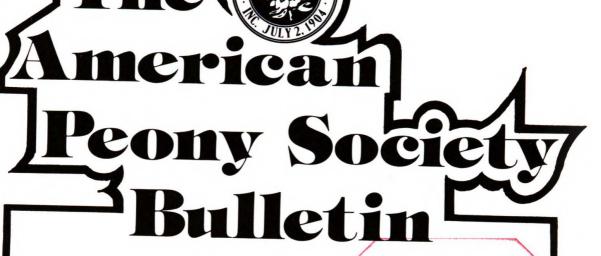


DECEMBER 1991 NO. 280



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Karen Gray — William H. Krekler, 1965

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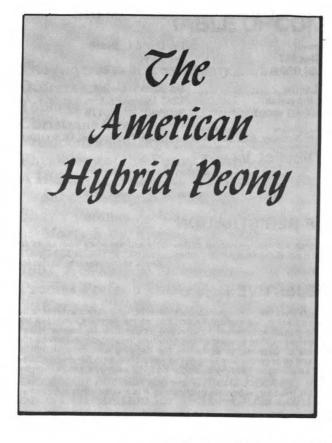
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The department was formed to properly supervise the nomenclature of the different varieties and kinds of peonies. All new varieties should be registered to avoid duplication of names. Greta M. Kessenich, Secretary

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.

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The By-Laws state: All reputable persons, professional or amateur, who are interested in the Peony; it's propagation, culture, sale and development are eligible for membership. Dues are as follows: Junior or member family.....\$ 2.50 Single Triennial..... 20.00 Commercial membership 25.00 Family Annual..... 10.00 Family membership, any two related members in same household......One Bulletin Junior membership, any age through completion of high school.....Separate Bulletin

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PRESIDENT'S MESSAGE

As I write this, memories are still vivid of my wife's and my first trip to California in September, and all the interesting things we saw, and experiences we had, in three weeks and 2500 miles of touring the state.

For me the most powerful, the most unforgettable, the most evocative image is that of puny man standing in the presence of the giant redwoods of the John Muir National Park, and the sequoias of Yosemite and Sequoia National Parks. The grandeur of these magnificent, stately living organisms, the patience evidenced in their continuing existence, their ability to adapt to their special locations, the withstanding of the challenges of fire and climate for millenia, was truly awe-inspiring.

And yet, while responding to this experience, I found myself thinking of our favorite flower, the Peony, hardly comparable in size, but also present on earth for 50-million years, renewing itself annually with amazing vigor; not being cut down now and destroyed by its only enemy, Man, as in the case of the Redwood and Sequoias, but improved every year by Man in cooperation with Nature, with new and unimagined forms of beauty. Both the peony and the giant trees share the same mysterious power over our emotions and imaginations when we stand in their presence—surely intimations of something greater to come.

Enough of philosophical musings. By the time you receive this, the Christmas season should be upon us, the peonies long since put to bed, and our sugarplums will be visions of beautiful blooms to come in 1992.

Christmas Greetings to you all, and Best Wishes for a bountiful 1992.

Robert F. Schmidt, President





PHYSIOLOGY OF THE PEONY PATCH

by J. Franklin Styer, PhD.

After eighty years of growing peonies, I may be able to help younger gardeners in some way. My father, Jacob Styer, sent the first cut peonies to the New York market in 1900; the dealers threw them out because there was a rule against outdoor-grown flowers in general, to protect the greenhouse people. When they bloomed the next year he sent them, free, to the Atlantic City hotels. That created a demand in New York retail stores—Styer's peonies have been sold in New York every year since.

I believe that the same history has grown in Chicago concerning the Klehm company.

The common peony, Paeonia lactiflora, was brought from Chinese gardens to France and England in the early 1800's; not from the wild. Nurseries there sowed seed and added much better cultivars to their lists by selection. The names of those generally indicate whether they came from France or England; they became common in the United States by 1900, the French becoming adapted best in a belt from Massachusetts to the Dakotas south to Virginia and Missouri, and the English in the northern part of that belt.

Styer's has a group of old cultivars with some grown from its own seedlings, totaling about forty. Its fields are in New York, Pennsylvania, and Virginia (where the list is reduced as I will explain). To get a steady production of flowers over a long period, different locations and soils have been necessary and the operations have been often. But each planting has generally been in production ten years. One needs a basic knowledge of at least a hundred cultivars. There is also a nursery producing new stock of all cultivars.

The peony lives mainly underground, having two parts: a root system (extending up to ten feet), supporting a small crown of stem tissue, neither of which is woody. The crown expands horizontally by buds which form in late summer and which grow into upright annual stalks in the following year, during which the new buds form on them at or near the ground level. Each stalk bears a flower at the tip and lesser flowers in the axils of some upper leaves.

Leaves feed the plant, working in the day. The roots expand and store sugars and starches. But a more complicated chemistry also exists. A very unpalatable substance is formed, to the result that no peony is ever eaten by any animal. We are especially interested by another product, however, which affects growth. This is a sort of plant messenger which can stop growth; it is formed at night, moves through the plant, and is destroyed by day. This chemical, or plant hormone, begins after June 21 to accumulate, and does stop growth in a few weeks time. The result is called dormancy.

In the process the crown does produce the buds (or "eyes") for the



next year's growth and the upper stem does produce seeds, but these features become dormant. Roots are not affected. The chemical functions of leaves continue also.

It is important to understand this, for it affects the handling of nursery plants. The roots remain active. The crown produces eyes and they may slowly grow through warm weather but are retarded. The seed becomes a small plant lacking all roots but rudiments, and is highly dormant. The leaves continue to work, but may be removed any time after July 15, or thereabouts. At this point the plant may be dug and divided.

There is an interesting side issue. The stem tissues remain alive up to the dry level of the ground and often form the eyes at that point, not on the old crown. If peonies are covered with too much soil they will grow up through it by this reaction, creating a new crown level. Dormancy also contributes frost resistance to all tissues. I have never seen a peony winter-killed; the old stems are killed by the first freeze, just to the eyes. The crown and roots are able to resist cold down to far below minus 40 below F.

Dormancy is broken by a most interesting condition. The crown must be subjected to a temperature of 30 to 40 degrees F. for 700 hours. This is variable, for various cultivars are found to differ from this average. If a cultivar was introduced from a location, it will almost certainly succeed where the winters are the same. But, on the other hand, a Minnesota cultivar may fail to break dormancy in Georgia.

For my Virginia fields I have tested all cultivars; for example, we have failed to produce flowers from M. Jules Elie. If you wish to test, set a refrigerator at 32F and put in four divisions (keep moist), removing at intervals and planting. I have been called by several people to explain why peonies planted in the Fall had come up from the ground at once; the reason for this was that the divisions had been stored in cold storage, and dormancy had been broken.

The peony has a weed problem. The species must have seen few weeds in the Chinese mountains, and their roots cannot compete. Well, it has a long dormancy; the stalks may be cut to the ground in August, and after three days the land may be treated with herbicides which is completely ineffective underground. And this may be repeated when weeds become green, until the peony breaks ground in the Spring.

Certain methods of handling peonies may be suggested to the retail nurseryman. The bare division should be carried in a moist peat or shavings at a temperature above 40F and below 50F. If one desires to sell peonies in containers, I may say it is difficult; the root system is not dense. But one way is in use. The two- or three-year plant is lifted in the Fall and all roots saved, then set immediately in a plastic pot of the right size in a very organic mix. Stems are



removed to soil level. The plant is stored or kept outdoors to break dormancy, and sold even in bloom. The purchaser must be advised to set the pot in the appropriate hole and the plastic removed down to the bottom but left intact across the bottom.

The plant may be grown in a soil well fertilized with phosphorus so that it may not need addition for three years, and then fertilized the same as the rest of the garden. But the soil must not be acid. We have always been liberal with limestone; there is no limit to limestone.

The customer may well be reminded that the peony is there for forty years.

A HISTORY OF FERTILIZER

by Dr. 'Jake' Tinga, University of Georgia Nursery Business Grower, Clearwater, Florida

('Jake' Tinga teaches Horticulture at the University of Georgia and has passed his thoughtful observations on to *NURSERY BUSINESS GROWER* readers for a number of decades.)

There is a lot of good chemistry in today's fertilizer technology. But I want to start with a historical view. I will start by saying that in most of horticulture—and especially in field nurseries—fertilizer and lime are the cheapest inputs that give the best outputs of all the factors of production. Marketing is probably the least efficient. 10-10-10 is the most efficient. But let us go back in history maybe 5,000 years. The Persians noted that near pigeon roosts the grass grew greener. Over a period of time they developed this idea. Finally they had a silo about 30 feet high and 20 feet across. On the inside of this structure they built ledges for pigeons to roost on. They ate the squabs, but they had a wonderful by-product, manure droppings and straw and feathers. A few shovels full of this good stuff would be put in a hole in the ground. This was covered with a mound. manure would warm the cool soil of April. On this they planted melon seeds. In about 60 days they would have fruit fit for a king. In fact, the king would send a melon watcher. And at the right moment—not too green, not too ripe—he would bring it to the king.

N-P-K Development

The Near East people found that goat, sheep, camel and elephant droppings made a good supplement for vegetables, fruits and flowers. Even today, in Europe, fertilizer is spoken of as manure. So animal agriculture became a vital part of plant agriculture. About 1,000 years ago, this was well established in Europe. A farmer's wealth was measured by the size of his manure pile in March—just before it was carried into the field. Soon it was found that when a little phos-



phate rock was thrown in with the manure, even better crops could be grown. Most people burned wood in those days long ago. What to do with wood ashes? It was found that wood ashes would make the garden grow better too. This is because ashes, when soaked in a pot, had a soluble salt in the juice. This was primitive potash also called Kainit in German, now represented by the chemical symbol K.

