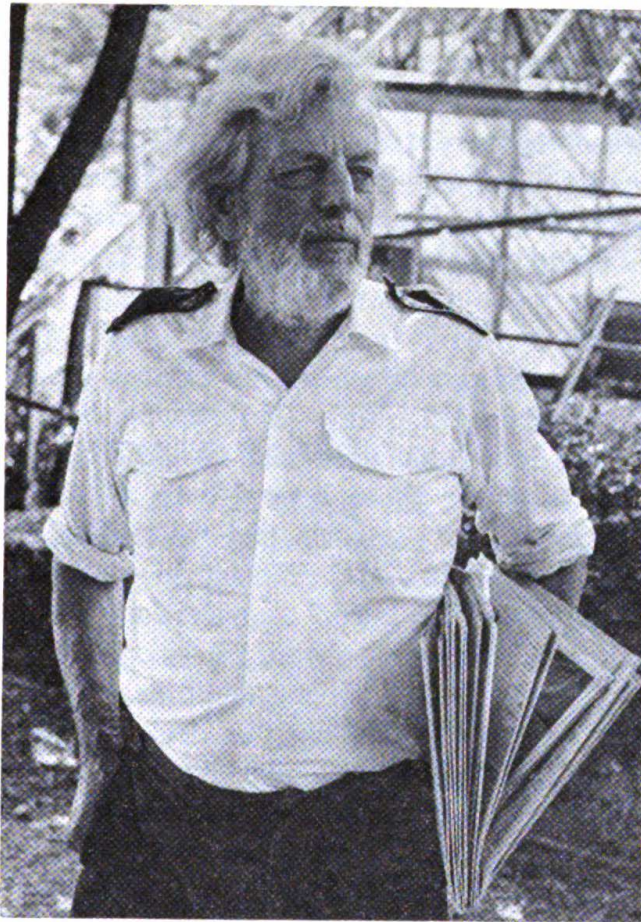
With caressing fingers she traces out the old-fashioned flowers there shown in heaped up richness, stately Lilies and cabbage Roses, imposing Crown Emperials and Lilacs in purple and mauve, blue Irises and dazzling Poppies, all receive her absorbed attention.

As her gaze falls upon a very fat and pink Peony, the little girl catches her breath; some day, when I am grown up, she promises herself, I will have a little garden full of all those flowers, it will be Heaven.

The little girl is now a grown-up; travel, change, a fair share of life's joys and vicissitudes have been hers, but, true to her childish resolves, she has a garden full of those flowers, nor is she disappointed, for it is Heaven.

TREE PEONIES

William Gratwick. Pavilion, N.Y.



Mr. William Gratwick
1974

HISTORY

The Tree Peony of China was known as "The King of Flowers" and the common herbaceous peonies as "The King's Ministers." In paintings, poetry, and medical texts, references to cultivated forms of it extend back into Chinese history for more than 1400 years. For many centuries the rulers of China decreed that such regal flowers could be grown only in the gardens of the imperial palaces, "where they never failed to astonish the beholder, rows upon rows of them arranged in narrow, shallow terraces, piled up one behind another—ablaze with blossom."

The first Tree Peony known to the western world was secured for Kew Gardens in 1785. But it was left to Robert Fortune, the explorer-botanist, to go into Central China and bring back the finest flowers in 1846. To him we owe the unforgettable description of a Mandarin "sitting for hours, smoking and drinking tea, while he gazed at a Tree Peony covered with four hundred flowers."

THE WILD PLANT

Curiously, however, the wild form of this plant has only been discovered within recent years. Among the first to see it was Reginald Farrer, author of "On the Eaves of the World" who writes of finding it near the border of Tibet:

"So I sat at last and rested, till my eye was caught by certain white objects farther along the hillside, that were clearly too big by far to be flowers . . . Through the foaming shallows of the copse I plunged, and soon was holding my breath with growing excitement as I neared my goal, and it became more

and more certain that I was setting eyes on *Paeonia moutan* as a wild plant . . . that amazing flower, the most over-poweringly superb of hardy shrubs. Here in the brushwood it grew up tall and slender and straight, in two or three unbranching shoots, each one of which carried at the top, elegantly balancing, that single enormous blossom, waved and crimped into the boldest grace of line, of absolute pure white, with featherings of deepest maroon radiating at the base of the petals from the boss of golden fluff at the flower's heart. For a long time I remained in worship and returned downward at last in high contentment."

JAPANESE TREE PEONIES

Plants grown today from seed are often single whites closely resembling this description of the wild plant. But lovely though they are, they cannot compare in beauty with the finest Japanese varieties, a strain which stems from those brought to Japan by Buddhist monks in the 17th century. Varieties like "World of the Rising Sun," "Host to the Cherry Blossom," "Mountain of Sun-lit Snow," and "Invitation to Abundant Pleasure," and the long list of other named varieties are the culmination of patient selection and improvement. The purity of their whites, pinks, salmons, and reds cannot be described in words; nor can the delicacy of their blossoms be imagined. There is a daintiness about the semidoubles and an airiness and sparkle in the full doubles which is indescribable.

DESCRIPTION

Tree Peonies differ from the common herbaceous peony in two conspicuous ways: 1) they develop rough-barked, woody stems which, instead of dying back to the ground each winter, continue to grow year after year so that a bush, (not a tree) is formed four to six feet tall and as many feet across; 2) they blossom about two weeks earlier. Tree Peony flowers are also much larger—eight to twelve inches across—than the herbaceous kinds. This great size, combined with a delicate perfection of texture and form, and a color range which extends from white through pink and red to almost black, make them unique among all garden plants.

Tree Peonies grow in any good garden soil and are winter hardy in those parts of the country with a climate comparable to that of their native home, which means in most of New England, New York, and west to the Pacific Coast. They will also grow farther south. North of that latitude some winter protection should be afforded, such as is given roses. The fact that plants brought back from the Orient shortly after Admiral Perry entered Japan are still thriving in some of the old gardens of New England and New York indicates that the Tree Peony is naturally adaptable to our country.

USE IN THE GARDEN

A Tree Peony is usually the most notable plant in a garden and may well be given the place of honor. A single specimen can hold the focal point in an intimate design; two look well as accents on each side of steps or the entrance path; four can be used in a balanced design at the corners of a flagged area reflected in a pool. Or a group of Tree Peonies is perfectly adapted as a middle-ground of the flower border with Lilacs in full bloom in the background. When not in blossom, Tree Peonies are still extremely handsome and an addition to any garden for the beauty of their leaves, the gesture of their branches, and rich autumn color. Brought into the house, Tree Peony flowers should be cut with a short stem, and are at their best floating in a shallow dish or enclosed in a crystal bowl.

HYBRID TREE PEONIES

Until the 1880's only one species of Tree Peony was known (*P. moutan*). Then a Tree Peony with a little yellow flower (*P. lutea*), somewhat resembling a St. Bridget anemone, was discovered by French missionaries in Southern China. Cross-pollinating these two plants has created new hybrid strains. Those made in France by Lemoine and Henry, using the heavy Chinese doubles as the other parent, are not much to our liking because the stems are not strong enough to hold up the enormous blooms.

The Saunders Hybrids

In the late twenties, Professor Saunders began crossing his fine collection of semi-double Japs with a strain of *lutea* which he had imported from England. The resulting hybrids are an exciting new race of flowers. To quote Frances Affeld: 'It was in the old Saunders house on the campus of Hamilton College. I was led into the dining room. There the big mahogany table was covered with peony blooms—or were they peonies? They were certainly the most extraordinary flowers I had ever seen.'

