

*L. J. Lee*

DECEMBER 1997

NO. 304



# The American Peony Society Bulletin



*GOLDEN BOWL — Saunders Tree Peony*

Photograph — Roy Klehm

## Announcing

The limited  
publication of  
a "TABLE TOP"  
edition devoted  
exclusively to

## AMERICAN TREE PEONIES



### Appended cultural notes cover:

- Tree Peony history
- Planting and general culture
- Propagation by root grafting of scions
- Pruning, fertilization, winter protection, etc.

Compiled and edited by  
Greta M. Kessenich;  
photos by Roy Klehm  
and David Reath

# The AMERICAN TREE PEONY

## 63 BRILLIANT FULL COLOR PHOTOS

True, tree peonies with their 1400 year history are not native to America. But a class of exceptional HYBRID tree peonies are. Efforts by seven world renowned American hybridizers\* who successfully cross-pollinated *P. Lutea* with *P. Suffructicosa* are covered in this limited edition. Photos are razor sharp in detail and reflect all the brilliance and subtle hues of these native Americans, including the new generation of ITOH's.

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Don Hollingsworth and Roger Anderson

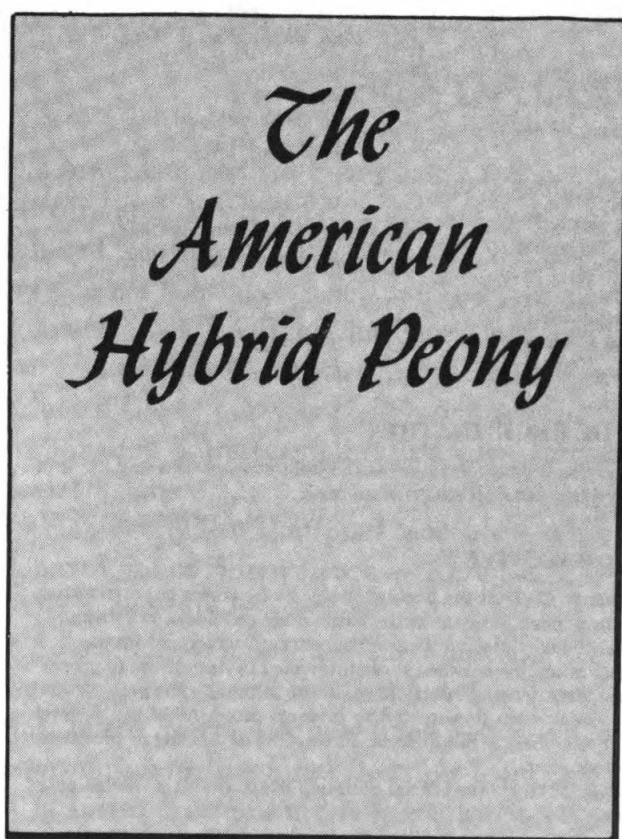
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*Devised and  
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### DEPT. OF REGISTRATION

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 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 post-paid 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:

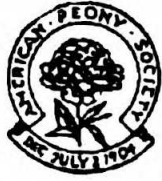
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Contributing .....	\$25.00	Supporting .....	\$100.00
Sustaining .....	50.00	Patron .....	250.00





# AMERICAN Peony Society Bulletin



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December 1997 — NO. 304

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## PRESIDENT'S MESSAGE

As I write this, fall is upon us and the peony tops have frozen. It is time to remove the leaves. Most of the peony seeds from hand crosses have been collected and planted. In some years late spring frosts can damage flower parts and prevent a good seed crop or the weather can be too hot during flowering which results in poor seed production. This year the weather was good and there is a good seed crop.

May all of you have a good holiday season and a relaxing winter, full of anticipation for the coming bloom season.

Sincerely,  
Scott Reath

### BULLETIN FRONT COVER:

*GOLDEN BOWL, (Saunders 1948) Tree Peony*

Large cup shaped flower of intense yellow with scarlet flares in the center.

### BULLETIN BACK COVER:

*GUARDIAN OF THE MONASTERY, (William Gratwick)  
Tree Peony*

Blend of cream, pink and lavender, purple flares. Blossoms are large and airy. Strong stems holds flowers above the foliage.

Photographs by Roy Klehm.



**AMERICAN PEONY SOCIETY CONVENTION  
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**Full details and program, March Bulletin  
Dr. Kent Crossley, Chairman**

**SOIL AND PEONIES**

*By Vernon Kidd*

*500 W 43rd St, New York, N.Y. 10036*

The September *Bulletin's* article by John Oeltjen, regarding the preparation of better soils for Peonies, pp. 16 through 27, offered surprises for enhancing my garden soil—readily available organic material I had previously ignored—and explained why Nitrogen, Potassium and Phosphorus were important (other than just PH numbers), plus the need for yearly replacement of Nitrogen.

The sandy soil on this Atlantic Barrier Beach, much like a Rain Forest, I suppose, has very thin topsoil from the accumulation of leaves decomposing over time. It provides nutrients for a year or so, then is depleted. In the case of the Rain Forest, the Indians clear patches for their crops until they are no longer producing, then move

on to another spot where they "cut and burn" the forest, causing terrible destruction. Where I had already improved the soil, the peonies demonstrated immediate approval.

It sounds simplistic until you understand that everything comes by boat, laboriously carried from the dock by shopping carts or small wagons, or shipped to the dock by freight boat—all subject to charges—with the shipping charges frequently costing more than what is shipped. I no longer haul out 40 lbs. bags of soil, preferring to pay triple for a bag delivered to the house by the new Summer season flower & garden shop run by Scott and Mike. It saves my back, and has made preparations for new plants less hectic, since Mike carries it onto the back deck a short few steps to where it performs magic on the peonies. Everything depends on boat schedules, which are down to twice a day by November, more on weekends. By then, activities in Manhattan demand most of my time, so reluctantly, the house and garden are closed for the Winter.

Before this happens, it is a race with time to get new peonies planted, and the garden cleared for a Winter spent hoping there will be good snow cover to protect them from heaving, and envying those who can keep an eye on their gardens during Winter months. Of course, each section of the country has their specific planting difficulties. Mr. Oeltjen stressed natural rather than chemical substitutes, which are more readily available these days, and I am looking around for a supply of Cottonseed meal, greensand, blood meal and dried ground fish.

A friend, Jerry Kaler, furnished me with a large plastic garbage can filled with composted horse manure, and the tomatoes this Summer were the best in years. There is a huge supply of Sea Grass available, but it takes so long to break down—I wonder would it be useful other than as a mulch?