Now we know that the manure was rich in ammonia, the rock had phosphate, and the wood ashes had potash. These are the three symbols on every fertilizer bag in the garden center N-P-K - 10%-10%-10%. Prior to 1776, manure and compost and wood ashes were the primary fertilizer ingredients.

George Washington was a successful farmer before 1776. They used oyster shells to fill in the mud holes in the horse and wagon roads. Some of his tenants observed that pasture and wheat grew better near the road. It was not long before they were carting oyster shells into the fields. In those days, they made cement and plaster by cross piling logs and oyster shells, and then setting the pile afire. This was caled burned lime or quick lime. They had heated the CO2 out of CaCO3 and left CaO. This was not only rich in calcium but was readily available. It reacted with the soil this year. Oyster shells or lime took four or five years to show their effect. They were slow to be available in the soil.

There is a limestone called Dolomite. It also contains magnesium, as in milk of magnesia. All of the soil in the southeast is short of magnesium. So Dolomite furnishes both calcium and magnesium. And, more important, it complexes with iron and aluminum and makes them less toxic. The latter two are common in soils and at 6-12 inches deep in wet weather they are short of oxygen and become toxic. Lime and gypsum will sweeten the soil by removing the acidity.

Plant A Fish

When Captain John Smith landed at Jamestown in 1607, he wrote to England about a funny habit of the Cherokees. They gardened with corn and pumpkin and beans. But under every hill they planted a fish. The original organic gardeners. This furnished about 16 elements necessary for plant growth. And their gardens were good.

One hundred fifty years ago, the cotton gin was developed. This meant that larger-scale farming was possible in the south. But there was not enough manure for 100 or 1,000 acres. This was a challenge to the fertilizer people.

The Daniel Boone people used the slash and burn method. They saw the Cherokees use that, and also the black people from Africa used that method back in the old days. This method of cutting everything down and setting fire to it was excellent weed control. It also added a lot of wood ashes, and there was a lot of wood mold or com-



post left on the soil, especially if the burn was not during a dry spell. Then in 1829 gold was discovered in Charlotte, NC. A U.S. Mint was established, and 10,000 people came into the area—America was growing and prospering.

Ten years later gold was discovered in north Georgia, and 20,000 fortune hunters moved there for the yellow metal. In 1849 gold was discovered in California. There was no railroad. There was no Panama Canal, so the route of choice was around the tip of South America by clipper ship. Food, furniture, and men had to go to California by ship. The ship was empty on the way back, so the shippers were looking for a load to go back east.

The Discovery of Guano Fertilizer

With the cotton growing going great guns in the southeast, there was an increasing need for fertilizer. Some skipper heard that the guano bird, kind of a sea gull, roosted on the desert islands west of Peru in the Pacific and on the route of the clipper ships.

What they found was incredible. The bird manure was 15 to 50 feet deep and miles long. A million years of digested fish and excellent high-nitrogen fertilizer. Just right for the cotton planters. The Norfolk Guano Company and the Royster Guano Fertilizer Company were organized, and provided farmers and gardeners with this smelly compost for 100 years. It was mined by coolie labor and moved by sailing ships.

New Fertilizer Materials Discovered

Then another event took place. A salt on the Chilean desert, where there is only one inch of rain every other year, could be scooped up on the surface. It was 16% Chilean nitrate of soda. About twice the nitrate content of the bird manure. So it made a hit with the farmers and landscapers. At first it was mined on the surface; then more elaborate mines were established. But it still went by sailing boats on the return run from California.

Soon after, the route was improved. The Panama Canal was opened in about 1910. This greatly decreased the distance and the great loss of ships around Cape Horn. And there was more fertilizer at a cheaper price.

And the railroads were going to California. This helped to develop the country and the fertilizer mining interests also. It was discovered that Carlsbad Caverns in New Mexico was a solid mountain of potassium sulfate, a valuable fertilizer material. It was discovered that the backbone of Florida was phosphate rock. When mixed with a little sulfuric acid, it became super phosphate, a valuable fertilizer material.

Then in 1932 we had the Great Depression. One of the recovery programs was the T.V.A. The result was cheaper electricity. With electricity and a few cheap ingredients, ammonium nitrate and calcium nitrate could be made. These were high-nitrate, lower-cost mate-



rials. This greatly helped farmers and nurserymen and landscapers. Nitrogen is the most expensive fertilizer element, and it leaches out of the soil readily, so a cheap source was a great advance.

Modern Developments

In the last twenty years, we have had other important developments. Liquid feed, such as 20-20-20, from purified chemical compounds can be applied through the irrigation water. This is so popular that EPA is concerned about the outflow of nitrate from nurseries that causes problems downstream from the drainage area. This fertilizer-rich creek water is in stark contrast to nutrient-poor soils of 100 years ago. The other developments still going on, in contrast to the rapidly available materials found in liquid feed, are the slowly available fertilizers. Nitroform has to be dissolved by bacteria in the soil. Osmocote has to dissolve out of a plastic pellet. Sulfur coated has to dissolve out of a pellet.

In almost every kind of hand application of mineral nutrients (the modern name for fertilizers), the cost of labor is more expensive than the cost of the material. So a lot of techniques have been developed to save labor. For example, if pellets are mixed with potting soil and the nutrients will last for nine months, you almost eliminate the labor application problem.

Fertilizer—use it wisely. Not too much—not too little. And be sure to check for minor elements!

—Submitted by Don Hollingsworth

★ ★ ★

SHOWY PEONIES ANCHOR A GARDEN (FALL IS BEST TIME TO PLANT THESE BEAUTIES)

by Marty Ross, The Kansas City Star

Add peonies to the list of flowering plants that thrive on neglect—and do not neglect to add one or two to the garden this Fall.

Roots are available now. They should be planted before the end of October for bloom next Spring and years to come.

Don Hollingsworth of Kansas City, North, has grown and hybridized peonies about 25 years. Over the years he developed an interest in "choice" hybrids and tree peonies, which are not trees at all but woody shrubs that lose their leaves in the Fall and bloom in early Spring, before the buds have swelled on fluffy garden peonies.

Hollingsworth's kitchen counter is stacked with peony handbooks and catalogs. He has a collection of peony pictures in slide trays in the living room. In the basement, two desks are piled with peony literature, and peony seeds in numbered batches soak in plastic cups in an old sink.

Although Hollingsworth is an expert, he says it doesn't take an expert to grow peonies: old plants bloom without special care. But



good horticultural practices will bring plants to perfection. Most important are proper plant and site selection and good soil that drains well.

Hollingsworth doesn't coddle his plants. When he develops new varieties, hardiness is important. A plant that blooms only two out of four years is not performing well, he says. He lost several hundred peony seedlings one Winter, leaving a small group of survivors that pass his hardiness test. "Those plants are as tough as nails," he says.

Scott Reiter, the groundskeeper at the Linda Hall Library, takes care of a collection of tree peonies that was started about 1970. Reiter describes the fancy peonies in the library garden's collection as "a little more distinctive" than plants sold at garden centers labeled simply "pink" or "white." The unnamed varieties might be "real eyecatchers," he says, but the named varieties will be even more attractive. "They are just better quality," Reiter says.

They also can be expensive. Named varieties of tree peonies can cost up to \$70 through mail-order catalogs, but generic plants can be found in Kansas City for about \$10. Hollingsworth recommends inexpensive plants for new gardeners.

"You ought to learn about something as cheaply as possible," he says.

Peony handbooks say the plants should never be moved, but Hollingsworth has moved his plants often. As his collection outgrew his garden, many plants were moved to his farm at Maryville, Missouri, where he has a peony nursery. One tree peony that grew near his house was moved three times, and Hollingsworth says it bloomed better than ever after the third move.

Reiter also says peonies can be moved successfully. "If you're doing it right, go ahead and move it," he says.

Peonies are said to like full sun, but a location that gets strong, indirect light is fine, Reiter says.

Patty Hart, an Independence gardener who is a flower-show judge and designer, uses peonies in arrangements, in bouquets of 10 or more flowers and in abstract "creative" designs that may feature just two blooms. Peonies are versatile cut flowers, Hart says.

"A peony has texture and color and blends with most anything. It's showy and holds up well. They just have a lot going for them," she says.

Hart does not grow "choice" peonies.

"Mine are just basic, red and white. I grow old-fashioned varieties," she says.

Garden peonies bloom in May in the Kansas City area. Tree peonies bloom earlier, usually in April. The season can be extended to about eight weeks by planting early, mid- and late-season varieties, but flower arrangers have another trick.

"I just wrap them and put them in the refrigerator," Hart says.
"You can hold that blossom for about three weeks."





REGISTRATIONS

CHRISTOPHER'S CORAL (Granville Hall—Rt. 6, Box 7365, Gloucester, Virginia), Sept. 21, 1991.

Seedling #1-9-SC-CC, single lactiflora. Parentage: Krinkled White X unknown. First bloomed 1989. The large bloom opens deep coral and after a few days fades to lavender. It holds its color best in partial shade. Good stem strength; extremely vigorous. Mid to late season of bloom. It has pollen and seeds. The special merit of this plant is that it yields a large volume of both roots and bloom. A single root yielded nine blooms when it first bloomed in 1989.

PINAFORE (Myron D. Bigger—201 N. Rice Road, Topeka, Kansas), Oct. 5, 1991.

Seedling #1-84, parentage unknown. Japanese-type. Color: old rose to ashes of roses; all red color. A dainty flower, with good stem strength. Height about 30 inches with good clear foliage.

TOPEKA STATUE (*Myron D. Bigger*—Topeka, Kansas), Oct. 5, 1991.

Seedling #7-65, parentage unknown. This light pink to white Japanese-type flower is a large goblet form with a yellow center. Height about three feet with stiff stems. Good foliage.