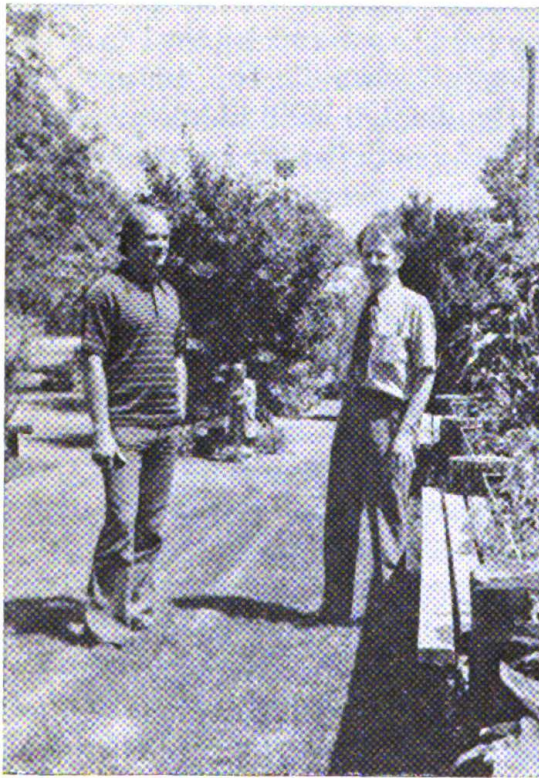
It is difficult indeed to describe them. In form some of them are like magnolia blossoms; others remind one of lotus flowers or great anemones. There are some seventy varieties, "from silver-cream through all the yellows to the color of ripe grain, and from dusty pink through deep strawberry tones to a maroon that is close to 'black,' with a scattering of subtle mauves and shadowed rose colors." The names suggest their colors; Silver Sails, Amber Moon, Golden Isles, Harvest, Black Pirate. For many years these hybrids will be among the rarest and most sought-after of flowers, and well they may—for these hybrids are among the true aristocrats of the garden. We believe a few of them are among the most beautiful hardy plants in the world.

Reprint.

NEW YORK NURSERYMAN VISITS ARMATYS GARDEN

Central City Republican-Nonpareil

Central City, Nebraska



Tree Peony specialists in the Leo Armatys garden, Gary Seaman (left) of Gratwick Tree Peony Nursery, and Leo Armatys.

Gary Seaman of Pavilion, New York, visited the Leo Armatyses here last Wednesday. Mr. Seaman is vice-president of the American Peony Society, and an associate of the Gratwick Tree Peony Nursery in Pavilion.

Tree peony grafts imported from Japan are available from many nurseries at from \$3 to \$10 each, but the Gratwick nursery and that of David Reath Vulcan, Michigan, are the only ones presently specializing in quantity propagation and sale of the choicest new varieties. Many of these newer kinds are those developed during 25 years of intensive hybridizing by William Gratwick and his hybridizing partner, New York artist Nasson Daphnis.

Some of the demand for these hybrids was generated by an article in the Journal of the Royal Horticultural Society, London, entitled "The New Hybrids of Moutan," authored by Leo Armatys.

Propagation of tree peonies is a slow and uncertain process, and they must be grown for several years before representative blooms can be expected. These blooms range from 3 or 4 inches to 10 inches or more, and come in white, pink, purple and almost all shades of red and yellow. Prices run up to \$50 or more. These woody-stemmed shrubs live for generations, and some are known to have reached six feet or more in height within 30 to 40 years.

Tree peonies are native to Tibet and the Northwestern provinces of China. For many years they were restricted to the gardens of royalty. They found their way into Japan, and the Japanese, mainly by the process of selection, developed single and semi-double flowers as opposed to the full doubles preferred by the Chinese. Tree peonies now thrive throughout the temperate zone. Principle requirements are good drainage some sunshine, a little bonemeal or other high phosphorous fertilizer, and patience—a lot of patience!

Forty young tree peony hybrids and a dozen or more of the Japanese-type tree peonies are growing in the Armatys garden. These include many of the Gratwick-Daphnis originations, some not yet introduced, and two which were sent to him for testing and evaluation. Included are such things as self-pollinated F1 lutea hybrid No. D-255, a truly beautiful red which was so widely publicized that Seaman says he may offer by its number rather than giving it a name. Orders for D-255 have come from many parts of the world, and some of those orders cannot be filled before 1980.

Other noteworthy varieties in the Armatys garden include the the species *P. suffruticosa*, "Rock's variety," a well-substantced white with dark splotches at the base of its petals. It is one of the finest garden varieties, and one of those chosen by President Kennedy to replace some of the roses in the old White House garden. And a "mythical" variety, once known as "Captain's Concubine." This is buxom pink semi-double flower of great size, elegant texture and conformation.

A writer by the name of Vanloon once made derogatory remarks about its name, whereupon Bill Gratwick promptly retired that variety, vowed he would never offer it for sale, and in recent yeras has denied its very existence. Armatys says it way well be the most gorgeous pink of all.

Gary Seaman endorses the oft-quoted sentiments of pioneer hybridizer, Professor A. P. Sauders: "The tree peony has reached the plateau of excellence toward which all other flowers must still strive!"

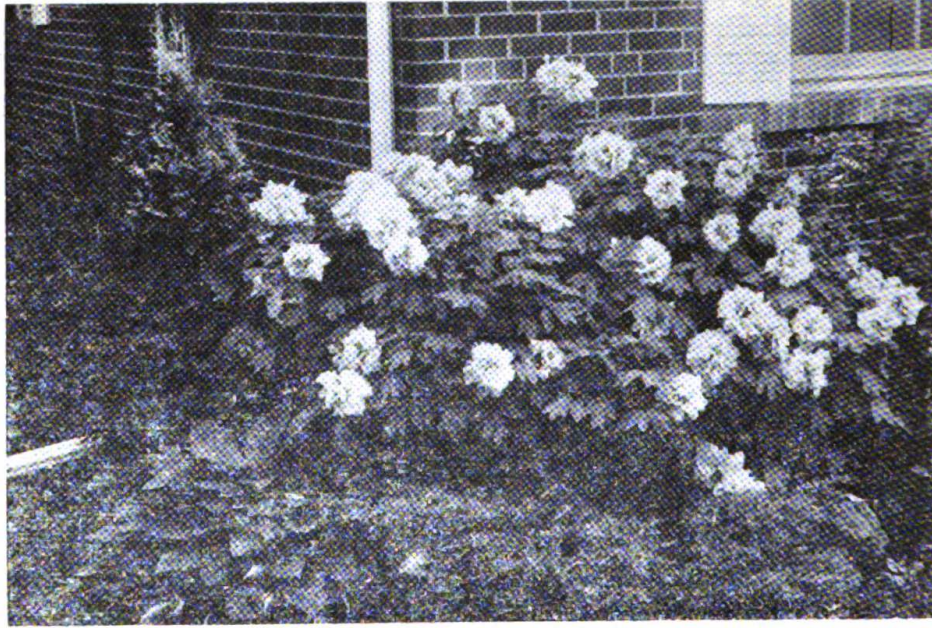
IN MEMORIAM

GEORGE E. (CASEY) O'DONNELL

By Leo J. Armatys

The death on April 21, 1974, of G. E. "Casey" O'Donnell, Lafayette, Colorado, cut short the career of a Rosarian whose conversion to the cause of the tree peony started 14 years ago. Casey visited many gardens during his travels. I'll never forget his first visit to Central City, when he spotted the borer wasp "*Ectemnius stirpicola*" in one of my plants. Casey was an enthusiastic gardener and a knowledgeable one. Just a few years before his death he wrote a fine article, "A New Romance, Tree Peonies," for The Green Thumb, a publication of the Denver Botanic Gardens.