A call to Cricket Hill Garden, found in the ad on page 47 of the *Bulletin*, resulted in their color catalog being sent to me, and the consequent order of the Chinese tree peony Necklace with Precious Pearls. Kasha and David Furman include a pint of Neptune's Harvest (a liquid fish emulsion) with your order, and suggest it be mixed with water and used to settle-in the new plants. In addition to their lovely color reproductions of many of their Chinese Tree Peony stock, the catalog is furnished with a convenient color chart, listing the different varieties along with the flower shapes, plus a description of each plant in the catalog. As they explained, Chinese tree peonies take time to come into bloom, and they have some 5 to 6-year plants expected to bloom the year following planting. So I will look forward to blooms next Spring, contrasting with my favorite tree peony (no name), which I transferred to a new location with much richer soil, and previously enriched.

Grass weeds in the garden are being pulled (slowly), and the



herbaceous peonies are for the most part green and healthy. Another transplant to a better location over the weekend was **Coral Charm**, and others need moving to relieve crowding. A planting site is already prepared for the eagerly awaited Nassos Daphnis tree peony, **Zephyrus**, from Reath Catalog's extensive offerings. So much interest is focused on Tree Peonies today, even one of the posters for New York's 1997 Lincoln Center Festival was of tree peonies, and once you grow these stunning beauties it is easy to become addicted. Be very careful where they are placed in the garden to achieve maximum effect.

Klehm's recent introduction of the new European tree peony, **Madame Andr'e de Villiers**, was loaded, with large hot pink double flowers (it has bloomed every year since planting in my garden), and is an outstanding garden choice. **Shintenchi**, also provided by Klehm's, has had the largest blooms, the size of dinner plates and so beautiful they are almost unreal—both plants are going into their fourth season from strong healthy stock. Other tree peonies include David L. Reath's 1994 introduction, **Waucedah Princess**, which produced two delicate lavender double blooms its first season in the garden, and my two unknown varieties, one of which resembles **Hana Kiso**i, but whose flowers are more generously petaled than those pictures in some catalogs—for the time being it is my favorite, for color, of the tree peonies I grow. A 1972 Itoh-Smirnow deep yellow semi-double Hybrid **Yellow Crown**, is at last on the way from Jung's Catalog, who are generously replacing a peony ordered three years ago, which was not true to color, so I have yet to see **Primevere** in bloom. The peony they had sent was probably **Bowl of Beauty**, with rose pink outer petals with creamy petaloids instead of yellow.

Late season observation of P.C. Laning's **Sunny Girl**, whose shining green leaves on this light yellow double hybrid are unlike any other in the garden, make it ideal for a low hedge or as a front of the garden specimen. It stays attractive throughout the season (see pp. 62 in *"The American Hybrid Peony"*) and I have hesitated to move it forward for better placement, because it is still new and apparently happy where it is. It gives most of the early peonies a race to open first usually blooming with **Red Grace**—see pp. 67 in Hybrid Peony book for a picture of a glowing field in bloom of my favorite red. **Sunny Girl** makes a lovely contrast with the latter somewhat taller plant.

For years, I tried to coax **Myra MacRae** into bloom, with only minimal success until this year, when two divisions from The New Peony Farm, in widely different locations, produced gorgeous blooms. One plant was probably thanking me for discovering a sneaky 10-foot root from a neighbor's **Privet** growing directly underneath the **Myra MacRae**, usurping all the nutrients. While (gingerly) adding rich

humus to the root area early in the Spring, I discovered the invading root, and cut it back to the fence. Beautiful lavender bombs greeted my return from the National Exhibition in Hamilton, when much of the other peony bloom was finishing. Late flowering **Elsa Sass**, doesn't always open well for me due to the sudden onset of heat plus humidity of the seashore just as they are ready to open—sometimes the blossom is rotted in the bud, which means I need to use more fungicide. That said, **Vivid Rose**, one of the first divisions ordered from Klehm's around 1978, and again among the winners in Hamilton this year, never fails to bloom for me, and its sweet fragrance fills the cottage with late bouquets.

The Fall season in New York has begun in earnest. I attended the final dress rehearsal last Friday of the Metropolitan Opera's "Manon," an eagerly sought ticket this season because of the popular Ren'e Fleming in the title role. Following President and Ms. Clinton's visit to Monday's opening night "Carmen," tonight is a favorite, Richard Strauss' "Adriadne auf Naxos," with Deborah Voigt, the Met's gifted dramatic soprano in the title role. The New York State Theater opened with a new production (the less said of it the better) of Verdi's "Macbeth," which had outstanding singing by Lauren Flanagan as Lady Macbeth, despite the production. This is a busy time for the nurseries, who are digging and shipping our favorite flowers, and at the same time, they renew and increase the stock of these extraordinary gifts from the gods through the imagination of man. I for one extend a grateful and heartfelt thanks to all.

All my best wishes!

★ ★ ★ ★

## 'ORIENTAL GOLD' MAY BE AN ANCIENT PEONY!

*by James K. Langhammer*

The peony **Oriental Gold** introduced from Japan by Louis Smirnow in 1954 has long been shrouded in mystery. Although apparently found as a cultivated plant by Smirnow, its uniquely yellow roots and dormant root-buds, its chartreuse stems and bright double yellow flowers were as inexplicable in terms of parentage then as well as today! This plant originally was listed by Smirnow at \$150.00 in 1955 but appeared in later catalogs at \$75.00. Its price, coupled with the fact that most people experienced difficulty in successfully growing it, kept it a rarely seen variety. Additionally the peony cognoscenti in those days were focused on large magnificent show-worthy peonies—this plant with a smallish flower and a difficult disposition quickly fell into disfavor and gradually disappeared. Only recently has Galen Burrell begun to call attention to the need for APSers to actively safeguard the gene pools residual in the

species and older cultivars by creating a special interest group for their preservation.

In spite of its unique and wonderful qualities it seemed that by the early 1990's I might have the only specimen of **Oriental Gold** remaining in North America. In spite of numerous inquiries I could find no other growers. Apparently all that remained of its gene pool in American commerce was **Goldilocks** (an F1 hybrid between **Oriental Gold** and **Claire de Lune** which Ben Gilbertson registered in APS Bulletin #216).

My own experience with **Oriental Gold** which I acquired in the mid-1970's was a case study in frustration. My purchased plant was large enough that I divided it and shared it with a friend who grew it successfully for many years in a garden that was essentially the equal of my own in all respects—climate, soil and sun exposure. My division died after several years and I kept replacing it with new divisions from my "satellite colony"—each replacement would perish after one to several years. Finally I changed location in my yard to a most un-peony-like site in the dense shade on the north side of my house. This division survived, grew and bloomed for many years, but never had more than ONE four-foot scape, usually with 3-4 blooms! My friend had moved to a new home and his clump had not survived the move so now my hopes were centered on a clump with a single growth center! Having found no other growers, I decided in the Fall of 1993 to move my plant to a sunnier location in the hope that it would clump up. Big mistake! It did not appear in the Springs of 1994 or 1995. In Fall 1995, I received some seedling species peonies from Galen Burrell and decided to plant them in place of the "dead" **Oriental Gold**. Oddly the unmistakable yellow roots were still in place as plump as ever but fragmented from each other and without a crown. I left them in the site and planted *P. lagodeschiana* with them, knowing their phenotypes were impossible to confuse with one another.