TOPEKA MIDNIGHT (Myron D. Bigger—Topeka, Kansas), Oct. 5, 1991.

This flower was found growing in my seven-acre field. No seedling number. This peony is classed as a deep dark dark red. Flower, full double. Good stem strength and nice foliage.

BLUSHING PRINCESS (A. P. Saunders Nursery).

Seedling #16350 F3. Hybrid, blush pink, semi-double. It has stamens, pollen and seeds. Most reliable. Excellent substance, 32 inches in height. Fragrant, early to mid season bloom. Large medium green foliage. Sometimes the flower has so many petaloids in the center that it is close to double. This seedling came via the Reath Nursery. It was named by David Reath and registered by Caprice Farm Nursery, August 15, 1991.

* * * * *

If you cut a tree, plant a tree.
It is nature's replaceable energy.



1991 — A SEASON TO REMEMBER!

Ned Bayley, Silver Spring, Maryland

For several years I have been working toward two goals for my peony enterprise: cut-flowers for Mother's Day, and commercial florists as customers. During the 1991 season, both of those goals were realized.

Starlight produced the first blooms on April 20, and was soon followed by Nosegay, May Music and Early Scout. By Mother's Day more than fifteen varieties were blossoming, VE varieties I had purchased three years ago. Only a few of them were prolific bloomers, but they gave me confidence that with still more plants I could let my customers know that I had something unusual for a Mother's Day bouquet.

As I reported in Bulletin No. 270, my early attempts to sell cut blooms to commercial florists were discouraging, and I quit trying. I concentrated on pleasing customers who came to the gardens for U-select I-cut sales.

Then two years ago, a florist, who specialized in decorating for parties and weddings, came out to the gardens and bought over a hundred blooms. She was thrilled with them. She was out of town the next season and didn't come back, but another party decorator bought blooms. This year the original buyer besieged me with calls from the beginning of the season, "When would I have blooms for her?" and "Could she come back for more?"

Not only did the first buyer return this year, but with no advertising, requests came in from others for flowers at weddings and graduations. Because Greta Kessenich gave her my name, a lady drove the fifty miles from Annapolis to buy blooms for her daughter's wedding. Before the season was finished (and extremely hot weather shortened it by about ten days), I was receiving more calls for blooms than I could possibly fill. Wholesalers were calling me to provide numbers way beyond my supply. I had to be careful not to disappoint my regular individual customers.

So it was a good season—a season that convinced me that the market for peony blooms in central Maryland is far from filled. The sales could start before Mother's Day and continue into the first week of June; maybe later with refrigeration.

I have had the fun of reaching both my goals, but cannot capitalize on them by increasing my plantings. I see them as a challenge to a young person in this area to add extensive peony production to other horticultural pursuits. With patience and perseverance, a profitable business could be developed.





PEONIES PREFER A SUNNY SPOT WITH GOOD DRAINAGE

(TREAT NEW PLANTS TO A DEEP HOLE, A BIT OF MULCH, LOTS OF WATER)

by Marty Ross, Free-lance Writer—The Kansas City Star

Fall is the time to divide and move established peony plants and to plant roots of new plants.

Scott Reiter, groundskeeper at the Linda Hall Library, said that if he were making a new bed for several plants, he would prepare the ground a year in advance, turning the soil and amending it with "plenty of leaf mold and compost."

For normal maintenance and good care:

- * Peonies like sun, but full sun may be more than enough, Reiter says. Good filtered light or a site that is partly shaded, is fine. Don Hollingsworth of Kansas City, North, recommends planting in an area that has good air circulation but is not overexposed to wind, which can damage flower buds.
- * Proper drainage is crucial. Hollingsworth recommends a "percolation" test: Dig a hole 15 to 18 inches deep and fill it with water enough times that the surrounding soil is wet. Then refill the hole and time how long it takes the soil to absorb the water. Three to 10 hours is about right. If the water is still in the hole after 24 hours, "you have a chronic wetland." Hollingsworth says, "Select another site."
- * For new plants, dig a hole at least 15 to 18 inches deep. This is recommended to encourage good root growth. Space peony plants 3 feet to 4 feet apart.
- * To divide an established plant, use a garden fork and dig around the plant about a foot away from the crown. Try not to damage the roots. Use a sharp knife to divide the crown into sections with five to seven "eyes," or buds, and a good-sized clump of roots.
- * Plant peonies with roots set firmly in the soil and the eyes 2 inches below the surface. Hollingsworth and Reiter mound soil 4 inches over the top of the eyes and let it settle to 2 inches. Plants that are set too deeply may not bloom well.
- * Fertilize peonies in the Fall. Reiter uses a low-dose organic fertilizer. Every three years he works a 2- to 3-inch layer of leaf mold into the soil.
- * Water new plants thoroughly. Normal Autumn rainfall should be adequate for established plants, but if they look limp, a deep soaking will help.
- * Cut off the foliage about an inch above the ground after it freezes. This helps prevent disease. Tree peonies will lose their leaves in the Fall, but the woody stems should not be cut.



- * Plants in their first year may benefit from a light mulch, but established peonies do not need to be mulched in Winter.
- * It may take two years for the plants to become established. The first year is a transition time for the plant, Reiter says, and if you get good, healthy foliage the first year, "that's as good as anything you could want."

"In fact, if a plant seems to have too many buds, I take some off," he says. "Long-lived perennials need to establish a good root system."

—Submitted by Don Hollingsworth

* * * * *

PEONY

The origin of the Peony is lost in antiquity. Poets have sung of its fragrant beauty since the dawn of history. It has come down to us through the ages as a symbol of perfection, each year adding to its beauty. The early Greeks in the wealth of their imagination wove a myth of rare understanding. The story says that a Greek Physician named Paeon, a pupil of Aesculapius, a famous doctor, miraculously cured the wounds of Pluto. This aroused the jealousy of Aesculapius, who murdered Paeon. Pluto, however, did not forget his friend and the marvelous healing of his wounds, and as a token of his regard caused him to be transformed into a flower of rare beauty. This flower was named Peony, and through it, the physician, Paeon, gained immortality. He still lives in the gardens of every flower lover in the civilized world.

CULTURE—This flower is the most easily satisfied of all the perennials as to soil and culture. Do not let a lack of good soil prevent you from planting Peonies. They thrive anywhere and under any conditions where drainage is reasonably good. Do not conclude, from that, however, that you can neglect them and still receive maximum results. They respond wonderfully to good treatment and repay a hundred-fold, any effort to make their lot pleasant. The Peony is a gross feeder and will do best in a rich, deep, rather moist, loam. Some growers advocate the mixture of well rotted manure in the soil in which the root is set. This is still a much mooted question and we are inclined to advise the careful use of manure in contact with the roots. Plant roots of from three to five eyes setting them deep enough so that the top eye is about two or two and a half inches below the surface of the soil, by a careful selection of varieties. Peonies can be made to bloom from late May throughout the month of June. There are a host of varieties and types from which to select.

CLASSIFICATION—Peonies are divided into types, each of which has merits of its own that makes it a difficult task to say which is the most desirable. Were we to say this one is the finest and



that one the least attractive and then ask a dozen flower lovers to corroborate our judgment, we would find about half of them reversing our decision. Let each one judge for himself.

The types are as follows, classified as to their completeness of flower development: Single, Japanese, Anemone, Semi-double and Double.

SINGLE TYPE—This class includes all single Peonies. The bloom is composed of a single row of petals with the center filled with pollen bearing stamens and seed-bearing carpels. The stamen is the male organ of the flower and the carpel the female.

JAPANESE TYPE—In this class the doubling process has just begun. The filaments of the stamens have widened and the anthers or pollen bearing part of the stamens, have become monstrous. The primary or guard petals are the same as in the single. As long as the petaloids (stamens changing to petals) are all tipped with vestiges of anthers, the flowers are to be considered as the Japanese type. "Mikado" is an example.

ANEMONE—A step beyond the Japanese type in the doubling of the bloom. The filaments of the stamens have become widened to narrow petals which occur uniformly throughout the center of the bloom. The vestiges of anthers have disappeared but the central petals are still too narrow and short to allow these varieties to be classed as double.

SEMI-DOUBLE—This class is formed to accommodate certain varieties which, instead of widening their filaments uniformly until a petaloid is formed, produce petaloids in all stages of transformation at the same time. They are usually loose in structure and are especially common in dark red kinds. Pollen bearing stamens are visible throughout the bloom. The guard petals may or may not be well differentiated.

DOUBLE TYPE—In this type the next step toward complete doubling has been taken. The petaloids have become wider than the Anemone type and no anthers can be found scattered through the bloom. The central petals, while approaching the guard petals in form are very nearly uniform throughout the bloom with no color in evidence.

Plant the roots about three feet apart in a bed or border. For a hedge and quick massing results it is well to plant them closer although eventually the peony will occupy all the space when set at three feet. By a judicious choice of varieties they can be made to bloom through a period of three or four weeks. For a hedge, or a mass grouping, we recommend the use of a single color.

In caring for the plants, above all things water the ground and keep it loose, especially during the blooming season. Choose the best varieties in the types you like best and buy from a reliable source.

—The House of Gurney, Inc., Yankton, South Dakota (No date on a very old Catalog)



SOIL IMPROVEMENT

Bulletin 209

Ben Vance, Extension Horticulturist Iowa State University of Science and Technology, Ames, Iowa

A good garden soil is high in organic matter. As crops are grown, the organic matter level of the soil becomes progressively lower unless organic materials are applied. Remember that commercial fertilizers are not a substitute for organic matter. Both are needed for a fertile, productive garden soil.