MIFUKUMON



*Mrs. L. Corman, Tree Peony, MIFUKUMON
Oakville, Ontario*

When Mrs. Corman came to Hamilton, on the western tip of Lake Ontario, as a bride in 1930, she was greeted by Mifukumon. The plant was growing in front of her mother-in-law's house next door. It had been there since about 1850. No one is sure of the origin. We think Mr. Hopkins, the previous owner of the large house brought it from Burlington. In 1930 Mifukumon was over ten feet in diameter and four feet high.

It then went through a period of neglect, left to weeds and grass, but never let up on its blooming. In 1961, Hamilton expropriated the Corman property to make a lakeside park. Mrs. Corman moved to Oakville but could not leave her tree peony. She had it dug and divided into three plants. Two are grown on the north side of the house about three feet out from the wall, thirty feet from a forty foot high spruce. The other plant is on the south side of the house. They all seem to be growing equally well.

This year the corner plant had over 40 flowers, light velvety lavender in colour, fully double, about six inches in diameter.

These create a great deal of excitement in the area as neighbors and friends come and admire this beautiful tree peony.

The translation of Mifukumon is Gate of Good Fortune, another reason to add it to your shopping list for 1975.

MEMORABLE VISITS TO GRATWICK'S

John Simkins

One advantage in living in Oakville, Ontario (Canada) is Gratwick Farm where grows the largest tree peony collection in the western world. This collection includes the most exotic tree peonies anywhere.

A few miles to the east lives Dr. Henry Landis, Q.C., a most dedicated peony collector. As he is interested in observing and purchasing Gratwicks plants, we usually visit Gratwicks together.

The spring visits are a sheer joy, when first the Japanese varieties are in bloom. From the pink of **Companion of Serenity** through the white of **Gabisan** and sometimes **White Queen** to the indescribable red of **Impu-mon** and the spotted deep red of **Gaigan** and the mystery of **Guardian of the Monastery**, the artistic senses are stimulated.

Another trip is necessary to see the Saunders Lutea hybrids, all in a large circle in the Saunders Memorial Garden. The brilliant yellows of **Canary**, **Amber Moon**, **Age of Gold** and **Daffodil** are outstanding. **Black Pirate** and **Corsair** compete for attention with their vibrant dark red colours. **Marchioness** and **Coronel** are more subdued delicate beauties that call for close up inspection.

In addition, there are the Daphnis hybrids worth a trip on their own.

In late August we make our next visit. This is to collect seeds and wood for grafting. The weather is warm as I walk the large field looking for the rare lutea seeds and collecting seeds from open crosses. I admire the view over the Genesee valley from the big field.

All around at Gratwick's is history, art and beautiful things. The dwarf village brought from Bavaria with its fountain is a part of history. The Chinese furniture at Gary Seaman's with his books, photos and paintings by Nassos Daphins, all fit into place. This along with Gary's skill at cooking the produce of the farm is a highlight of the summer.



Mr. Gratwick and the fountain in the Bohemian Village at Gratwick's.

The fall visits are the hectic ones. If we only had wild amounts of money, but even this would not buy the treasures of Gratwick's. Some are still too scarce. The best part of the fall trip, I call Gleaning the Fields.

The large plants are dug by front-end loaders and sometimes pieces are broken off and left in the fields. Like the gleaners in that old Sunday school painting, I go over each hole looking for a stem with a bud and root. I often settle just for a stem and root. These are given to me and offer many moments of excitement in contemplating which rare variety they might be, when in bloom. None have bloomed yet, but one day . . . wow!

Mr. Gratwick was in the process of repairing the fountain at the dwarf village, when we talked to him. The fountain uses water brought eight miles from the hills of Peoria.

Nassos Daphnis made some crosses this spring and is continuing his program to obtain the large Japanese bloom with more substance in the lutea type bushes, with strong stems, so we were told by Mr. Gratwick.

SOIL: THE ENVIRONMENT FOR ROOTS

Reprinted with permission from Merle C. Coulter and Howard Dittmer, The Story of the Plant Kingdom, 3rd edition revised, Chicago, The University of Chicago Press, 1964. 467 pages, paper-bound \$3.95. pp. 79-85.

THE STORY OF THE PLANT KINGDOM is an excellent reference for practical gardeners. The text presents introductory botany in a remarkably simple style that will be easy reading for anyone who has experience with the care and development of plants. The basic life processes of plants are introduced and each major portion—leaf, root, stem—is described in terms of how it works, its forms, its functions, and the principles of its growth and development. Significance of the facts is emphasized throughout. It is characteristic that the chapter on roots opens with a discussion of soils and soil water, the environment to which the root responds in most of its attributes.

The following selection is commended to the attention of professionals and amateurs alike. In either case, the writer's clarity and simplicity of style can be enjoyed. Perhaps some helpful information will also be found. If this provokes questions about soil improvement, it may be helpful to re-read the short article of the same title by Ben Vance, extension horticulturist, in the March 1974 APS Bulletin.

*Don Hollingsworth
5831 North Colrain
Kansas City, Missouri*

— 28 —

SOIL

The word "soil" has different meanings for various individuals. To the uninformed it is just "dirt"; to the geologist it is disintegrated rock; to the farmer it is his livelihood; and to the botanist it is that portion of the earth's crust which supports vegetation. Actually, soil owes its qualities to a great variety of things. A sterile soil is mostly disintegrated rock with decomposed organic materials in it, brought about by the action of fungi, bacteria, protozoans, nematodes, and other minute organisms. A recent analysis of a fertile soil revealed the following poundage of microflora and microfauna in an acre-foot of soil (i.e., 1 acre in area and 1 foot deep):

Bacteria	500-1,000
Fungi	1,500-2,000
Actinomycetes	800-1,500
Protozoa	200-400
Algae	200-300
Nematodes	25-50
Other worms and insects	800-1,000

Most of the micro-organisms are found near the surface of the soil, usually within the upper six to twelve inches, and this is the portion we refer to as **topsoil**. Adequate moisture, optimum temperature, and aeration favor the growth of these organisms, which in turn cause the breakdown of the larger organic substances and build up the soil into a rich loam. Cultivation of the soil mixes these organisms and accelerates their work. Furthermore, cultivation brings up some of the subsoil and mixes it with the upper layers, thus increasing the depth of topsoil and greatly enriching the substrata for the roots to grow in.

Soils are usually classified according to the size of their particles. Coarse sand varies from 2.0 to 0.2 mm. in diameter, a fine sandy soil from 0.2 to 0.02 mm., and in a clay soil the particles are below 0.002 mm. The physical structure of soil is important because it forms the substrate which makes the penetration of roots possible.