Let's jump in time to mid-Summer 1997 when the Fall catalog from White Flower Farm arrived in the mail. I could not believe my eyes! They were introducing a new double yellow peony from China named **Golden Wheel**. I was certain from years of personal experience that the pictured plant was identical to **Oriental Gold**, yet it was described as having been bred in the Chinese Imperial Gardens more than 200 years ago! Eureka! I wondered if the elusive trail of **Oriental Gold** might actually have originated in China and if it had reached Japan during Japan's invasion of China during the Second World War. Perhaps a Japanese soldier/gardener had recognized the unique quality of this plant and carried it home to Japan where Smirnow encountered it a decade or so later. I quickly wrote to White Flower Farm ordering a **Golden Wheel** and asking for more information as to its origin. Mr. Steven A. Frowine, White Flower

Farm's Vice-President of Horticulture, kindly offered to share the following observations with the American Peony Society:

"I believe that **Golden Wheel** was the original yellow herbaceous peony and possibly a parent of **Oriental Gold**. I spent last week with the peony breeder from China, Mr. Zhao, and was able to ask him more detailed questions about the origin of this variety.

"The yellow peony, which is assumed to be **Golden Wheel**, was first recorded in Chinese history as a gift to the emperor in the Tang Dynasty (around 800 A.D.) which was then headquartered in Xian.

"About 200 years ago, this peony was rediscovered by Zhao De-King (Mr. Zhao's great grandfather) in Xian, China. Zhao De-King was the breeder and grower of Shaoyao and Mudan during the Qing Dynasty. It is believed that the peony originated in Henan, China, an area close to the now famous peony growing area Lo-Yang in the County of Anyan. As late as the 1970's, its wild form could be found in this area. Because it was thought the roots of this variety had medicinal properties, Mr. Zhao brought plants back to the Shandong area of China where mass propagation began around 1910. After it was found that these roots actually had no medicinal properties, mass propagation stopped.

"Japan's 1930's invasion into China was most probably the time when some of these plants were taken back to Japan.

"The family of Mr. Zhao Xiao-Qing, who is a direct descendent of the founder of this variety and is presently a breeder of Mudan and Shaoyao, has been breeding Mudan and Shaoyao for 24 generations."

\* \* \* \* \*

Hopefully Mr. Frowine's research will enable someone to finally discover the origins of these unquestionably domestic cultivars and ascertain whether the two varieties are actually only one!

For additional background information on **Oriental Gold**, refer to: *PEONIES: History of the Peonies and Their Originations*. APS, 1976; pg. 75.

*PAEONIA: An International Newsletter for Peony Hybridizers*. Vol. 26: 4; pg. 6.

As I write this in late September, my plant of **Golden Wheel** has arrived from White Flower Farm and it does have the bright yellow Winter buds and yellow roots and sap so characteristic of **Oriental Gold**. I eagerly look forward to evaluating its 1998 growth.

In an incredible irony, I was winterizing my peony beds by weeding and cutting back this year's vegetation when I discovered that two plants of **Oriental Gold** have appeared from adventitious root buds formed nearly four years after the original crown died in my yard! Peonies never cease to amaze me!



## Bulletin #303 continued

Part I - Understanding pH, Essential Elements  
and Minerals for Plants Growth — *John Oeltjin*

### **PREPARATION OF BETTER SOILS FOR PEONIES AND OTHER PLANTS TO SURVIVE DURING AND AFTER MAJOR CLIMATIC AND WEATHER CONDITIONS AND CHANGES**

**PART II: Compost: Its Benefits, How to Make and Use it.  
Practical Approach to Cleaning and Restoring Soil.  
Fertility; Mineral Sources. Recommended Reading.**

*by John Oeltjin*  
*4853 Cordell Ave., Bethesda, Maryland 20814-3022*

Compost has become my most important soil and nutrient building component of the perennial garden. Compost piles are created to bring together and unite as many different sources of organic and inorganic substances, which as a whole, provide the best balance of soil nutrients necessary for continuous plant growth, soil fertility and reproduction.

Compost making is an art and a science. It takes several years to truly appreciate the benefits of all the seemingly worthless organics layered together, to make a unique biodegradable mass. What I discovered over the years is that specific combinations of dead plant create a better compost than others. Also, by building one compost from Spring weeds and another from Fall cleanup, my fertility needs are satisfied for an entire year. The longer that each compost sits, the better the compost becomes.

In the Spring, I collect all my favorite weeds which have germinated and grown over the Winter—wild onions, dandelions, chickweed, gill-along-the-ground, elephant ears, yarrow and grasses growing in the wrong places. From research, I have realized that the greater the diversity of weeds that I can collect, the greater number of vegetative compounds that can be mixed into one mass. My eyes are always open during travels for anything that will enhance the compost.

Special weeds and herbs add spice to the compost and eventually the soil. Special elements and minerals are manufactured within the cells of specific herbs. I will give you a few examples. Chamomile flowers bear a relationship to calcium and sulfur. The decomposed flower helps to stabilize nitrogen within the compost and soil. The yarrow flower, when composted, bears a relationship to sulfur and

potassium. It permits trace elements in minute quantities to be absorbed. Wild onion can extract vast quantities of silica from the soil and transform it into a soluble vegetative form within its cell structure. Stinging nettle is rich in the vegetative form of sulfur, potassium, calcium and iron.

Add all of these together along with other weeds and this mass becomes the world's best worm factory. Billions of beneficial bacteria and other minute organisms are digesting these wonderful dead weeds and transforming them into a healthy biomass, highly enriched in thousands of readily assimilated substances. New compounds are excreted from their minute digestive systems, which enter the soil and become food for plants.

### **BENEFITS OF COMPOST**

1. Compost builds good soil texture and structures. It allows the soil to retain nutrients, moisture, and air for the growth of healthy plants.

2. Compost supports beneficial bacteria, microorganisms and earthworm activity. When cultivated into the soil and around the plant roots, on a yearly basis, it will prolong the growing season, conserve energy resources, and protect roots from extreme temperatures.

3. Compost is an excellent method to recycle many biological wastes generated in the garden and in the household.

4. Composts are economical to build and maintain. They take minimum effort to erect and can be placed in a small area in a garden.

5. Compost can be applied year-round, both outside in the garden and inside in the greenhouse. Compost can be stored in containers and mixed with other soil materials for potting plants at any time, without causing injury to roots or plant growth.

6. Compost is a sensible means of maintaining a clean garden and have a site on hand for the immediate disposal of organic debris generated in the household and garden.

7. Composting allows the gardener to be independent of commercial fertilizers. It allows compost to be substituted for other organic fertilizers which may not be available for purchase.

8. Compost loosens clayey soil to produce better tilth and crumb structure. When cultivated into clays, the compost separates the tightly-packed clay minerals and allows water and air to seep into pore spaces. Compost retains moisture in clayey soils during droughts.