Organic matter improves the structure of the soil and makes it easier to till. This is especially true in soils that tend to pack badly and crust over. Organic matter increases the water-holding capacity of the soil, and it is essential to the development of beneficial microorganisms that are so important in plant nutrition. The organic matter also is a storehouse for certain plant nutrients. Leaves from trees are excellent as are lawn clippings, peat, sawdust, straw and spoiled hay and silage. Coarse, fibrous materials may occasionally cause a temporary lowering of the nitrogen level. It is advisable to apply a nitrogen-carrying fertilizer before turning under refuse of this kind. Apply 10-10-10, 12-12-12 or other similar complete commercial fertilizers at the rate of 15 or 20 pounds per 1,000 square feet to prevent any deficiency. Ammonium nitrate at 3 pounds, or 6 pounds of ammonium sulfate for each 1,000 square feet can be used instead of the mixed fertilizer. Fall is the preferred time to plow or spade under organic matter. This allows partial decomposition of the material, and it is quickly available the following growing season.

Green manure crops are excellent soil builders, too, and will supply satisfactory amounts of organic matter. Rye seeded at the rate of 3 to 5 pounds per 1,000 square feet or annual ryegrass at 2 to 4 pounds may be used. Seed sown near the middle of August will normally make sufficient growth before cold weather. If soil erosion is a problem, rye could serve as a winter cover crop and be turned under the following Spring.

Commercial fertilizers are effective and economical materials to supply some of the mineral elements used by plants. A "complete" fertilizer contains nitrogen, phosphorus and potash. For example, a 5-10-5 fertilizer contains 5 percent available nitrogen, 10 percent available phosphoric acid and 5 percent available potash.

Several other elements are necessary for plant growth. These are called the trace of minor elements. Iron, boron, manganese and sulfur as well as others are in this class. Many of the commonly used commercial fertilizers contain the trace elements as impurities. Animal manures also contain a number of trace elements.





"BLOOMING MEMORIES"

by Pamela Bockey, Executive Director Van Wert Peony Festival, Inc.

As I look back on my childhood, I now realize just what a wonderful opportunity I experienced as a youth. I was privileged to have been raised right in the heart of peony country. My childhood home was located in a rich agricultural area of Northwestern Ohio known as Van Wert county. For many years our community was known worldwide for its beautiful peonies and iris. I would like to share some of our history with fellow peony enthusiasts.

Van Wert's peony story began around the early 1900's when a lady by the name of Miss Clara Anderson began to grow a private garden, including some peonies. Soon a friend of hers, L. J. German, became interested. He visited Sarah Pleas of Spiceland, Indiana, and brought back several plants. Mr. German had a great appreciation for beauty in every form of nature and expressed it devotedly. As time passed, he started the Wahnfried Gardens. Lee Richey Bonnewitz was a colorful person. He took blooms to the New York exhibition. During 1922, Bonnewitz imported new peonies from England and France. He grew the Jubilee peony which was hybridized by Mrs. Pleas in 1908. Jubilee was a breath-taking snow-white double with shadings of color. Two locally grown varieties were the Vera Wassenberg and the Bu-tee.

Mr. Charles Wassenberg was perhaps the most well-known flower grower of our community. He began his gardens in 1924 and they continued until 1959. Wassenberg won the Gold Medal of the National Peony Show of 1931. During the 1950's his gardens were known as the best display of blooms in the world at that time. He soon outgrew his South Washington Street address, which today is the Wassenberg Art Center. Mr. Wassenberg bought a farm on the east side of the county. There he had over 500 varieties of peonies and equal amount of iris. It was a beautiful 30 acres.

The most lovely gardens belonged to H. T. Beckman. This was the Auglaize Gardens located at the present site of the Starr Commonwealth for troubled boys. This estate resembled European gardens. It was in and near a woodland setting and was beyond description. Other area growers were Ben Ireton, Harry Eikenbary, A. J. Clymer, Chin Gamble and John Webster. At the height of this era, Van Wert county had over 45 acres of private and commercial gardens.

At the suggestion of former Mayor C. D. Pennell, a Peony Sunday, and a festival was begun. This started in 1932-41 and again 1955-60. The event included a large band show, two parades, a queens contest, and many other activities. It really turned into a very large event visited by folks from all over the country. They sent



flowers to the White House to President Roosevelt. The Ohio legislature declared that Van Wert was to be known as the Peony Capital of the World. This was a very unique experience for the folks of that time. C. D. Pennell continued his devotion to the peony for many years. He was very involved with the American Peony Society.

The days of Van Wert's glorious flower fields have since diminished. There are still several flowers along our private homes, and some public places. The loveliest of these beds is located at our historical Van Wert library. The Brumback Library is the oldest county library in the United States. We are putting on a new section beginning this summer. It will be keeping in style with the medieval structure, and will have more peonies planted when it is completed. The peony will not fade away entirely. Thanks to the interest of some local peoples, a new era of memories are beginning today. Through a generous donation, new and shared plants will once again line the streets and roads of Van Wert. This past Fall we have knowledge of approximately 100 new plants and divisions being established along our main streets in this community. It will take several years before these plants will be up to full bloom, but we do invite anybody who should be of a mind, to come visit our Peony City. Starting June 6 & 7, 1992, we will be beginning a smaller version of the old festival. It is our hope to be able to once again make blooming memories for a new generation of flower lovers.

(For further information about our past history, visit our local historical museum, The House of Seven Oaks, or contact the Peony Festival-Heritage Days Committee at: Van Wert Peony Festival, 6163 John Yoh Road, Van Wert, Ohio 45891; phone: 419/238-9089).

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ORDER FROM: Chris Laning, 553 West F. Ave., Kalamazoo, Michigan 49007

SEED DISTRIBUTION FOR 1991

Lobata seed—open pollinated, from John Cote of Brooklyn, CT P. ludlowii species seed from Mrs. Julia A. Allan of New Zealand lactiflora

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#113 and 114 — Sable x Super "D" F2 seedlings

Quad F3 x Moonrise F3

And a few tree peony seed (suffruticosa)

(Please send \$2.00 to cover packaging and mailing costs).



THE MOMENT OF PEONIES

(All that work and waiting for a week, a day, an hour of glorious excess)

by Jane Kenyon (permission Yankee Magazine)

IT IS THE MONTH OF PEONIES—the week, the day, and the hour of peonies. In late March their red asparagus-like shoots began to push toward the intensely blue Spring sky with its scudding clouds. Through April and May the stalks gained height and turned green; buds formed and swelled tantalizingly. Ants crawled over the veined globes with gathering excitement, and now, at last, comes the hot day after a warm rain when the flowers open. And we are blessed; we are undone by them.

Five years ago we made a big change in the yard here. We dug up the hosta lilies that grew along the porch, which had been planted when three or four large elms grew in the yard, shading the front garden. In the years since Dutch elm disease destroyed the trees, the hosta had been getting too much sun, burning up every summer.

So we moved the hosta to a raised bed under the maples (where the hummingbirds continue to patronize them), and that Fall I planted seven peonies in their place—Festiva Maxima—from my favorite mail order nursery in Connecticut. I dug labor-intensive holes for them, taking out the subsoil and replacing it with compost and peat. I added prodigious amounts of bonemeal and mixed it up with the compost. I did everything right for these flowers, mulching them after the ground was frozen, fertilizing them in the Spring when the shoots had grown a couple of inches, even drenching them with Captan, against fusarium wilt and against my principles. The first year they made a modest but respectable beginning, with three or four blossoms to a plant, and every year they have gained in stature.

This year the plants exceed every expectation. Suddenly they've come into their full adult beauty, not strapping, but statuesque—the beauty of women, as Chekhov says, "with plump shoulders" and with long hair held precariously in place by a few stout pins. They are white, voluminous, and here and there display flecks of raspberry red on the edges of their fleshy, heavily scented petals.

These are not Protestant-work-ethic flowers. They loll about in gorgeousness; they live for art; they believe in excess. They are not quite decent, to tell the truth. Neighbors and strangers slow their cars to gawk.

Yesterday violent thunderstorms battered Hillsborough county, to the south, and I heard on the car radio that three-quarter-inch hailstones were falling there. All I could think about was getting home to my peonies. I floored it and imagined myself saying to the man in the broad-brimmed tan felt hat, "But, officer, this is an emergency!" We in Merrimack county had no hail, as it turned out, but rain bent the heavy-headed flowers over their wire supports and



shattered many blossoms.

This morning petals whiten the ground as if snow had fallen in the night or as if a swan had molted in the garden. The smaller, ancillary buds have yet to bloom, but the great display is over. Some gardeners pinch out these small side buds so that the plant's energy will go into a few huge blooms, but I never have the heart. At least my little ones are left—my debutantes.

I suppose if I had to declare a favorite flower, it would be peonies, and here I find myself in the moments just after their great, abandoned splurge. They seem like the diva in her dressing gown after the opera—still glistening, but spent. "Death is the mother of beauty," the poet Wallace Stevens tells us. Maybe never again will all the elements conspire to make another such marvelous moment of flowers. I'm glad I wasn't away from home or, as the Buddhists say, asleep.

-Submitted by Myron D. Bigger

* * * * *

ORIGIN OF PEONY NAMES

P. Mrs. Livingston Farrand (Nicholls, 1935). Double, brilliant pink of great purity.

Mrs. Livingston Farrand (1879-1957) was born Daisy Carlton in New York City. Her father was an opera star, a member of the D'oily Carte. She grew up in that environment, with no permanent home. She married Livingston Farrand, who was president of Cornell from 1921-1937. Col. Nicholls was from Louisiana and was head of the ROTC at Cornell. While working with peonies, he also had a great interest in Louisiana Iris.

Since he was fond of Daisy, he named the peony for her.

Cornell is currently bringing back the President's garden which was designed by Daisy Farrand. Paeonia 'Mrs. Livingston Farrand,' is in the first bed of the peony garden at Cornell.