Yet soil structure alone is not sufficient to make a good soil. Soil must have organic matter. An enriched soil is one that contains an abundance of humus, which is really an aggregate of substances derived from the waste products of living organisms and from the decomposition of the dead bodies of plants and animals. Dark soils generally contain an abundance of humus, while the light-colored soils are relatively low in organic matter. Fertility of a soil is often governed by the amount of humus as well as the dissolved organic and inorganic compounds present. The disintegration and decomposition of organic substances, principally through the action of bacteria, fungi, and other soil organisms, produce and maintain in the soil a continuous supply of dissolved substances which the higher plants

require. Soil organic matter thus becomes of paramount importance in soil fertility.

Soils owe much of their efficiency, so far as a plant is concerned, to their structure. We have classified them according to the size of particles, but, to break it down further, we see that a cubical grain of sand which is 1.0 mm. in diameter would have just 6 sq. mm. of surface. If this grain is divided into particles of colloidal size 0.1 micron on the edge, the total surface would be 60,000 sq. mm. Because of their platelike shape, clay particles have much greater surfaces than do cubes or spheres of similar diameter. Agronomists estimate that an acre-furrow slice (one acre in area and 6.6 inches deep) of sand contains 5,000 acres of surface, while an acre of clay would have 500,000 acres of surface.

In biology we are always concerned with surface relationships. Plant as well as animal bodies are designed either to increase the absorption of water and dissolved materials or to decrease absorption and water loss. The small but numerous red blood corpuscles in our blood have a much greater surface for the absorption of oxygen than if they were increased in size but decreased in number. Our kidneys are made up of thousands of tubules which offer tremendous surface area for the removal of toxic substances from the blood; similarly, the brain has many convolutions which increase the surface area and provide space for more nerve endings. We shall see later that a plant may have a vastly increased root surface for ready absorption, and yet this same plant may have a reduced leaf surface to retard the loss of moisture. Almost any organ in a plant or animal is constructed for maximum efficiency, and, since all substances that enter or leave the cells do so in solution, surface becomes a very important consideration. For this reason a soil of fine particles provides more air spaces for root growth and at the same time provides more surface for water and dissolved elements.

SOIL WATER

The growth of roots is dependent to a very large extent on the available water in the soil. Without it they cannot survive, and too much may cause them to die because of lack of oxygen. Of course, plants have varying degrees of tolerance for moisture content. Some prosper in the acid bogs, where they grow in standing water all the time. Others living in arid regions do very well where the soil is dry most of the time except for brief seasonal showers. No plant, however, can survive entirely without moisture, so water becomes a very important factor in the distribution of plants.

We usually classify soil water into several categories. **Gravitational water is abundant** after a heavy rain. It descends through the soil in response to gravity, forcing out the air in a "percolating" sort of action. If the soil is sufficiently porous, the rain water soon reaches the water table and may remain in the subsoils as an under-

ground reservoir. As this water flows downward through the soil interstices, it may leach many of the minerals from the upper soil layers. It also changes the soil atmosphere by removing carbon dioxide and oxygen from the pores. Ordinarily this is desirable unless the water stands too long and replaces too much oxygen.

A second category is **capillary water**. This is the water which is held as a loose film around the soil particles. It moves readily from place to place in the soil, governed only by the attraction of one molecule for another. It is the only important source of water for plant roots. The amount of movement of capillary water is determined largely by the size and compactness of the soil particles. In coarse soil, capillary movement is not very far and is quite slow, while in a finely grained soil, such as clay, the capillary attraction is greater and the movement farther and faster. At best, the movement of capillary attraction is greater and the movement farther and faster. At best, the movement of capillary water is only a few feet. We find that a clay soil, because of the small size of its particles, actually has more total pore space between the numerous particles than a sandy soil and for this reason can take in a greater amount of water. However, because the particles are small and therefore closer together, a clay soil will lose most of its water by capillary action faster and more completely than a sandy soil, where the capillary chain is easily broken.

Hygroscopic water is held upon and within the tiny soil particles. It is held so tenaciously that plants are unable to absorb water of this type. As soil dries, some of this water becomes part of the water vapor in the soil and is ultimately lost into the atmosphere. We usually say that hygroscopic water is the water left in a soil after a plant wilts. This amount may then be determined by drying the soil in an oven. The weight before and after determines the amount of hygroscopic water in the soil.

EXTENT OF ROOT GROWTH

We have described something of the habitat in which roots grow; and this in a large measure determines the vertical and lateral distributions of roots, but it is not the only thing. Such factors as soil texture, moisture, temperature, and competition all have their effect, but heredity and the type of root system are at least as important. The pattern of root growth is almost as distinct as the branches and leaves above ground. For this reason it is often possible to identify a plant by the subterranean plant parts alone, and this certainly is a clue to their individuality.

Some years ago we made an effort to find out just how much root growth there actually is to a plant. A winter rye plant was grown in a box containing two cubic feet of soil; then after four months of growth the roots were washed free of all soil, and counts and measurements were made of the subterranean parts. This

single rye plant, grown under ideal conditions, to be sure, had a total of 13,800,000 roots, including those of the main roots arising directly from the plant and all their branches out to the four or quaternary division. These roots, if placed end to end would, extend for a distance of 387 miles and have a surface area of 2,550 square feet.

Samples were also taken of roots growing in the field under natural conditions. Selecting an area from a row of oat plants, a core of soil three inches in diameter and six inches deep was removed. This is the area in which root growth was most abundant, and the sample included parts of several oat plants. It was found that in such a sample oat roots would number 110 per cubic inch, and for a similar sample of field-grown winter rye the number would be approximately 150 roots per cubic inch. The same volume of soil (1 cubic inch) taken under Kentucky bluegrass would have approximately 2,000 roots.

Although these figures seemed unbelievably large, they did not include all the structures on these roots. Arising from the epidermal cells of roots are numerous root hairs. These hairs vary quite a bit in size on different species. Generally, they are about $1/2,000$ of an inch in diameter and usually vary from about $1/100$ to $1/125$ of an inch in length. Counting the number of oat root hairs, we calculated that the same cubic inch of soil that had 110 roots would also have about 150,000 root hairs growing from their epidermal cells. Winter rye would have about 300,000 from its 150 roots, and Kentucky bluegrass would have approximately 1,000,000 root hairs in a similar volume. This might end the story, but with such fantastic figures we felt we must include something on volume. It would seem that if a cubic inch had 110 roots and 150,000 root hairs, there would not be much room for the soil in which they had to grow. When the volume occupied by these oat roots and root hairs was calculated, we found they took up only 0.55 per cent of the total volume; the large number of winter rye roots and root hairs occupied only 0.85 per cent of the volume; and the Kentucky bluegrass subterranean parts occupied only 2.8 per cent of the volume. Since the pores in soil take up about 50 per cent of the total volume, we can see that roots actually occupy a comparatively small amount of total space available.

Figures in themselves are meaningless unless they have a purpose. It has been determined that a plant by its new growth of roots and root hairs each day can take care of its water needs. In other words, each day it is sending out new roots and root hairs to tap the film of capillary water lightly held by and between the soil particles. Furthermore, this method provides a means of estimating the potential absorptive capacity of the entire vast hair system. We also can determine a plant's potentialities in binding soil and retarding soil erosion by studying its root system. A plant with a long,

deep root with few laterals would not hold much soil, but one with numerous fine roots, such as the grasses have, provides a fine network which closely holds the soil and prevents water from washing it away. You can prove this to yourself by digging up a plant like a carrot or a dandelion. How much soil stays on the roots when you pull it up? Now try to pull up some grass or dig it up and see if you can shake the soil off. The answer is obvious, and this is one of the reasons grasses are so important in soil-conservation programs.