9. Compost can correct poor structure in sandy soils by allowing more humus to remain between the sand grains. The more humus that is in the soil, the more moisture and nutrients the soil can retain for plant stability. When finished, my compost has a pH of 6.5 to 7.0.

10. Compost provides plants with organic and inorganic watery solutions containing minerals and trace elements in minute quantities.

ties, which can be assimilated by the plant's roots. These solutions are manufactured by billions of beneficial bacteria, fungi, micro-organisms and many earthworms which secrete digested organic materials in ready-to-use substances.

11. Compost and humus, when added to soils yearly, reduce erosion, caused by wind and water. Very fertile organic soils are practically resistant to erosion.

12. Compost provides nutrients to the plant's roots very slowly during cold soil temperatures. As the soil temperature increases, the compost releases plant nutrients in proportion to the plant's growing needs.

13. Compost, when added to light, colored soils, darkens soil color. Dark soil absorbs sunlight and heat sooner, then retains the heat longer, allowing plants to start growth earlier in the Spring. Soil temperatures will decrease at a slower rate, prolonging the growing season.

14. Soil rich in organic matter and humus will produce larger and healthier plants, better bloom color, larger bloom size, larger and more delicious, mouth-watering fruits and vegetables.

Once you understand and see the benefits of compost, collecting materials and building compost becomes an invigorating and enlightening experience, because you can look forward to the increased benefits in your perennials and vegetable garden and farm.

#### Basic Materials Needed for Compost Structures

1. Fencing wire, chicken wire, 4 feet x 50 feet
2. 18 oak stakes, 1" x 2" x 72"
3. Trash cans with lids
4. Copper or aluminum wire
5. Black plastic, 6 mil
6. Old or poor soil
7. Sledge hammer, flat headed shovel, shovel, wire cutters, pliers, pruners, pitchfork. Gasoline-powered shredder, optional. Changes in structure and size can be made according to your needs.

#### Steps to Building a Compost Pile

1. Choose a shady site which may receive some morning sun. Do not build a compost which receives sunlight for more than four total hours during the hottest part of the Summer. A cool site will produce the best compost.

2. Loosen the soil six inches below the compost area to provide drainage and aeration. The compost pile is 4' high, 4' wide and 8' long.

3. Outline area. Pound oak stakes one foot into the ground, every two feet on both eight foot sides. Pound two stakes in the center, equal distance from the sides, to divide the bin into two equal volumes.

4. Cut a five foot x four foot section of fencing wire and weave it

in and out of the four center stakes. Wrap and secure the extra six inches on both ends around the stakes. Use wire to secure the fence to posts.

5. Cut two, thirteen x four foot fence wire sections and weave it in and out of the eight foot sides. Secure the fence to the stakes at the top, middle and bottom of each stake. Be sure that the fence wire is tight. The extra five feet at the end will act as a gate, for loading, unloading and mixing the compost pile. Secure an oak stake diagonally across the four foot section and wrap the extra wire around a stake, securing it with wire. Place the stake in the ground on the opposite eight foot side. Trim off extra fence wire. Pound this stake into the ground, so that the fence wire for the gate makes a ninety degree angle with the eight foot side. Wire this stake to the end stake.

6. Pound two stakes at the front and back openings, equal distance apart, just like you did for the center portion.

7. Manuever the wired gate to go either on the outside or inside of the stakes, depending on the use of the gate. Make clamps of heavy wire, to quickly attach and detach the gate to and from the sides.

8. Fill a trash can with poor dirt and cover with a lid, or pile dirt next to the compost area and cover with plastic, weighing down the sides with rocks.

9. Collect wood chips and sticks, one-inch in diameter. Place a three to six-inch layer on top of the loosened soil, inside the entire fenced area. The sticks will provide good aeration for the compost and allow air to circulate.

10. Place a small trash can next to the compost pile and fill with kitchen scapes, each day.

11. Begin collecting compost materials. Try and keep them as dry as possible until they are layered and use in the pile.

#### Useful Materials to Collect to Make a Compost Pile

Soil, dirt, top soil, pulverized rock fragments.

Weeds with some soil left on the roots. If weeds are big, cut up.

Perennial roots and foliage—chop up with a flat-headed shovel.

Kitchen wastes (no animal meat or fat).

Fish heads—cover immediately with one to two inches of soil.

Vegetable garden debris, cut up as fine as possible.

Rain gutter collections.

Horse, cow, chicken manures—only one-inch, cover and mix.

Shredded spoiled hay or straw—heat generated will kill weed seeds.

Grass clippings—only one-inch, or it mats and reduces air flow.

Barber shop clippings, vacuum dust.

Apple pummace from apple cider process.

Egg shells—excellent source of calcium and nitrogen.

Sawdust and wood shavings in small quantities—sprinkle, don't layer.

Fall cleanings of leaves and garden clean-up debris.



Rain water or spring water—keep in gallon containers next to pile.  
**ABSOLUTELY NO CHEMICALS OF ANY KIND, OR PLANTS  
TREATED CHEMICALLY.**

**Tips—Do's and Don't's in Making Compost**

1. Use one side of the 4' x 4' x 8' section for Spring compost and use the other side for Fall compost.

2. Create a twelve-inch layer at once, using materials collected over a short period of time. Layer each material as thin as possible. Use different biodegradable materials. Level the area, creating a slight depression in center to catch rain water. Sprinkle one gallon of water over the entire layer. Cap each twelve-inch layer with one inch of poor soil. In a week or two, the layer will sink in volume. By making all layers the same size, you will be able to understand which materials decompose at different rates in different weather conditions.

3. The dirt placed on top retains moisture and applies pressure to the materials under it. Over time the dirt will soak up the "teas" and become very rich. Compost pile area always becomes a very rich soil after the compost is removed. Sometimes it is best to site the compost over a very poor soil, to increase its fertility from "compost teas." You will be amazed at plant growth in compost site soils.

4. Build your pile gradually. Don't toss large blocks on at once. Enjoy building the compost and transfer your positive energy through your hands to the compost pile. The more materials of different biodegradable substances that go into the pile, the better the results.

5. If the materials used are dry, sprinkle one or two gallons of water over the entire mass, with more water sprayed on the sides, than in the center. If you use a lot of materials with moisture, then reduce your water and use common sense. Never soak the pile and NEVER allow the pile to dry out. Always keep it moist.

6. Keep trash cans next to the pile and fill these with dry junk like manures, sawdust and vacuum dust. By adding all dry units at once, it is easier and wiser to add the appropriate water.

7. The finer the materials are cut or shredded the faster the compost will decompose, and the faster the air will be used. If you use very fine materials, place sticks within the materials to allow air to circulate. Add water when necessary.