* Information sent by Mrs. Ralph P. Engle, Jr., Brookline, MA. (Daisy was my great Aunt—my grandmother's sister.)





HISTORY, MANAGEMENT AND RECOMMENDED VARIETIES OF PEONIES IN THE PEACE RIVER REGION

John G.N. Davidson, Agriculture Canada, Beaverlodge, Alberta 1991 (rev.). NRG 90-09b.

Introduction

As you drive into the main entrance of the Agriculture Canada Research Station at Beaverlodge, located in the Peace River region of Alberta and British Columbia, you pass a long bed of old peony varieties. The bed was planted in 1947, the bushes have never been moved, and they continue to flower magnificently. There is no apparent reason why they should not be doing just as well another 40 years hence.

This bed of peonies is famous in the Peace region as the finest single floral display in the region. There are people who visit the Beaverlodge Research Station (BRS) only to see the peonies, and come every year. At this latitude (55°N) the period of bloom is from the last week in June until mid-July, with later or side blooms lasting until at least the beginning of August.

The bed has received only minimal care. Only peonies are grown in it. It is weeded fairly regularly, bushes are tied up, dead-headed, and cut down in the fall. Fertilizer is applied some years. It has never been watered.

If there is a secret to these peonies surviving and flourishing for so long, it lies in the careful preparation of the bed, and in the lack of competition from other herbs, trees or shrubs. The topsoil type at this location is Black and Dark Grey, a medium to heavy clay, slightly acid, about 30 cm deep. Below it lies varved (layered) clay that tends to be dry and somewhat alkaline. The peony bed, however, was initially dug to a depth of 1 metre, making it a large basin set into the subsoil clay. A substantial quantity of sand was mixed in, altering the texture to a medium clay loam.



The term "varieties" as used in this publication refers to cultivated varieties, or cultivars, and does not refer to botanical varieties.

Climate, chinooks and hardiness

The climate at Beaverlodge falls within the Agriculture Canada hardiness zone 2a, and USDA zone 2. It is, however, a tougher climate than that implies. Beaverlodge is geographically close (ca. 25 km) to the transition to zone 1b. However, there is another factor, not recognized in either country's hardiness zone system, that is perhaps even more critical for winter survival. Owing to its proximity to the Rocky Mountains and to their conformation, Beaverlodge lies in a chinook belt. The chinook belt around Calgary is now world-famous but this northern belt is virtually unknown. A chinook is a strong to violent winter wind that is relatively warm, i.e. near to or just above freezing, and results in thawing and severe desiccation stress on above-ground plant parts that cannot obtain water from still-frozen roots. Chinooks are often followed by an abrupt return to midwinter conditions with temperature drops of as much as 40°C in 24 hours. Although recognized locally since the area was first settled, this chinook belt was not recognized elsewhere until recently. What it does, of course, is add greatly to the already severe winter stresses.

At the time it was planted the peony bed was protected only by one immature windbreak. Other windbreaks were planted at about this period, and the main landscaping of ornamental trees and shrubs was established in the 5 years following. It is now well protected against both the northern cold winter winds and the western warm winter chinooks and summer winds. The windbreaks also maximize the snow cover: the deeper the snow the better the protection against abrupt changes in temperature. In other words, the greatest stress on these peonies occurred during the first few years. The gaps, which occur sporadically throughout the bed, all appear to be failures of establishment during the first 5 years or so. This bed is therefore a wonderful testimonial to the hardiness, toughness and persistence of this most extravagantly floriferous of all perennials.

HISTORY

Beaverlodge Research Station

There is a story behind this peony bed or, rather, several stories. Peony trials were started at BRS by the first superintendent, W. Don Albright and his head gardener, Paul Flint, an ex-Methodist minister, in 1922 with half-a-dozen varieties supplied by the Central Experimental Farm in Ottawa. These trials were gradually expanded to test over 100 varieties by the late 1940's, and continued until about 1965.

Nevertheless, the varieties in the peony bed originated elsewhere. They were donated by Cyril M. Clarke, a private peony specialist, perhaps the most important person in the early culture of peonies in Alberta. The peonies in this bed were chosen by Clarke as the finest in his collection of over 200 cultivars. The bed was planted in the fall of 1947, and for the next 3 years he provided replacement roots for those that had not taken. The occasion for this donation was the creation of new landscaping to accompany building of the Station's first office building.



Accordingly, in 1987 I named this bed the "C.M. Clarke Heritage Peony Collection", and had the Station's carpenter make a handsome sign to that effect. Why "Heritage"? Nowadays the Government of Canada designates every building or tree on federal property as a heritage building or tree if it is 40 or more years old. Once a building or tree has been so designated, it is not supposed to be destroyed or disposed of without the approval of Parks Canada's Historical Monuments Division. So why not peonies also?

Cyril M. Clarke

Cyril Clarke was an interesting and somewhat reclusive person. He was born in 1882 in St. Lucia, BWI, the son of a well-to-do Anglican minister and his West Indian wife, who were able to send him to Oxford University. He served with the British army in the First World War, and afterwards emigrated to Canada. He came to the Peace River region in 1920 and homesteaded near the hamlet of Teepee Creek, 35 miles NE of Grande Prairie. Opinion is divided as to how good a farmer he was, but Cliff Stacey, the second superintendent at BRS, who knew him well, wrote, 'Clarke had a good farm and was a good farmer -- when he could spare time from his peonies.' But he also indicated that Clarke had trouble making his payments, and spent as much as he could spare on buying new peony roots. He was a member of the American Peony Society (APS), and used to contribute scholarly articles to its quarterly bulletins. He built up his collection through its members from all the famous breeders. He also grew fruits, vegetables, shrub roses and other ornamentals, but these have not survived. For example, BRS records show that he supplied day-lily cultivars for trials at BRS from 1932 on, whereas he supplied peony cultivars only from 1938 on. As a scholar, black, and lifelong bachelor, he was something of an enigma to his neighbors. It was said of him that he farmed to survive, but lived for peonies. He grew peonies as a passionate hobby and never attempted to develop a commercial operation, although he gave root divisions to his friends to the end of his life.

As he got older Cyril Clarke grew increasingly concerned about the disposition of his peonies. The first step, as already mentioned, was to donate his favorite varieties to BRS. With this bed well established, he negotiated disposal of the remainder of his collection with the University of Alberta, apparently from a hospital bed. In 1948-1950 he donated over 1500 specimens of about 200 named varieties and his records to the Grounds Department of the University of Alberta, Edmonton. The city of Grande Prairie made him an offer of enough land for himself and his peonies just outside the city, but it was too late and he had to turn the offer down.

Cyril Clarke became highly allergic to peonies, and had to fully cover himself including his face. Late in life he developed severe cataracts and while recovering from an operation accidentally damaged his eyes so that he could no longer read. He nevertheless continued to care for his plants on hands and knees. He had a first-rate memory, besides keeping meticulous records, and in his prime had no labels on his peony beds. He knew each variety by sight and could freely discuss its origin, International



Rating, and special characteristics. He took particular care to authenticate every one, and accepted no identification without checking it unless he had received it directly from the breeder or other acknowledged expert. Many were the specimens purchased from his meagre resources that disappointingly turned out to be synonyms or mislabelled plants of varieties he already had. It was this care and scholarly bent that made his collection so valuable.

Clarke died, therefore, before the university's plants were old enough to bloom and be verified by him. A commemorative bronze plaque was located beside the collection to the north of McKenzie Hall. Some years later the peony collection was moved to another location on campus, and some divisions of the original plants were supplied in 1965 to the university's Botanic Garden near Devon, AB (established 1959). Later, all remaining plants were moved from campus to the Devonian Gardens. During these moves some plants were lost and some labels got misplaced, so that it was necessary to verify all the identities. This proved to be quite difficult because of the inadequacy of early descriptions to differentiate similar varieties, and the infrequency of color illustrations. Consequently, the university collection derived from C.M. Clarke is only a fraction of its original size, consisting of 32 verified varieties.

Bill Foore, Sr.

Cyril Clarke was not the only serious private peony hobbyist in the county of Grande Prairie. He had a rival, Bill Foore, Sr. Foore came to the Peace in 1920 also. His parents had moved back and forth between the USA and southern Canada since the turn of the century but he moved to the northern part of the province. He homesteaded about 15 miles northwest of Grande Prairie. Foore made friends with Clarke and received his first peonies from Clarke. He quickly became an enthusiastic peony grower, and later joined the APS, and obtained plants from much the same sources. He developed a large collection and grew them well, attributing part of his success to the presence of a good windbreak that trapped lots of snow. He grew a show garden along his creek's banks with many lilies, irises and flowering shrubs as well as peonies; a much prettier site than Clarke's flat land. He also held to a somewhat eccentric theory that the Aurora Borealis caused electrification of the snow and that this was highly beneficial to the peonies. The more scholarly Clarke thought that this was 'tripe'! The two did not see eye to eye on this and other matters. Both, however, were fine peony growers, and an edge of competition between them was beneficial to peony culture in the Peace and in the north generally. Note that 3 major peony collections were started at essentially the same time in Grande Prairie county: Clarke, Foore and BRS.

Bill Foore's property was sold away from the family upon his retirement. The new owners maintained many peonies until they retired. I have briefly examined the original farm, which has changed hands again, and there do not seem to be any survivors, just a few shrubs and one iris. After Foore died, his wife moved the best part of the collection



to Grande Prairie. Her garden is now built over and the collection does not appear to have survived anywhere else.

There is, however, still a peony collection on the farm of one of his sons, Bill Foore, Jr. His wife Lottie took seeds from her father-in-law's collection and established them at their homestead another 10 miles to the north, close to the Saddle Hills. This collection is maintained in healthy condition by their son Wally Foore. He sells cut blooms in season as a sideline to his regular grain farming. Because it is wholly derived from seedlings, Wally Foore's collection is unique; but it is not well known. The Foores have occasionally sold root divisions to friends and neighbors. Six of these ended up in my garden, and put on a fine display visible from my living room. Each is quite distinct, the bushes ranging from 2 ft. to over 4 ft. tall with magnificent blooms above that, and only two resemble at all any of those at BRS.