GARDEN PEACE



*Garden Peace in the garden of Dr. Henry Landis, Q.C.
Willowdale, Ontario*

Garden Peace is not usually considered an exhibition variety but in the garden it is a worthy companion even for Cytheria.

Garden Peace is a large bush about 4 feet in diameter and about 3 feet high. The flowers are large but not as large as Pico, and the stems have never needed staking in my garden. The bush has many flower stems, each containing several blooms, the colour being pure white with a hint of green and a deep reddish centre. The leaves have a leathery look, are shaped like their macrophylla parent and have a deep green colour without a yellow tint. They provide an ideal dark background for the white flowers.

The bush is an eye catcher in the garden and deserves a prominent place. The large size of the leaves and their distinctive colour gives the plant a tropical appearance unlike that of any other peony. The succession of flowers from secondary buds gives a blooming period of about two weeks.

Being two thirds lactiflora, it is a strong, vigorous grower and requires a minimum four square foot area.

After John Simkins saw this plant in my garden last year he purchased one at the auction, and you would do well to follow his lead.

Dr. Henry Landis, Q.C.

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A portion of the keynote address given by President John Simkins, at the American Peony Society banquet in Hamilton, Ontario. June 15, 1974.

As we travel along the highways, in this modern age, we read signs, highway speed limits, milage to various places, Biblical verses telling us to slow down, bumper stickers, slogans and advertisements.

My thoughts turned to the peony when I read, "You are only going around this life once, so live it with gusto." Now Webster defines 'gusto' as meaning pleasure, taste, liking, and appreciation.

Our pleasure is the peony, our taste is the peony, our liking is the peony, and we appreciate the peony.

As I thought of all this philosophy it occurred to me that the eastern religion teaches that man is eternal, passing through life many times and each level of life depends on what has been done with previous lives.

This can be applied to all of us, in a measure because we experience the yearly cycle of nature, where mistakes and failures are erased by the winter season. In the spring, with renewed energy, we can begin again, building on the previous experiences and so reach a higher level of gardening skills. All we need is the faith and will.

This is like the Negro Spiritual where there is a "wheel within a wheel—the little wheel runs on faith, the big wheel runs by the Grace of God."

There is something in man that seeks a meaning in life. Dr. Vikto Frankel, the Austrian psychiatrist, the founder of the Logo school calls this urge the "will to meaning." We can find some meaning in working with the peony, in the creating of new peonies, new colors, new varieties and all the while enjoying the beauty of the flower.

When first interested in gardening, perhaps a flat of petunias and marigolds are grown. They give much satisfaction and have meaning. The garden becomes larger as the interest becomes larger and more varieties are grown and seeds are beginning to be used, so as to increase the number of plants. The transient nature of annuals leads him to look at perennials. This is attested by the few specialist annual societies in existence. I can think of only one, the sweet pea.

So as his skills increase he moves to the perennials. There are many perennial societies, the peony, hemerocallis, dahlias, iris, lilies, gladiolus, chrysanthemums and delphiniums, the more popular. Many members of these societies have moved to the ultimate level of the hybridizer.

Many stay with the perennials and find satisfaction in their choice. Those with larger horizons move to the woody plants. These societies are smaller but more dedicated and patient. Here we find

rhododendron and azalea, magnolia, lilac and camellia societies.

In America today, the phenomenon in sports, especially that of football and basketball, is the raiding of valued players from one league to another.

In the specialized flower societies, we experience the same, in a sense, various perennials are grown and organizations are waiting for memberships. The peony Society offers the greatest challenge to the skilled gardener at the perennial and at the woody shrub levels. It offers great scope to the skilled and the beginner, as there has been so little done in exploiting the peony in these fields.

The challenge is there. The reward of working with the most beautiful plant in the world. So we need to do some "raiding." We must tell the peony story to gardening groups and other societies and convert some over to the peony.

We know to the person where meaning in life is found in gardening and the great reward is the peony. We need messengers, and I invite all members to bring one gardener each into our organization, so that they may enjoy the pleasure, taste, liking and beauty of the peony with full appreciation.

NEWSLETTER — PAEONIA

Editors: The Lanings

Summarized by Bill Seidl

MARCH, 1974. In early January, Chris and Lois Laning were in California where, at the Santa Barbara Botanic Garden, they saw plants of *P. CALIFORNICA* in bloom. Following directions given by Mr. Dara E. Emery, horticulturist at the garden, they also found plants, not yet in bloom, on the mountains. Seed was collected from the large heavy pods of last year's decaying plants. Chris describes the flowers as small, purple and brown on the outside, chocolate brown and red on the inside with yellow petal edges, petals cupped, stamens short and stout, the stems weak, reaching to 34 inches and bearing up to four flowers each, the leaves light green and feathery, the plant shade-loving whose growth begins with the fall rains and continues until June.

The Itoh cross, herbaceous x lutea hybrid, receives its share of attention. Bill Seidl is concerned with success ratios (SR), the ratio of the number of true hybrids to the number of pollinations, why some are high and others low. He discards his mutation theory to explain high SR, having learned that L. Smirnow reaffirms Mr. Itoh's SR was indeed a low 9:1200. To explain Roy Pehrson's relatively high SR of 60:582 in his 1969 crosses, Roy's own previously expressed theory is accepted as the best, namely, that pollen of tetraploid F2 lutea hybrids, mixed with F1 pollen, was especially potent. Having used similar F2 pollen in 1973, Bill is hoping for a

high SR as the seeds germinate in 1974-75. He also reports having three genuine hybrids from 30 pollinations of LACTI x MYSTERY, CHINESE DRAGON, and THUNDERBOLT and that AGE OF GOLD produced six firm seeds (three in one pod) from pollination by an F₂ lutea hybrid.

Donald R. Smith suggests another theory for high SR, namely, that pollen from older well-established lutea hybrid (F₁) plants is more potent than that from young plants. He builds a strong case: his 1971-72 crosses have produced at least 17, maybe 41, true hybrids per 59 pollinations and the pollen came from old (20 years?) plants growing at the Arnold Arboretum. Don notes his SR of 41:59 compares favorably with one reported by Father Fiala, 150:200. Amazingly, ten of Don's hybrids are from a single pollination of PRIMEVERE x ALICE HARDING.

In response to Don's question concerning the foliage appearance of true hybrids, Chris reiterates Roy Pehrson's belief: true Itoh hybrids are recognized by their tree foliage, being 2/3 tree and 1/3 herbaceous in descent. Chris has about 120 of Roy's "false" hybrids and all of the several that have bloomed so far are pure lacti, even to setting seeds.

Rev. Joseph A. Syrový compares the Itoh YELLOW HEAVEN and ORIENTAL GOLD and wonders if the latter may also be an Itoh type. He notes that both fade to near-white and resist further hybridizing attempts.

Roy Pehrson explains how he converted lacti PETITE RENE to a possible tetraploid. The original large clump, along with several others, was sprayed with naphthalene-acetamide (maybe some acenaphthene) in a solvent-carrier of DMSO (dimethyl sulfoxide). The following spring the plant showed no life. The next spring, from a plant thought to be dead, two tiny sprouts showed up. One appeared to have tetraploidal tendencies and has since been nursed to two flowering stems. Roy warns against the careless use of any chemicals used—some may be cancer-causing—, especially when dissolved in DMSO as the latter is extremely effective in translocating dissolved chemicals through human as well as plant tissues.