8. Compost decomposes fast in hot weather and slower in cold weather.

9. Continue to add materials until you have reached the top. Cap the four foot top with a thin layer of soil, then cover the entire pile with black plastic to increase the rate of decomposition and reduce the leaching of compost "teas" by cloudbursts. Leave some air spaces between the bottom and the top of the plastic to allow air to circulate.

10. Three months after settling has stopped, open the gate and begin turning the compost with a pitchfork. You will notice that the interior is darker in color than the sides and has more earthworm activity than the sides. Turn the compost so the side materials end up in the center and the center materials end up on the sides; the top becomes the bottom and the bottom becomes the top. While turning, beware of the number of earthworms present. At the beginning of decomposition, there will be more earthworm and bacterial activity. As the organic food is being digested by worms, fungi and bacteria, less food becomes available for the decomposition process.

A good rule of thumb to follow is that the compost is ready for distribution, after very few earthworms are present. Allow the compost pile to work another three months. This will allow the materials and top materials to decompose and have the same consistency as the center materials. Another observation to note is the presence of grey, ash areas. This means that the area has decomposed too fast, all moisture has been used, and good materials have been lost. If you see this grey ash in your compost, add water. When you have finished turning the entire pile, add one cup of bonemeal, kelp, phosphate and greensand to the top and work it in. Rain water will distribute it to the other parts of the compost. Cover with a thin layer of soil and water carefully. Recover the top with plastic and allow the pile to sit for another three months, checking every week or so for grey ash and moisture content. Holes can be punched in the plastic to allow air and water to seep into the pile.

11. Add manure to the compost in early Spring and Fall. Always cover the manure with leaves or soil. City folk smell manures with their eyes and ears, because they don't know how to describe this fragrance when it hits their noses. Manure can be layered a few times to increase nitrogen nutrients. Do not overload a compost with any manures. It will get too hot too fast and losses will result.

12. When you live in areas which have many sudden thunderstorms cover your pile after each layer with black plastic, to keep the nutrients from leaching out and washing away. Black plastic, 6 mil, can be attached to the insides during preparation of the structure. It will provide a neater appearance and keep materials from spilling out on your patio. It will allow the sides to decompose at a more even rate, similar to the center portions.

13. Compost piles can be made with or without manures.

14. Compost making will be different on every garden and farm. It is dependent on your needs, weather, time, total surface area and the availability of materials. Compost can be made to produce ready-to-use compost in less time than that which is described. Check with your County's Extension Service for alternatives.

15. Buy a long-stemmed thermometer. Insert it into the compost after completion to monitor the heat build-up in the pile. Maintain a

temperature between 120°F and 145°F. Temperatures over 150°F are harmful. Watch your pile as it falls. Watch your thermometer. Oxygen is being used in the decomposition process, so add more by inserting a crowbar and pushing the pile up and down, back and forth to allow air to circulate. Add water carefully when the temperature exceeds 145°F. Check different areas and the sides for heat fluctuations. If the temperatures are lopsided, try and remember what was placed where to cause the temperature change. Next time, change your materials and procedure.

16. Making good compost takes practice. Each successive compost should be better than the previous one. The addition of manures and rock minerals are optional. If you do add limestone, rock phosphate and greensand, use only two cups per compost and sprinkle it at different levels. Compost is usually neutral.

17. If you make more compost than you can use in a year, save what you have and do not remove it from the pile. You will find that the second year, this compost is better than the first year, although fewer earthworms are present. The beneficial bacteria continues to produce necessary compounds.

18. Compost "teas." Several years ago, when I needed the compost area for a garden, extra compost was dumped in a wooded barrel, then forgotten. Later in the year, I noticed that water had filled the barrel, and I remembered my compost. After stirring the mass, I extracted a wonderful black watery substance and used it in watering seedlings. Good results were achieved in contrast to using just plain rain water. I now use it often on germinating flats. It does not have an odor and is readily available. With its success, I fill the barrel one-quarter with compost and place the barrel under a rain spout. After several barrelsful, the compost is removed, and new compost is put in. Compost teas are also very good in the greenhouse.

#### Using Compost in The Garden

1. A 4' x 4' x 4' pile made in one year, will produce sixty-four cubic feet of natural fertilizer. Sixty-four cubic feet equals 2.37 cubic yards equals 2.37 tons, equals 4,740 pounds of fertilizer. Just because you have so much good fertilizer, do not spread it all at once. Save your compost and conserve its use. Apply all on the surface and cultivate it into the top two to six inches of the soil. I divide this good fertilizer into four units and use it over a long period of time. The following plan works well for me.

2. One-fourth of the compost is saved for the vegetable garden. At the time of planting, one shovelful is used per plant and mixed with the other soil at the root level of each plant. One shovelful is mixed with each three feet of a row for beans, beets, lettuce, etc. Compost left over is used to inoculate new compost piles and stored in covered barrels and trash cans to retain the moisture content, and used for special purposes.

3. One-fourth of the compost is used to side dress all established perennials at the rate of one-quarter pound per square foot.

4. One-fourth of the compost is saved and used with all new plants, divided from existing stock and purchased, at the rate of one shovelful per fan or division. Compost is mixed at the root growing level.

5. One-fourth of the compost is saved for new perennial beds, new and existing seedling beds, perennial germinating flats, and shared with friends. Compost for emergencies is stored in barrels and trash cans.

6. When compost is conserved, I have enough with some left over to completely fertilize a quarter-acre sized garden. As the garden size increases, more compost is made.

#### Building Compost With Only Leaves and Manure

Roots of hardwoods reach deep into the earth to bring rare minerals to the leaves. The minerals are transported to the leaves by water. The more water that the roots can absorb, the more minerals are brought to each leaf. Water is transpired through the leaves and the minerals remain. Fallen leaves add minerals to the forest floor and are gradually broken down by bacteria and insects, eating leaves from past years. Collect leaves in the Fall or have them delivered. Dry leaves are best. If you cannot work with them immediately, cover the pile with plastic. In the Fall add leaves to existing composts, shred them, mulch plants. Leaves aerate clayey soils, keep sandy soils from drying out too fast, soak up precipitation, and reduce erosion.

Composting leaves. Before Fall arrives, set aside an area to compost leaves. Use a snow fence or wire fence to contain all compost. Rent or buy a shredder and find a source of manure. Manure is the best nitrogen supplement for compost making. Layering five parts leaves with one-part manure will make leaves break down quickly. When done right, your compost will be ready for next Spring's use. Buy a long-stemmed dial thermometer and maintain a temperature between 120°F and 145°F. To get as much in the bin as possible, walk all over the leaves, not the manure, compressing the material, especially around the sides. After every manure-leaf layer, apply water with a hose. Weed seeds in manure will be destroyed by the high temperatures. The nitrogen (manure) added to the leaves will speed up the heating process. Plastic can be tied to the inside of the fence to encourage total decomposition and keep the area neat. The manure provides the necessary nitrogen for the bacteria to feed.