PEONY VARIETIES AT BRS

Identification and verification

The BRS peony bed consists of 43 varieties in short rows of 3 plants per variety. This conforms to the classic layout used by the APS in its early trials to sort out how many different varieties there really were and how many synonyms. The list of names is to be found in BRS records but not the planting plan. The head gardener at BRS when the bed was planted was the late John Wallace, inducted into the Alberta Agriculture Hall of Fame in 1989 for the many fruit and ornamental varieties he developed both while at BRS and later as proprietor of Beaverlodge Nursery, so I asked his widow Irene to see if she could find a planting plan amongst John's papers. Almost a year later she found it!

Several identification problems were apparent. It seemed reasonable at the outset that rows in which there were still 3 bushes present and the same as each other would be the variety indicated. If only 2 bushes were present and were the same, it seemed more than likely that they also were the variety indicated. So far, everything in these 2 categories fits the available descriptions, although descriptions of sufficient detail have not been found for all of them. That, however, leaves several problem rows in which 2 or 3 kinds occur. Station legend has it that in the early years the gaps that occurred were filled by dividing roots from vigorous plants in the bed. This explains a couple of bushes that clearly come from neighboring rows, and one that is sufficiently distinctive to identify came from a distant row.

While waiting for a planting plan to be found and for descriptive references to arrive, I started taking notes on flower characteristics -- petals, stamens and carpels -- and began to build up a collection of photographs. Scent, leaves, bush size and even fall colors were also used subsequently to establish similarity or dissimilarity of different bushes. An inherent problem is the variability of some cultivars. Whereas the singles and semi-singles such as Cherry Hill, which does very well here, are very consistent, many



of the doubles show great variability from bush to bush, stem to stem, or between the main bloom and side blooms. The degree of doubleness in particular varies enormously in some varieties, and all those officially rated as double are by no means the same. In fact there is a complete range from the truly single with one or two petal layers to the totally double in which all stamens and carpels have become petals or petaloids. A minor complication is that some of the pale colors are stronger in the north than in hotter climates. Thus some of the so-called whites are often pale pink at first, e.g. Madame de Vernéville, or pale yellow, e.g. Laura Dessert.

Old catalogues were searched for information, but the earliest catalogues available dated from the 1950's, and neither descriptions nor photographs were good enough to go beyond determining that a cultivar was indeed a double red and not a single pink, etc. One label had to be discarded: Kelway's Glorious is a double white whereas both plants in that row are red, and distinct from each other. Then I was finally able to borrow copies of the first two manuals of the APS. The first one (1928) is much the most useful as its descriptions are fuller, include indications of variability, and have comments from experts from across the continent. The second manual (1962) has mainly been useful for the date of origin of post-1928 cultivars.

With these sources I was able to make positive identifications on 26 varieties plus 7 probables, and, it seemed, was approaching a complete set of identifications when one discovery opened up new problems. All the varieties on the planting plan are Chinese types, but in 1989 one persistent but non-vigorous plant that usually does not bloom did so, and is clearly a Japanese type, i.e. all the stamens are modified into blade-like shapes instead of being normal or petalloid as in Chinese types. Subsequently, this proved to be Mikado, a well known Japanese-style red; Station records indicate that Mikado and some other Japanese types were grown for several years in BRS trials. Consequently, the remaining unidentified bushes could not be assumed to be one of the varieties on the planting plan but could be anything ever tested in BRS trials. Apart from the abovementioned establishment replacements provided by C.M. Clarke, surviving Station records include no notes on this bed. It may, therefore, take a while to sort out the remaining identities.

The variety collection

After all this, what do we actually have? We have a set of over 40 different varieties that all originated prior to the Second World War, ranging from Festiva Maxima (Miellez 1851) to Marietta Sisson (Sass 1933), see Appendix III. It includes varieties from the most famous breeders of France, Britain and North America from the classic period of peony breeding in the west: Calot, Crousse, Lemoine, Kelway, Dessert, Brand, Shaylor, Saunders, Pfeiffer, Doriat and Sass. Of course, the Chinese and Japanese breeders had been producing cultivars for centuries before. With one exception, the collection is of Chinese-flowered types. It includes the full range of colors, both pure and in mixtures, available in this period, and the full range of flower forms: single, various



degrees of partial doubleness, fully double and ultra-double; open, low crown, high crown, hollow crown and anemone flower shapes; petals and petaloids entire, notched, frilled, fimbriated and frost-edged or silvered; carpels in all colors, degrees of hairiness, and all stages of transmutation into petaloids, and bushes and leaves of various sizes, summer and fall colors. In other words, the collection is wonderfully representative of the first 100 years or so of western peony breeding. Cyril Clarke gave us not just his favorite varieties, but a brilliantly chosen range of hardy and floriferous varieties. It is interesting to note that there is very little overlap between the 32 Clarke varieties surviving at the Devonian Gardens and the 40+ at BRS: only Inspecteur Lavergne, in fact. Over 70 varieties from his collection have survived, therefore.

In the last 15 years we have seen no insect problems and only minor incidences of viruses and Botrytis bud and stem blight. The climate undoubtedly helps in this respect.

The blooming period is basically 3 weeks plus a couple of weeks of stragglers. Marietta Sisson is always the first to bloom and Clemenceau the last. The most floriferous cultivars, at least in recent years, in alphabetical order, have been Cherry Hill, Chestine Gowdy, Clemenceau, Festiva Maxima, Inspecteur Lavergne, Lady Alexandra Duff, La Perle, Laura Dessert, Longfellow, Madame de Vernéville, Madame Emile Debatène, Madame Jules Dessert, Marian Pfeiffer, Marietta Sisson, Monsieur Jules Elie, Red Bird, Reine Hortense, Rev. H.N. Traggitt, Rosa Bonheur, Rose Shaylor, Sarah Bernhardt, and Thérèse. Karl Rosenfield is the most floriferous one in my garden.

Finally, peonies are splendid cutting flowers, both blooms and foliage last well, and have long stalks. Because of their size they require skill in arrangements with other types of flowers, but you can make spectacular arrangements of peonies in both pure and mixed variety groupings. I sometimes enjoy constructing 'superflowers' as much as 2 feet across in which each 'petal' is a full-sized bloom!.

RECOMMENDED VARIETIES

Today, peonies are grown all over the Peace region and up into the Territories, but hardly anyone has more than 4 or 5 varieties. Most nursery catalogues, other than a handful that specialize in peonies, have degenerated to carrying 6 or less varieties. Even worse, many do not even give the names, merely calling them white, pink or red! This is utterly deplorable. There are a few honorable exceptions, however, listed below.

Dr. Bob Harris (retired) of the Beaverlodge Research Station, in his 1967 bulletin summarizing the results of peony testing and management in Grande Prairie county, recommended 49 Chinese and 7 Japanese varieties of *P. lactiflora*, plus 1 which is another species. Only 21 of these are in the C.M. Clarke Heritage collection, the remainder coming from BRS trials.



Accordingly, in the interests of promoting the use of the many fine varieties of peonies that are hardy and productive, I have revised and expanded his list of recommended varieties to include others for which reliable information was obtainable (Appendix I). Sources include both public and private gardens, commercial nurseries, and BRS records. These recommended varieties are fully hardy and floriferous in all the agricultural districts of the Canadian prairies. Note that no information was obtained for the Peace region regarding most modern varieties, and that therefore it was not possible to recommend them. Work is in progress, however, to assemble information for the Canadian prairies as a whole.

N.B. As far as can be ascertained, the great majority of peony varieties released since 1945 have not been tested in the northern prairies, let alone in the Peace River region. Clearly, a great deal of new testing needs to be done.

No attempt has been made to determine current availability commercially of the varieties recommended in the hope that these fine old varieties will be offered to the public again.

Appendix II contains a revised version of Harris' admirably brief guide to management and care of peonies in the north, which should be viewed as a supplement for the north to the APS Peony Manual.

Appendix III lists the peony varieties in the Cyril M. Clarke Heritage Peony Bed.

Selected nurseries in the Canadian prairies offering a range of varieties

- 1. Harrison's Garden centre, Box 460, Carnduff, Sask. SOC 0S0. (306)482-3688.
- 2. Healey, F.P., Oakhill Farm, Box 6, Belmont, MN. ROK OCO. (204)528-3210.
- N.B. Most of the larger peony nurseries in eastern Canada and USA, and on the west coast also offer peony varieties suitable for the prairies. In general, Chinese and Japanese types are always worth trying, and many of the modern hybrids. Tree peonies are generally not hardy, and the Itoh hybrids are questionable or unknown.

Selected References

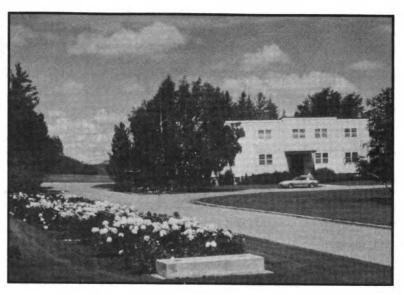
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Acknowledgments

I am indebted to Roger Vick, Irene Wallace and Wally Foore for information and loan of materials; and to Bob Wolfe and Don Woods for reviewing the manuscript. All opinions are the author's.