A good case for using generous amounts of commercial fertilizer, 5-10-5 or 10-10-10, is made by Don Hollingsworth. He cites various articles, research bulletins and other sources, all supporting the practice to the extent of one cup per plant per season or 1700 pounds per acre.

Lamenting the snail's pace at which new peony varieties reach the market at reasonable prices, Dara E. Emery wonders if it is possible and economically feasible to propagate peonies by meristem culture. Using the proper technic, a cubic millimeter of meristematic tissue can be proliferated into any number of plants. He notes that Dr. Toskio Murashige at the University of California at Riverside is one of the foremost authorities on developing the

proper technic for different plants. Apparently, for a fee of \$1000 or so, graduate students under the doctor's supervision will research and develop the proper technic for a particular type of plant. It is then the payer's exclusive right until the doctor publishes the procedure several years later, if at all. A representative of a local firm that does meristematic work primarily with orchids told Mr. Emery that, given the technic, they'd accept the business of propagating clones of a different genus, estimating a price of \$1 each for 250 plants of one clone. In large quantities, the price could drop to 10 or 15 cents each. Mr. Emery believes though that a peony firm or even an individual hobbyist could afford the nominal cost of equipment and space required for such an undertaking. One would have to understand meristem culture in general (Dr. Murashige offers an extension course periodically) and the specific technic for peonies.

DECEMBER, VOL. 4, NO. 4. In a reprint from *Gardening Illustrated*, November, 1954, of an article entitled "The Best Peony Species and Their Hybrids," the author, F. C. Stern, V. M. H., describes the native habitat, history, blooming time (in England), and plant characteristics of several species: CAMBESSEDESII, EMODI, MASCULA (formerly called CORALLINA), MLOKOSEWITSCHII (does well in half-shade), WITTMANNIANA, TENUIFOLIA, OBOVATA ALBA and its varietal form WILLMOTTIAE, PEREGRINA (called FIRE KING in some catalogs; does well in half-shade) and a salmon-red form PEREGRINA LOBATA (often called SUNBEAM), VEITCHII and its variety WOODWARDII. Three wild tree peonies, all very hardy, are described: (1) SUFFRUTICOSA, ROCK'S VARIETY, large white with deep red markings at the base, can grow into a large shrub 8 feet high, 10 feet in diameter, and makes early quick growth in Spring that can be damaged by later cold weather; (2) LUTEA LUDLOWII holds large butter-yellow flowers well up above the foliage on a 6½ foot shrub while LUTEA itself is a low-growing shrub with smaller flowers half-hidden by the foliage. (For these superior traits LUDLOWII has been frequently recommended by Roy Pehrson and others for hybridizing. Unfortunately, in this country, it's been known to bloom only in the Northwest; it is root-hardy in Reath's Nursery in Upper Michigan.) Despite its faults, Stern points out that LUTEA has been used to produce good hybrid tree peonies by French growers and Prof. Saunders; (3) DELAVAYI grows to 4 or 5 feet, bears large deep maroon-red flowers although quite variable in form and shade when raised from seed, grows well under trees, and has been used by Prof. Saunders to produce BLACK PIRATE and other hybrids.

An account is given of the presentation of the Saunders' Memorial Medal to Roy Pehrson at the National Show, June, 1973 in Milwaukee. Chris Laning made the presentation for the Society

to Roy in person. The account tells of Roy's abilities and activities in stimulating people to take up hybridizing and to persevere at it.

In his Lower Michigan climate, Chris has had trouble with early spring growth (especially of the early hybrids) being badly damaged by later freezes. Spring of 1973 was especially tough in this regard. He has transplanted some plants out of known frost pockets and encourages readers to familiarize themselves with the microclimates of their plantings to circumvent such problems. He also praises the beauty of ANGELICA, sibling of SILVER DAWN: WILLMOTTIAE x MACROPHYLLA.

Chris and Roy discuss the confusion that exists in trying to differentiate plants of P. MLOKOSEWITSCHII, DAURICA "TRITERNATA," and DECORA and whether or not MLOKO and DAURICA are merely different forms of a single species.

Roy has a chemically-treated lactiflora, PETITE RENE, that he believes to be either wholly tetraploid or partly so, that is, a chimera, and would like someone to recommend any literature that gives extensive coverage to the subject of chimeras. He also wonders if a bud forming quite low, on a big storage root, on a sectoral chimera would give rise to a completely tetraploid stem.

Four items concerning the Itoh cross are brought up by Roy: (1) Regarding his 1973 Itoh crosses, Roy reports unfavorable results because of week-long very hot weather at prime bloomtime of his lacti seedparents. (2) Concerning his 1969 Itoh seeds, Roy wonders if his extraordinary good results (about 60 genuine hybrids) may be attributed to something he did right in germinating those seeds that he has not done right since then. He especially wonders if nature's way—planting outdoors—might be better than indoor attempts at quicker germination. (3) Roy speaks approvingly of the natural tendency of hybridizers to accept the name "Itoh hybrids" as a grex name for that group of hybrids resulting from crosses of LACTIFLORA and the LUTEA or DELAVAYI hybrid tree peonies. He intends to henceforth use that name without the quotation marks when writing about this group of hybrids. (4) Roy agrees with Chris that the fertile advanced generation hybrids from Gratwicks will **not** (emphasis added) remove the challenge of the Itoh cross despite the fact that some of these plants might supply pollen that would increase the effectiveness of the cross to as much as six times better.

Although gratified by the large number of readers of *Paeonia*, Roy is beginning to wonder if too many are just that, "readers," and not actively hybridizing. He also encourages hybridizers of tree peonies to contribute articles about their successes or failures. None has been received thus far, hence the unintended emphasis on herbaceous hybrids.

Several short items: (1) From New Zealand, Lesley Ander-

son writes of her father's death and of her intention to continue to care for (and hybridize with?) his collection of herbaceous peonies. (2) Chris would like to experiment with the development of foliage bronzing. (3) Roy describes two Itoh hybrids out of PETITRENE x THUNDERBOLT; one is very woody in habit, the other very herbaceous.

JUNE, VOL. 5, NO. 2. A color photo shows a semi-double yellow Itoh hybrid developed by Don Hollingsworth. It is seedling #205 from the cross: unknown blush bomb double lactiflora x ALICE HARDING. Pollen has been lacking in the 1st and 2nd-year blooms. Don advances his own explanation for the erratic results from Itoh crosses. He presents evidence suggesting that the pollen of ALICE HARDING, also BANQUET, performs best when the temperature at the time of growth of the pollen tubes is above 80° F. Don also believes we need tree peonies better adapted to the central U.S. and can develop such a strain by midwestern hybridizers growing large numbers of seedlings under relatively unprotected circumstances.

Roy Pehrson discourages the use of x-rays to induce mutations. The chances of obtaining a useful mutation are so slight and the amount of work and time necessary to discover it is so great that the effort should not be undertaken. He believes conventional breeding procedures offer vastly better possibilities.

To help identify true Itoh hybrid seedlings, Roy describes six characteristics to look for: (1) leaf outline similar to that of tree peony, (2) soft pink coloring in stem and leaf petioles, (3) pink halo or suffusion in young leaves, (4) lighter, less glossy green in full-size but not fully mature and hardened leaves, (5) lack of a tiny red spot where leaf petiole joins stems, and (6) a different root system.