Shred the leaves. This allows more leaves to break down faster and prevents leaves from filling up your neighbor's yard. Layer, compress, water. Allow it to sit. Every three to four weeks, turn the compost with a spading fork, moving the side to the center and center material to the sides. Earthworms will appear. Go fishing. Cover



top again with plastic, yet allow air to circulate. A soggy compost will not generate enough heat and will not be ready for Spring use. In the Spring, add small amounts, one-fourth pound per square foot of land surface. This may seem to be a very small amount, but the less you use, the better for the soil. The laws of reciprocity are in control, allowing this small amount to multiply the nutrients from the compost to a great amount in the soil. It is far wiser to add a little each year, than a whole lot at once. Repeat this process annually and in several years you will have wonderful soil, wonderful plants, and gorgeous flowers, fruits, etc.

#### Straight Forward Steps to Cleansing Soils and Making New Gardens

1. Don't use artificial fertilizers. The only chemical allowed to be used in the garden are WEED killers.

2. When you have new soils for gardens, plan out what you want to grow. Research the plant's genetic characteristics, suitable for your environment. Understand maintenance and life supporting requirements. Mark off area. Use chisel plow, disc, tiller, or dig it. Turn all soil under to begin the decomposition process.

3. Test soil in Spring and Fall for crumb structure. Analyze soil under a microscope. Determine percent composition of all particles—sand, clay, silt, pebbles, mineral grains (black, brown, colored).

4. Cover the entire area with wood chips six inches deep or with leaves twelve inches deep. Do a pH test, and soil test. Record all information. Keep notes and observations on all work and supplies used. Let the material sit all year. The only thing you do is observe it, weed it, or walk on it. Build a compost.

5. Best results will be obtained when the materials are put on the soil in the Fall, to take advantage of the cold weather.

6. In Spring the volume of leaves and/or chips will be reduced, due to gravity, rains and compaction by snows.

7. By mid-Summer the leaves will be decomposed and become a part of the soils. Most of the chips will have broken down.

8. In shade, organic matter breaks down slowly—in full sun the rate is normal.

9. Test your soils again and record. Do this in the Spring, Summer and Fall. Get to know your soils. Note and record. Keep good records.

10. In August or September, till, chisel plow, disc or dig the soil. Turn under all materials. If your materials are thoroughly decomposed in the Spring, till, chisel plow, disc, and dig the soil at that time. Plant a cover crop of legumes.

11. Order all rock fertilizers. Spread over surface in September or October, depending on the soil conditions and temperatures. No more than four hours of physical work per day. Conserve energy. Apply rock minerals at the square foot formula. Till all rock fertilizers under. Spread dolomitic limestone to create a pH between 6.5

and 7.0.

12. October-November. Get leaves or wood chips and spread. Spread chips three to four inches thick and leaves six to eight inches thick. Do a pH test and record.

13. For the Winter, watch it. Enjoy the rain, snow and wind. Realize in yourself, what all this good material will do for your new plants. Plants have a spiritual side to them just like you. All animals and plants do have a spirit unique to their individualities.

14. In the Spring, spread the entire area with either sand or clay, to create a balance in volume between the clay and sand. Till under several times. Wait several weeks. Take a pH test. Re-analyze your soil. If more sand or clay is needed, add according to create a 50:50 ratio. Remove all rocks greater than one inch. Reduce the rocks in new garden area so the percent is no more than ten percent. Rocks will rise to the surface during and after heavy rains and heaving by frost action during the Winter. Spring is an excellent time to collect them. Save the rocks. Sort them. They make excellent drainage for different situations, especially rock gardens, when placed twelve to thirty inches below the surface and mixed with the soils. If your rocks are large enough, build a rock wall. Create raised beds. Provides better drainage.

15. Sow a cover crop of green manure. Choose from these: alfalfa, spring rye, vetch, red clover, crimson clover. Let grow all Summer or Fall, depending on your situation. Protect the soil from wind and water erosion. Till, chisel plow, disc or dig it under in August or early September. Allow the cover crop to decompose. Do another soil test and take the pH. Record. Analyze the results over the years and see the difference that you have made. Then ask yourself: Do I need any more dolomitic limestone, clay, sand, and/or organic matter? If the answer is "YES," then do it now. Spread the compost that you have made over the past several years, over the entire garden or farm area and turn into the top six inches. Cover the area again with leaves, wood chips or sow a cover crop to protect your now-good soil from Winter erosion.

16. Plant in the Spring or wait until the Summer or Fall. Protect the soil after turning it under and planting. Stock pile leaves and chips in fenced areas. Use them around new plants. If the soil is low in its nitrogen content, spread cottonseed meal at the rate of three pounds per 1,000 sq. ft. of surface area, or check with your County's Soil Conservation Service for their organic recommendation. If they don't recommend an organic material, then do your own thinking.

17. Keep all chemical fertilizers, insecticides and pesticides out of this good, natural soil. You may use WEED KILLERS, but do not use these weeds in the compost.

18. If you have a large area, do only what you can manage in a year's time. As you become more experienced, you will be able to

combine certain steps, prepare yourself better, and accomplish more each year. Now after all this hard work, you can sit back and smell the flowers.

### Wood Chips

There are several good ways of using wood chips in the perennial garden. Best chips are hardwood chips for they contain more trace elements and last longer than softwood chips. Add chips to all holes and trenches sparingly, for they add organic matter to soils and increase the humus content, providing nutrients to deep roots. After collecting or having large volumes dumped on your driveway or field, spread around all perennials. Push chips up against the stems of perennials, but allow the prostrate, evergreen stems and leaves to lie on top of the fresh chips. I wait until my peonies have been cut back to the ground, before spreading chips on my peony beds. With hostas and daylilies, I wait until cold weather has allowed the nutrients within the leaves to recede into the plant's crown, before spreading chips on these beds. All plants are then covered. With semi-evergreen and evergreen daylilies and other perennials, chips are spread and brought close to the crowns. This allows the plants to breathe and grow at their leisure, throughout the Fall months. These chips will provide excellent insulation all year. They are not removed nor pulled back in the Spring from the new, emerging shoots. Strong plants, properly nourished, have the strength to push their strong shoots through the chip layer, without adverse effect. Removing chips from around perennials is detrimental and reduces the chip's capacity to retain moisture. We never know how much rain we will receive in the Spring and Summer. The longer the ground remains moist and cool, the longer and better perennials will grow.

Chips have greatly reduced Spring seeding. The top surface of the chip layer has been bleached by the sun's rays, but underneath the crust, the chips are gradually decomposing. Sprinkle cottonseed meal, just before a rain, to allow the particles to settle and lodge between the chips. They will dissolve in the decomposing layer to offset the nitrogen depletion produced by decomposition. Chips spread on the ground are for the short term. Chips can also be stockpiled in fenced areas for the long term. When piled in the Fall, most of the tannic acid will be dissolved and leached out over the first Winter. They change color and will be brown in the first Spring. They may be used for mulching. When chips are left in the same fenced area until after the second Winter, the original chip mass has been reduced and broken down even more. This mass is now brown-black and when turned will exude earthworms. Chips saved in neat, rectangular fenced areas are readily accessible for use throughout the year. Mulch three to six inches, depending on circumstances. As with compost, I have at least two fenced areas filled with wood chips, so I have

a constant, inexpensive supply of this important organic matter on hand, for any garden use.