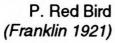
Research Station and peonies planted in 1947/ Beaverlodge, Alberta, Canada





P. Sarah Bernhardt (Lemoine 1906)

All photographs by Dr. John G.N. Davidson; Beaverlodge, Alberta, Canada





APPENDIX I

Recommended Varieties

White Krinkled White, Le Printemps **Pink** Pride of Langport, Avant Garde, Ural (P. anomala intermedia) Red Cherry Hill (in part), Jewel, Peter Barr (x P. tenuifolia)

Semi-double Mrs. Edward Harding, Couronne d'Or Lady Alexandra Duff, Victory Chateau Thierry, Rose White Pink, light Shaylor, A.G. Perry

Pink, medium Ella Christiansen, Phyllis Kelway

Victoire de la Marne Red, medium (silvered) Auguste Dessert

Chinese (Paeonia lactiflora unless otherwise stated)

Cherry Hill (in part), William F. Turner Red, medium dark(semi-single) (semi-double) Longfellow, Hiawatha, Adolphe Rousseau

Double

White (pure white) Festiva Maxima, Rev. H.N. Tragitt (creamy) Le Cygne, Marie Lemoine, Kelway's Glorious.

Enchanteresse (salmon) Solange

blushed (pure white) Madame de Vernéville, Albatre (= Avalanche)

Madame Claude Tain, Baroness Schroeder, La Lorraine, (creamy) Frances Willard

Yellow, light Golden Bracelet, Duchesse de Nemours (anemone) Laura Dessert, Golden Dawn, Primevère

Alice Harding Pink and White (zones) Pink and Cream Chestine Gowdy, Thomas C. Thurlow, Tourangelle (zones)

(petal bases) Thérèse, M. Jules Elie (in part), Albert Crousse Pink, light (no flecks) Lady Alexandra Duff, Phoebe Carey, Minuet, Jeannot,

Marie Crousse, Nick Shaylor

Rosa Bonheur, Madame Jules Dessert, La Perle, (± flecks)

Madame Calot, Georgiana Shaylor, Reine Hortense Pink, medium (no flecks) Marietta Sisson, Edulis Superba, Claire Dubois, Walter Faxon, Souvenir de Louis Bigot

(± flecks) Sarah Bernhardt, Livingstone Pink, dark Clemenceau, M. Jules Elie (in part)

(silvered) Madame Emile Debatène Red, light Dorothea

Red, medium Red Charm, Kansas (anemone) Red Bird

Red, medium dark Richard Carvel, Marian Pfeiffer, Felix Crousse

(± silvered, ± anemone) Inspecteur Lavergne, Karl Rosenfield

Red, dark Philippe Rivoire, M. Martin Cahuzac, Ruth Elizabeth

Japanese (all Paeonia lactiflora)

White Isani Gidui

Ama-No-Sode, Aureolin Pink /yellow

Red, dark /yellow Mikado, Nippon Beauty, Jappensha-Ikhu /buff Some Ganoko

/pink/mahogany Fuyajo

APPENDIX II

Management and care of peonies

TYPES — The dwarf fernleaf peony (P. tenuifolia) is the earliest to bloom and bears dark-red, double, and red or pink single flowers. The Siberian peony (P. anomala) is similar and bears single red or pink flowers on



rounded, cushion-like bushes. The common peony (P. officinalis) blooms about a week later than the fernleaf peony and produces single or double flowers in colours from white to red. The Chinese peony (P. lactiflora), the earliest of which blooms about a week after the common peony, comes in single, Japanese (single with brightly coloured modified stamens), or double forms; in colours from white to dark red. Most varieties of peonies are Chinese. The fernleaf, Siberian and common peonies are grown primarily for their earliness.

SOIL AND LOCATION — Peonies prefer a rich clay loam and full sunlight. They will do well provided the soil is not too wet and contains sufficient nutrients.

DIVIDING OLD PLANTS — Peonies will grow for many years without dividing, but if the flowers become small and the stems crowded, dig and divide the crowns as follows:

As soon as the foliage turns a deep bronze colour in the autumn, dig around the plant and gently lift. The roots are brittle when first dug but become more pliable after a few hours. Remove the excess soil by carefully shaking and washing. With a short, stiff-bladed knife divide the plant into clumps at the natural divisions. Examine each clump separately and divide into crowns with 3 to 5 eyes each.

PLANTING — Allow 3 to 4 feet between plants. Dig a hole for each plant 2 to 3 feet wide and 18 inches deep. Discard all heavy clay subsoil. If the remaining soil is heavy textured or low in organic matter it can be improved by the addition of peat and sand but never manure. Plant where peonies have not been grown for several years.

For best results peonies should be planted in September, but container-grown plants can be planted at any time.

Plant the divisions (crowns) so that the buds are 2 inches below the surface and firm the soil around the crown. Each division should have 3 to 5 buds.

CARE — Frequent shallow cultivation is the only care required for the first two years. Peonies are heavy feeders. They will respond to a fall or early spring application of a good garden fertilizer.

Peonies should be supported against wind or heavy rain. Single wire hoops with at least 4 legs are most satisfactory. Pig wire hoops are sturdier but less sightly until covered by foliage. The hoops should be in place before the leaves unfold.

In September the tops should be cut off just above the crown. Clean up and burn all refuse and tops from around the plants.

DISEASE — Early Botrytis blight (B. paeoniae) is one of the more serious diseases of peonies in Alberta. It may affect shoots, buds and flowers. Early shoot blight is most common when the tender young stems emerge through a wet spore-contaminated mulch in the spring. Infected buds turn black and hard and often fail to develop beyond the size of a pea. Flowers and stalks are attacked at any stage, particularly during periods of cool wet weather. Leaf spots may develop when infected petals fall onto foliage. Infected flowers and leaves turn a medium brown and either dry out or become slimy with bacteria if wet. Stalks and large buds turn dark brown and usually show concentric zone lines of expansion. Pale brown spores may develop over parts of affected tissues.

Late Botrytis blight (B. cinerea), or gray mold, may develop from mid to late season if prolonged cool and humid conditions occur. Symptoms are similar on blooms and leaves except lacking zone lines.

Sanitation continues to be the most effective means of control, particularly against early shoot and bud blight. All old stalks should be completely removed in the fall, and any mulches which may have been used should be removed in early spring.

ANTS — The ants frequently found on peonies feed on the syrup which exudes from the buds. They do no harm.

CUTTING BLOOMS — Blooms cut at the loose bud stage will open and last longer than those cut when they are fully open. They may be held at the loose bud stage for several days in a refrigerator, and will then open normally when placed at room temperature. When cutting do not remove more foliage than is necessary. Excessive defoliation will weaken the plant.



WHY PEONIES FAIL TO BLOOM? -

- 1. Recent transplanting, especially of small divisions.
- 2. Planting too deep.
- 3. Excessive shade, insufficient moisture or poor drainage.
- 4. Botrytis blight.
- 5. Late spring frosts.

APPENDIX III

CYRIL M. CLARKE HERITAGE PEONY BED

PLANTED 1947

Agriculture Canada Research Station, Beaverlodge, Alberta (3 plants per row, rows numbered from the south end)

	Festiva Maxima	23.	Lady Alexandra Duff
1.			•
2.*	Mikado	24.	Thérèse
3.	Marie Lemoine	25.	Cornelia Shaylor
4.*	Luetta Pfeiffer	26 .	La Lorraine
5.*	Elise Renault	27.*	Thomas C. Thurlow
6.	Reine Hortense	28.	Inspecteur Lavergne
7.	Chestine Gowdy	29.*	Longfellow
8.	Rose Shaylor	30.	Philippe Rivoire
9.*	Baroness Schroeder	31.	Hiawatha
10.	Cherry Hill	32.	Monsieur Jules Elie
11.	Victoire de la Marne	33.	Sarah Bernhardt
12.	unknown	34.	Madame Claude Tain
13.	Marietta Sisson	35 .	Madame Jules Dessert
14.	Madame Emile Debatène	36 .	Richard Carvel
15.	Rosa Bonheur	37.	Marian Pfeiffer
16.	Laura Dessert	38.	Red Bird
17.	Golden Dawn	39 .	La Perle
18.*	Primevère	4 0.	Phoebe Carey
19.	Madame de Vernéville	41.	Clemenceau
20.	Le Cygne	42 .	William F. Turner
21.	Rev. H.N. Tragitt	43.	Mary Brand
22.*	Victory Chateau Thierry		

* Mixed row, one or two plants not as named

(1990)



TRANSPLANTING HERBACEOUS PEONIES BULLETIN 206

by William H. Krekler, Somerville, Ohio

Nurserymen must divide peony clumps to increase their stock, but why disturb lawn peonies if they are doing fairly well. I know of three rather neglected peony clumps in a neighbor's lawn that have been there over seventy years and are doing well. Very rarely the farmer scatters a little stable manure around them. Rather than transplant such oldies, why not just dig a hole to one side (cutting smaller roots only) and fill this hole with a bushel of old (fairly well aged) stable manure. If manure is too fresh the roots can grow in the other three directions, until the manure cools down. After several years, when the flowers become smaller and scarce, dig a new hole on the other side and repeat as before. Never place any plant over fertilizer, as it is like setting it over a hot stove. Apply fertilizer only at the ends of small roots, where it cannot burn the crown.

If it becomes necessary to move an old peony clump because of too much shade or by robbing roots, etc., then cut the clumps roots back about half way, thus it will have to grow new young roots from the cut ends. Young roots (like young people) are more vigorous, so the old clump will not sit and sulk (like some of we older folks) but will start producing quicker. If more plants are desired, hose the old clump clean of soil, so you can see better and not dull your knife on the soil. Younger roots are the most desirable. A few large old roots may be cut back hard if it can be done without damage. One can cut down through the old roots, as the cut part will form new barklike covering. Cut off all diseased parts, nematode nodules on ends of tiny rootlets, diseased bumps, rot that can be cut out easily, etc. Replant in dry area, which is very important.