Editor Chris Laning observes that the color and fine-leaf pattern of P. TENUIFOLIA must be recessive in nature as hybrid seedlings never exhibit true tenui foliage. Later generations have the broader rounder leaves of the other parent. The colors are apt to be pink, cream, or white rather than red.

In a letter to Don Smith, Roy reiterates what he's often said before about true Itoh hybrid seedlings: their foliage-form provides undisputable evidence of their tree peony derivation. He does not label such plants as appearing "intermediate" in appearance. He has only two plants out of about sixty hybrids that he labels as having intermediate foliage.

Roy urges that the process of propagating new and rare seedlings by meristem culture be investigated thoroughly. He suggests the use of callus tissue from cut root-ends as a source of undifferentiated cells as an alternative to the meristem cells of two or three precious buds. He also suggests the cold period necessary in the normal growth of peonies may have to be incorporated in the meristemic culture sequence.

Peony history has been written over the period of years and recorded in articles of the past Bulletins. In the following article of Professor A. P. Saunders, (1949) the names of some of the peony fanciers are mentioned as devoting their time to the exacting tasks in the production of the hybrids. We recognize that some have made lasting and permanent contributions, and these noted hybridizers will always be a part of our Peony heritage.

PEONY HYBRIDS

A. P. Saunders

The Chinese peonies have now an established place in the esteem of all who love beautiful garden flowers. For many years there has been great activity among peony growers in the production of new varieties. It began in Europe and in the century and a half that has passed since then, many thousands of named varieties have been produced and distributed. It is a matter of separate discussion and of no little discretion to pick the best from the immense array of beautiful peonies which we now possess. Setting aside the Chinese peonies, however, I propose to devote this article to the consideration of certain new hybrids of various species which have appeared in the past twenty years and which are now competing as candidates for popular favor.

The peony, as a wild plant, exists in about forty different forms—called species. These, in many cases, can be crossed with one another and in this way produce hybrids. The actual process of crossing is not a difficult one. Normally, at a definite time, the flower becomes receptive to pollen and if pollen is dusted on to the stigma, fertilization is effected. If the pollen comes from a plant of the same character as the one on which you are working, the seeds so produced will give the same plant again. Fertilization has been effected but not hybridization. But if the pollen is brought from a different species, then the resulting plants will be hybrids.

Quite a group of peony fanciers have been busy in recent years with the production of hybrids. As well as myself, I might mention Edward Auten, Jr., Princeville, Illinois; W. S. Bockstoce, 2803 Bergman Street, Pittsburgh, Pennsylvania; Mrs. H. A. Dancer, 3131 East First Street, Duluth, Minnesota; Mrs. Mary E. G. Freeborn, Proctor, Vermont; Lyman D. Glasscock, Elwood, Illinois; Benjamin W. Guppy, Melrose, Massachusetts; Ernest F. Kelsey, East Aurora, New York; Dr. Earle B. White, Kensington, Maryland. Some of these growers have produced only a few hybrids, but all have earned our gratitude by devoting themselves to this exacting task.

Up to the present time there are between 150 and 200 such hybrids on the market, and in order to give you the names of some of the best, I will list John Wister's preferences.

Mr. Wister's list is marked x, xx, xxx, xxxx, xxxxx, xxxxxx, and the following are included in the top three groups: **Reward, Burgundy, Dauntless, Patriot, Zulu Warrior, Bravura, Illini Chief, Good Cheer, Scarlet Tanager, Amity, Diantha, Pageant, Little Gem, Bordeaux, Veritas, Postilion, Carina, Diana Parks, Flame, Bright Knight, Cardinal's Robe, Sunbright, Red Signal, Your Majesty, Grace Root, Janice, Mahogany, Black Monarch, Coralie, Sophie, May Delight.**

These are all crosses with *P. officinalis* or something near it as one parent, and *P. sinensis* as the other. In this list will be found beautiful red, crimson, cherry, salmon, light pink and even creamy white varieties.

The distinguishing characteristics of these hybrids are their beautiful colors and their flowering season. Their season lasts in my latitude from about May 10 to May 30, much earlier of course than the Chinese.

There is a group of hybrids which has been produced by crossing the fern-leaved peony, *P. tenuifolia*, with the Chinese peony. These include a small number of varieties among which No. 8277, a fine dark crimson and **Laddie**, a hybrid by Glasscock, also a dark crimson, come up to my standards. This last variety is a cross of *tenuifolia* on an *officinalis* variety, not on a *sinensis*.

A still earlier group of hybrids was produced by crossing *P. macrophylla* and the Chinese peonies. These are mostly pale pink varieties, but there is one outstanding white, **Chalice** by name, a very large and handsome bloom. Others, **Garden Peace, Seraphim** and **Requiem** are fine plants for their season.

A group of hybrids of very distinct and charming character are those made by crossing *P. Emodi* with either *P. Veitchi* or one of the related forms. When *P. Veitchi* is used, we get the so-called Early Windflowers, whereas if *P. Beresowskyi* is used we get the Late Windflower. These are charming plants, unlike anything else in the whole range of peonies. They are tall-growing plants with rather small, pure white, nodding flowers.

Some beautiful plants have been made by crossing some of the Chinese peonies with the species *P. Wittmanniana*. This cross was made some years ago by Lemoine who put on the market four varieties which are still prized—**Le Printemps, Mai fleuri, Avant Garde** and **Messagere**. But in recent years a new group has made its appearance and these are plants of great beauty. They include the following: **Ballerina, Elizabeth Cahn, Green Ivory, Magnolia Flower.**

A new race has made its appearance in recent years through using the species *P. coriacea* and crossing it with ordinary Chinese peonies. The flowers in the hybrids are reddish at first but almost immediately fade to a fine lavender color which then persists until the flower falls. This race should be worked more as it possesses character that has not been produced before.

There are a number of other hybrids that may in time become established in popular favor but there are only two further races that I should like to mention. The first have been produced by combining four separate races of peonies, namely, *P. sinensis*, *officinalis*, *macrophylla* and *mlokosewitschi*. The last named species is yellow and this seems to be the reason why blooms in this group are sometimes tinted with yellow. None of these quadruple hybrids is yet on the market, but as soon as enough stock can be obtained they will be offered. They are a lovely race in which the flowers show unusual shades of color varying through various cream, yellow, pink and buff tints. They will at first be under numbers, all of them in the 16,000 group.

In closing allow me to mention another race which now claims much of my attention. These are shrubby in growth and are the result of crossing the wild species, *P. lutea* with the Japanese tree peonies. These last are the most beautiful of all the races of peonies and *P. lutea* is perhaps at the other end of the series being the least conspicuous of all the native peonies. Yet the cross of one on the other gives a wonderful race of single or double flowers, many of which are large and in shades of yellow.

Lemoine produced the first of these, and his varieties bear astonishing blooms. These are gradually becoming known so that we even see the huge blooms of *Souvenir de Maxime Cornu* in some of our peony shows. This is an extremely vigorous plant and it will no doubt attain wide popularity in time. There are eight or ten other Lemoine varieties, some of them of great beauty. I am the only other grower who has put any on the market. I have had difficulties with propagation in recent years, but as soon as these are overcome thirty or forty varieties of good color in yellow and red will be offered. A few such varieties have already been disseminated and have been received with favor by peony growers. These include *Argosy*, *Black Pirate*, *Festival*, *Narcissus*, *Roman Gold*, *Silver Sails* and a number of others.