## MATERIAL SOURCES

1. The Espoma Company  
6 Espoma Road  
Millville, NJ 08332

Espoma packages and distributes phosphate rock, greensand, cottonseed meal, bonemeal, Hollytone, Bulbtooe and other natural products, both for the wholesale and retail market.

2. Sea Born Subsidiary  
Lane, Inc.  
P. O. Box 204  
Charles City, Iowa 50616

Sea Born manufactures and distributes fish emulsion and liquid seaweed products, both wholesale and for the retail market.

3. Dolomite limestone is readily available at more hardware and commercial fertilizer companies. It may be purchased in 40 or 50 pound bags and also by the ton. Check for prices and distribution.

4. Sand—buy in bulk. One cubic yard is the equivalent of one ton. It is less expensive by the ton or truckload than by the bag. Many different grades of sand are usually available. I have had better results when I can get the dirtiest sand possible, since its particle size is mixed and it contains trace mineral particles. It is also less expensive than clean, concrete sand. If you can find river sand, buy it—it is the best.

5. Clay—some distributors will supply top soil. Be careful. Just because it looks good, due to its darker color, do not purchase it until you have analyzed it for pH and mineralogical content. Ask for a sample.

Development for residential and commercial buildings usually have excesses of clay or soils from excavations that they cannot use. State and county road building crews also have extra soils which must be hauled away. Consult the job foreman and tell him sincerely why you need his clay. Analyze a sample beforehand and be sure it contains biotite and muscovite flakes. The more flakes the better the clay. Sometimes the foreman will volunteer to have the soil hauled for you or load it in your truck. Politely accept their offer for you might get more than you think.

6. Pebbles or smaller stones, less than one-inch, can be purchased at the same building supply company that supplies the sand. The more colorful the stones, the more minerals. Rocks called diabase, pegmatites, gangue, stones used for fill and paving usually

have minerals within their structures. Use your best judgment.

7. Wood chips can be obtained, usually free, from tree surgeons and electrical companies whose crews always cut branches from around electrical lines. Wait for storms. The more you ask the more you get. Some counties collect Christmas trees, shred them, and distribute the chips across the county for gardens.

8. Leaves—every municipality collects leaves in the Fall and takes them to the local solid waste facility. Find the person in charge and ask them to deliver you truckloads. They will usually give it to you free.

## CONCLUSION

The peony species were created by Nature in her best soils and climates, suitable for their generations. After their creation, it has taken millions of years to evolve, multiply, prosper and distribute themselves, by seed, to many areas of the temperate zones. Aesthetically, peonies are a flowering tribute and reflection of the majestic and magnificent mountain ranges where they were first created. Pause and look at a double peony from the side. Does it remind you of the shape of a great mountain? In order for the peony to remain the king of flowers, it must be given nourishment fit for a king. Those of us who grow and distribute peonies, have the responsibility of preserving this wonderful species and all her beautiful new cultivars and hybrids in the most genuine condition for it to remain the king of flowers. This is our responsibility in the Creator's plan.

### Recommended Readings

1. Handbook of the Peony, 5th Edition, American Peony Society, 1989.
2. How to Grow Vegetables and Fruits by the Organic Method. J. I. Rodale, Editor in Chief. Rodale Press, Emmaus, PA 1961.
3. The Secret Life of Plants. Peter Tompkins and Christopher Bird. Harper and Row, New York, 1973. Hardback and paperback.
4. The Secrets of the Soil, New Age Solutions for Restoring Our Planet. Peter Tompkins and Christopher Bird, Harper and Row, 1989.
5. Weeds and What They Tell. Ehrenfried E. Pfeiffer, Bio-Dynamic Farming and Gardening Association, Inc., Kimberton, PA 1970.
6. Wyman's Gardening Encyclopedia. Donald Wyman, MacMillan, New York, 1977.

## REGISTRATIONS

**MATTIE GLOCKA** (Joseph R. Glocka, West Allis, Wisconsin), Aug. 15, 1997.

Seedling #X-14. Parentage unknown. First bloomed 1987. Single lactiflora, flesh pink, coral, nice cup form, with huge dark yellow stamen cluster, pollen heavy, seeds. Lacinated petals bearing purple tinted flares, burgundy tipped carpels. Two to three side buds per stem. 30-36 inches in height, dark green glossy foliage, with exceptionally sturdy stems, storm resistant. Most reliable, with good substance, profuse bloomer, mid-season. 1983 seedling exhibited at American Peony Society exhibition.

**NINA'S MEMORY** (Anne Oveson, Wallowa, Oregon), Aug. 26, 1997.

Seedling #EW 2-94. Parentage **Early Windflower** x **E. W. or Windchimes**. First bloomed 1992. Single hybrid. Red to rose, tubular with eight petals, somewhat overlapping 2-1/4 x 1" wide. Retains tubular shape several days, opening to a goblet. Has stamens, pollen and seeds. Stem strength good, flowers nod on stem as **Early Windflower**. Early but frost resistant, temperature 24° did not damage the buds. Vigorous. Nine stalks on 3-year-old plant. Dark green foliage to the ground. Named for my mother.

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## SPECIES PEONY INTERNATIONAL NETWORK MEETING 1997 IN SWITZERLAND MAY 27TH TO JUNE 1ST, 1997

*by Gisela Schmiemann, Kotn, Germany*

The Species peony meeting 1997 took place close to Zurich, Switzerland. Walter Good did an excellent job organizing this year's meeting. 18 members from seven different European countries met, some being new members. We regret we couldn't welcome members from all European countries as discussions on peonies would have received more attention. This year's meeting was quite different from last year's. The opening of the peony collection in Wadenswil and an excursion to the natural habitat of *peonia officinalis villosa* were interesting highlights.

The Program started in the morning when we had the chance to visit a place with *Dictamnus albus*, growing in free nature. Afterwards we were welcomed in the Nursery of Mr. Frei, who has a well-known Nursery for wild plants in the north of Zurich. Mr. Frei has a good stock of wild peonies and some fine American and European cultivars. After a fine lunch in a restaurant from where we enjoyed a wonderful view over Switzerland to the Alps, the afternoon was reserved for a visit in the Botanical Garden Zurich. There are quite a

few species which have grown here for a very long time, which gives a good impression of the older plants of *P. lutea*, *P. potaninii*, *P. delavayi*, as well as herbaceous species. The evening served for relaxation and a serenade in the church of Russikon.

The second day took us to the Botanical Garden Bruglingen Basel. Here the collection of old European cultivars of irises was in full bloom. Also, a small collection of herbaceous peony cultivars were donated—as was the iris collection by the Nursery of Graf von Zeppelin so they could be admired.