I have seen men divide huge old clumps by whacking through it with a spade or big machete knife but they generally would end up with many buds on a few roots, and many roots having few, if any, buds. Most peony roots will not grow without buds. A few harder rooted hybrids (**Dad, Bravura, Flame,** etc.) often grow, sometimes, 'Officinalis' also. To be safe, throw such roots into a trench (wait and see).

If one wishes to give a friend a start from a clump without setting their peony back a few years by transplanting, soil can carefully be removed from one side of the crown, with a water hose and fingers, so as to see where the buds and roots are located. Then carefully spud off a section with a narrow spade. Fill the resulting hole with best available soil. Peonies prefer deep top soil that has much old humus in it to make it crumbly.

A big old clump will have large buds but very few. A two-year-old



clump will have many buds but smaller ones. Thus a younger clump will make more divisions and be easier to divide, as well as being more vigorous. In our nursery, in order to get stock quicker, we try to divide peonies into two bud divisions, however, these take an extra year to produce flowers. In the gardens of today, most people wish to save time instead of money, so I recommend a small clump of six or more buds.

A regular three to five bud division will cost half and make a fine plant. Once I experimented with a new rare variety, to increase the stock, quickly, by taking off a single plump bud on about a five-inch root and cutting down through the bud and root once or twice. These slivers all grew and took only an extra year to make flowering clumps. Never since, have I been enough of a gambler to risk my precious new promising seedlings.

A peony root must be long enough to nourish its top through a hot dry sumer and to anchor it through a wet frost-heaving March. I have experimented with big buds with only an inch of root. They grew for a while, until hot dry weather started, then died. Perhaps if pampered they may have survived. Old established clumps have buds held back in reserve, so if tops are burned or cut off they will send up a second set of stems. These generally will have pistils and stamens, even if the first set did not. Young plants hoed off, generally die.

Peonies form their buds about two inches beneath the surface of the soil, so surely that is the ideal depth to re-plant. I do not believe this depth is nearly as important as most folks seem to believe, nor is it the usual reason peonies fail to bloom (as some sellers tell you). Disease and bud freezing are main reasons for this failure.

In my fields to save time and money, we make afurrow with a Gravely rotary plow a few inches deep. We drop our two bud divisions into this furrow. Any plant out of line will be cultivated out, later. Plant a foot apart, if left for only a period of four years. The rotary plow then blows the loosely tilled soil back over the divisions, filling the trench. Some buds are only an inch under the soil, these will peep through first and may heave out and a shovel of soil must be placed over them in March. Those around four inches deep will be the last to peep through the soil and these seldom are frost heaved. All seem to grow very well. Mr. George Peyton told me that a large peony nursery used to plant the buds around a half foot under. In adjusting to their bud depth of two inches, as peonies always do, they would send out young roots from stems above the old plant. That is how they got such ideal undivided and many budded young plants to sell.

Tree peonies do best in a filtered light shade but lactifloras do much better in a full sun, except in very hot southern locations. They do grow in shade but have small and very few flowers.



LETTERS

"I am enclosing a check and would like you to send THE AMERI-CAN HYBRID PEONY. I have so enjoyed the AMERICAN TREE PEONY and so am looking forward to many happy hours with this later one also.

"1991 was a very good peony season with me. All put on a very good show, and I had many yard visitors to enjoy it with me. Of course, the TREE PEONIES excited the most interest with Gaugin leading with 124 blooms/Nagoya Castle with 112. Others performed well, too, but I did not count all of them when I removed the spent blooms. All plants made a very good growth. In this area it is necessary to give additional water and I have the black flexible weeping hose to supply it. I think it is super. I think it and the fact that large planting spaces were prepared for each, accounts for the very gratifying growth and bloom. Do certainly enjoy the BULLETIN."

-Gertrude Goddard, Dodge City, Kansas

Allan Daku, Parkside, Sask., Box 68-50J 2AO, Canada

"A few comments along with my membership money.

"I have been growing peonies for twenty-five years, the last twelve on a commercial scale—(see enclosed catalogue). Our nursery specializes in lilies, peonies and prairie-hardy perennials. Because we are stuck out in no-man's-land, our business is largely mail-order.

"We try to list 25-30 varieties of peonies annually, varying perhaps half of them. We are growing about 150 different cultivars and species, but, of course, list only the most superior of these (perhaps 50 cultivars) for general sale.

"We have noted a strong surge of interest in Japanese and the early single hybrids in the last number of years. This would appear to be a Canadian trend, as our orders come in from all across this country.

"These peonies stand out in my mind this year: 'Diana Parks' and 'Coral Charm' flowered for us for the first time this year, and their unusual colors truly stood out. 'Sophie' has flowered for us before, but really seemed to outdo herself this year.

"I have a number of old cultivars which have lost their identity. Does the A.P.S. have someone within its membership who could offer some assistance in naming these? Several of us on the Canadian prairies have inherited some old pioneer peony collections and together we have been attempting to name many of these that have become nameless. I have several in my collection which came from the garden of a former hybridizer, so I expect these may just be seedlings. These are not particularly outstanding, so I don't ever expect to do anything with them.

"Are you aware of any historical collections of the herbaceous



varieties? Being one of the few Canadian nurseries offering named cultivars, we often get requests for certain clones. I would appreciate being able to make several contacts with growers of old cultivars in your country. Perhaps this would make tracking down some of these 'wanted varieties' easier.

"I will be sitting down to order some of the Society publications once Winter rolls around. I need a register in the worst way.

"One final comment. Just want to commend you on the A.P.S. Bulletin. I am co-editor of a quarterly newsletter for the Canadian Prairie Lily Society, so know full-well the kind of hours needed to put out a quality publication. I enjoy the BULLETIN very much.

"Thanks again for your dedication."

* * * *

Dear Mr. Tischler — (submitted to the Bulletin)

Just to keep you informed:

- 1. Both of my roots of the **Festiva Maxima** bloomed; one had 4 stems with 2 magnificent flowers and reached a height of 32 inches; the other had 3 stems: 2 very strong 30 inches high, and one reached a height of 24 inches. Had one strong flower.
- 2. Red Charm had two stems 34 inches high. Had two flowers. The stems were even stronger than Festiva Maxima—and that is not taking anything away from the sturdy stems of Festiva. The flowers were magnificent and I had many excited comments from my neighbors.
- 3. Sea Shell had 4 stems: two reached 24" height, 1-12 inches, and one about 6 inches. No flowers. Stems still look strong with a lot of vigor.

NOTE: I have used tomato holders for my peonies. Three hoops. I cut away the bottom hoop—the second hoop is 9" in diameter at a height of 24 inches, and the top one is 12" in diameter and is a height of 36."

I would like to purchase the following peonies from you as follows:

1—Sea Shell 1—Pico 1—Westerner 1—Red Charm

Enclosed is my check. As you know, my area will take much later planting. In the Winter time the temperature can drop down to 20 degrees, but the ground never freezes. Nights can be cold but the sun comes out to raise the temperature to between 40-50 degrees. Last winter was unusual. Temperature dropped to 10 degrees for about two weeks and we had 42 inches of snowfall over two days . . . and this was on March 25, 1991. All of my new formed rose growths were broken off by the snow. Oh, and my peonies had reached a height of 2 to 3 inches. It did not harm them in any way. For your info., I have to deepsoak my peonies about every 5 days as we do not get any rain from April through October.

Will keep you informed with the progress of my peonies.

—Sincerely, Leo John Fronczak, Pollock Pines, California



(P.S.—Almost forgot. My fernleaf peony came out strong with 4 stems. They never got higher than 6 inches. Starting in early July two of the stems browned and died back. Now the other two stems have browned and do not look good. Possibly, this area is not conducive to fernleaf peonies. We'll see if they come up next Spring. Will let you know!)

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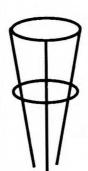




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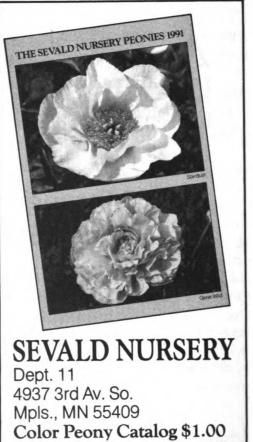
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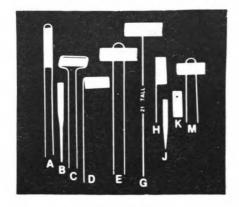
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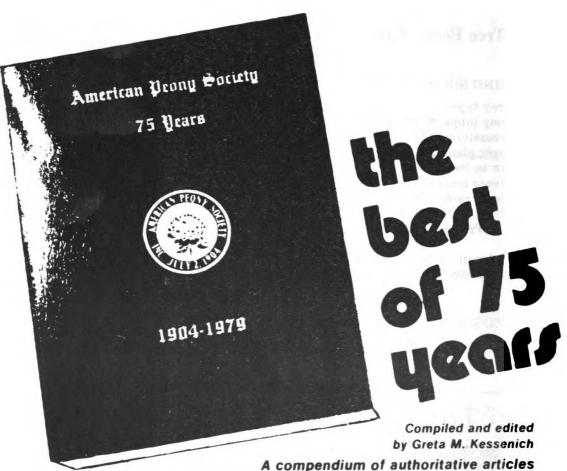
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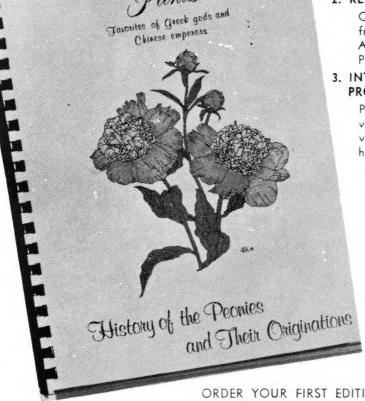
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