It is evident from what has been said that the peony is now in a critical period of its development. For many years its progress consisted in producing variations of already familiar form, season and color. Now we have arrived at a time when new forms are appearing with an extended blooming season and even additions to the color range.

THE INTERNATIONAL CODE OF NOMENCLATURE

It is probable that only a few have this code and, as many of our members are engaged in originating new cultivars (varieties), some of the provisions of this code, which are applicable to peonies, are given here with some examples of their application. For complete instructions, those interested should get the complete code.

The new International Code of Nomenclature for cultivated plants was first published in February, 1958. It is designed to produce uniform practices throughout the world in the naming of all cultivars—whether of ornamental plants, vegetables, field crops and cereals, or of forest trees. It applies to cultivars, and hybrid groups from which they may be selected, such as peony 'Pico' and *Paeonia* 'Chalice.' It does not apply to scientific names of species or botanical varieties, such as *Paeonia lactiflora* or *Paeonia perigrina* var. *lobata*.

The new Code was authorized by an International Commission composed of eight persons each for agriculture, forestry, and horticulture. It is in effect now.

What is new in this Code? Does it affect current activities of the special plant societies? What, in particular, should every plantsman know about it?

The present Code is short. It is simpler to use than its predecessors. It is provided with a good index. While there are no changes in the basic principles of the 1953 Code, several changes have been made so that it will be more acceptable to users. Among them are the following:

1. From January 1, 1959, onwards, a new cultivar name, to be legitimate under the Code, must be published with a description, but before this date, no description is necessary.

This means that henceforth a name will not be accepted as validly published, if merely printed in a list, or if accepted in a registrar's records (with or without a description). Both name and description must be published.

2. The term cultivar is accepted and used throughout the Code, wherever the term variety was used in earlier editions. Anyone is free, however, to use the term variety if he so wishes.

3. Considerable latitude and authority are given to societies maintaining registration activities. Each registering authority should bring its activities within the framework of the Code, noting that:

- a. Registration is the acceptance of a cultivar name and its inclusion in a register;

- b. Cultivar names may be registered only when in conformance with the Code (provisional registration occurs when a new name is accepted and entered in a register; final registration takes place when it is published with a description);

c. Permission for registration of a new name must be granted by the originator (the terms **originator**, **describer**, and **introducer** are defined in Art. 54 of the Code).

4. From January 1, 1959 onwards, the following directives become effective:

a. The name of a new cultivar must be a fancy name, not one in Latin form (earlier names in Latin form are retained, however). (Art. 15). 'Festiva Maxima' would be such a retained name.

b. A cultivar name must be distinguished from other names, either by placing the abbreviation cv. before it or typographically (e.g., by enclosing it with single quotation marks, or by using upper case capitals). (Art. 15). Examples: correct: **Paeonia** cv. Therese, **Paeonia** 'Therese', or **Paeonia** THERESE. Incorrect: **Paeonia** "Therese." Double quotation marks must not be used to identify a cultivar name.

c. No cultivar name may consist of more than three words (abbreviations or numerals are counted as words), and preferably of not more than two words. (Art. 20).

d. To be acceptable, any catalogue or publication containing a new cultivar name must be clearly dated, at least as to year. (Art. 25).

e. The date of a cultivar name is that of its valid publication (Art. 30); prior to January 1, 1959, it is that of either publication or acceptance by official registration.

f. A name must be rejected if published without permission of the originator or introducer of the cultivar (Art. 35).

g. When a cultivar is introduced from another country, its original name must be used except as provision for transliteration (Art. 36) or for a commercial synonym (Art. 37) may apply.

The Code is provided with an Appendix covering registration of new cultivar names. It is to be noted that these are in the form of recommendations, not directives, for the guidance of registrars so that more uniform practices may result.

Article 21 of the Code lists twelve conditions under which cultivar names published after January 1, 1959 will be inadmissible. These should be known by all concerned. Briefly these are the conditions: a. Names containing numerals or symbols; b. The scientific or common name of a genus or species. (*Gardenia* or *Camellia* would not now be acceptable names of peonies); c. Names containing an initial article such the *The*, unless required by custom, d. Abbreviations at the beginning of a cultivar name. (Mount Palomar not Mt. Palomar). e. Names containing forms of address liable to be confused. (Such as Mr. and Mrs.) f. Excessively long words or phrases. g. Names exaggerating the merits of a cultivar or which may become inaccurate through the introduction of new cultivars. ('Perfection' is an example). h. Names that are vaguely descrip-

tive. ('Yellow King' not 'Yellow'). i. Names within the same genus likely to be confused. ('Beatrice' and 'Beatrix'). j. Names resulting in a series of names with the same initial word (such as 'Red Ensign', 'Red Signal' etc.). k. Names duplicated in closely related groups. l. Names of cultivars of hybrid origin formed by combining parts of Latin epithets of the parent species.

To the frequent question of what happens to violators of the Code, the answer is, nothing. There is no enforcing agency. There are no penalties, as such. There is, however, the moral responsibility of organizations to consider the Code, to determine whether they will endorse and adopt it, and whether they will ensure that its directives will be followed in their own publications and such registrative activities as each may pursue. If this is done, only acceptable cultivar names, and their cultivars, should be admitted in their official shows, should be accepted in completion for any award, or should be accepted in advertising copy.

Since the American Peony Society has adopted this Code, its provisions will be followed as strictly as may be possible. All originators of peonies and any others who may have the privilege of naming cultivars (varieties) are asked to get a copy of the Code and follow it. Otherwise much confusion and trouble may be occasioned by violating its rules, regulations and recommendations.

Mr. Peyton said it in 1945. — We say it now.

"Truer words were never spoken"—Editor.

A very familiar note runs through all the BULLETINS beginning with No. 1. That is the request for articles. This will probably continue for as long as the BULLETIN is published, but you can do a lot about it by resolving to send in every year your experiences and any other information that may be of value to the members. Then we would have plenty of material to choose from, and if all could not be published a condensed record of performances at least could be compiled. We would like to have these reports from every section of the country and Canada. There are fine collections of peonies in almost every State in the Union with the possible exception of Florida. Why are the owners so chary of telling us about them? Surely you could give us an hour or two once a year and let us know how they are doing. Many say they cannot write. That makes no difference. Send us a report, and we will edit it for you if it needs it. Only by getting such reports can the ultimate value of a variety be judged. And thus some very definite ideas of which ones do well in each section may be obtained. Think it over, and this coming season write us within ten days after it closes for you and give us your experiences. Only by having articles to publish can we make the BULLETIN a success. Do not be bashful. Send them in.

PUBLICATIONS

The Peonies, edited by John C. Wister (1962). Published by the American Horticultural Society, Wellington, Mt. Vernon, Va. 22121. 220 pages, information on Herbaceous, Tree and Hybrid Peonies. Many techniques of growing, propagation and breeding. A must for every Hybridizer. Price to Members, Clothbound \$3.50, Paperbound \$2.50.

Peonies Outdoors and In by Arno and Irene Nehrling (1960) 288 pages containing information in all phases on the herbaceous and tree peony. Society members \$4.95.

Send check or money order for the above literature to American Peony Society, 250 Interlachen Road, Hopkins, Minnesota 55343.

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