The afternoon left some time for our own activities and some members took the chance to drive another hour to visit the Nursery of Graf von Zeppelin. Here fields of peonies, accompanied by the most beautiful varieties of papaver orientale and irises were in full bloom, and fascinated this lovely peaceful countryside.

Time was too short to visit an extraordinary garden in Konigsfeld that was on the program. Mr. and Mrs. Bolsterli could present us a lovely well-cared-for garden of small size. The traditional border, a formal garden with trimmed box, a shade-garden and an attractive vegetable garden were well arranged in an amazing small sized area.

The evening introduced several Swiss specialties. Walter Good's birthday was celebrated. Good wine, good food, and the music of the barrel organ along with suitable weather, created a harmonious atmosphere and ample chance for communication. The Friday turned out to be a very strenuous day as this was the day for the opening of the peony collection at Wadenswil. The morning, however, was reserved for the species members to show their slides of peonies as seen in their natural habitat or some interesting cultivars, to discuss and reflect questions and other subjects, and tendencies concerning the peonies species as well as cultivars.

Time passed too fast as it turned out that the members really were involved and had great interest to exchange experiences. The afternoon presented talks held by Species members. They had been invited to give talks at the opening ceremony of the Peony Collection in Wadenswil. (In his invitation letter, Walter Good described to the Species members the aim and intention of this remarkable collection of 260 cultivars and species so far. You can see on the drawing how they have been arranged). Michele Riviere, the famous French peony breeder showed the development of the tree peonies in China and Japan, then the crossings with *P. lutea*, *P. delavayi* and *potaninii*, and finally presented some of the herbaceous peonies. The slides were taken in his Nursery. Heinz Klose, a German breeder, talked about herbaceous peonies. He mainly presented the possibilities of how cut flowers can be preserved and what to do to arrange a peony show with thousands of peony flowers ready to bloom for a week's exposition.

Prof. G. L. Osti, one of the best connoisseurs of species, shared



his experiences and knowledge of the Chinese wild peonies. With a great sense of humor he described the obstacles and successes of his search for peonies during two excursions in such a different world and culture as China. Walter Good who initiated the peony collection in Wadenswil and who put quite some effort in organizing and supervising the plants gave an informative introduction of the development and progress made with Itoh Hybrids.

Last, there was a presentation of a CD Rom production developed by one of the students of the engineer-school in Wadenswil. The CD which is available gives possibilities to recall a large variety of dates connected with the peony.

Wadenswil is not only meant to be a peony collection but also a place for information and research.

The opening ceremony of the Peony collection followed. The Species members had another chance to discuss questions concerning peonies, and to show more slides of their peonies species as well as hybrids.

The last day was a travel to Lugano where a railway took us to Monte Generoso a site with *P. officinalis villosa*. The mountains presented us a paradise of alpine plants. The peony demanded quite a strenuous search and walk, but success lets us forget the pain. The next morning we had an unexpected quickly organized surprise: Sir Peter Smithers welcomed us and led us around his garden. A fabulous end of a most successful week for all Species members!

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## IVIE PEONIES

I have just received your September 1997 *Bulletin* and what a joy it is to read as I do cover to cover. I started collecting peonies ten years ago and I now have 345 different plants in my yard. I'm running out of room so I must be very careful in my future choices of new varieties for my limited space. My peonies begin to bloom usually around April 20, and my last blooms are cut off usually around July 10th. I enjoy these wonderful plants, and I truly love to give the flowers to my friends, neighbors, and any flower lover that stops by my home.

As a life-time member of the American Peony Society, I look forward to the day when I will be free to attend the Society's Convention, and join with others in praise of the flower of our age. Thank you again for your tireless efforts in making the American Peony Society a living breathing reality.

**Donald S. Ivie, Oak Harbor, WA 98277**

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# CHANGING TIMES AND THE COMPUTER

by Ken Liberty, 23 Ohio St., Bangor, Maine 04401

Have finished reading my September 1997 *Bulletin* from cover to cover, and have enjoyed every word right down to the advertisements. The use of the colored pictures of a peony flower on the front and back covers makes the *Bulletin* especially attractive. And it whets the appetite of we Peony lovers who always think they'd like to find room for just one or two new plants. I save each *Bulletin* in an orderly fashion in my bookcase, where I can go back to them for reference. The material in them is timeless, bound in a convenient format and form, using durable paper.

I have just completed my intricate work on the computer. I can never picture a time when my *Bulletin* would arrive by computer, instead of in my mailbox. I now have more pieces of paper printed out by my computer than I can keep track of, and except in rare instances, they are not very easy to access for future reference. Certainly our convenient quarterly *Bulletin*, which is so well put together by yourself, and mailed to us to read at any time or place we may choose, is the preferred vehicle of communication for most of us amateur peony gardeners. Computers are great for flash news, which needs to be disseminated quickly to many people at once. But, in my opinion, it could never take the place of our *Bulletin*. The computer might someday supplement our *Bulletin*, but should never supersede it.

We had a relatively open Winter for 1996-7 with very little snow-fall. It always seemed to warm up just enough to rain and not snow. The lack of insulation from snow on the ground was not very beneficial to some peonies. And then we had a very cold late Spring, which delayed things by about two to three weeks. But once the peonies got going, however late, they moved right along. For the most part they came into bloom later, but I can enjoy them whenever they blossom, without regard to the month. Most peonies bloomed well and I probably had more in bloom in July, than I usually do. And for the most part, the heat did not seem to ruin the buds this year. So all in all it was a great peony year. All of my tree peonies survived without any special protection, so apparently they are tougher than we may think. In a couple of cases, plants which usually blossom did not. So we hope for better results next year.

Of all the flowers I grow and see others grow, peonies are by far the most wonderful of flowers and plants. They require so little fussing with and are so free of diseases and insect problems, I can't imagine anyone not growing them. They are my all-time favorite.

★ ★ ★ ★

# **MOST OF WORLD—CHINESE TREE PEONY**

*By Wu Jingxu, General Manager & Senior Agronomist, working in  
Luoyang, Huafeng Ltd. Co. for Peony & Horticulture  
(Address: No. 3 Daonan Rd., Luoyang, Henan, China 471000)*

Peony i.e. tree and herbaceous peony is one of the most famous and precious flower plants in the world as well as inherently special product of China. Her flower is huge, and shape is beautiful, color is gaudy and changeable. There are many kinds of peony which is a mass of lush branches and leaves. Peony is rythmically tall and straight and its value for enjoyment is very high. From ancient times, peony has always borne the good reputation of "ethereal color and celestial fragrance", "King of Flowers", and "magical flower". And it is all along honored to be "National Flower".

Chinese people all through ages regard peony as mascot, as the symbol of happiness, peace, prosperity and thriving on earth. The peonies are cultivated all over China and its sweet smell surrounds people. The folktales, poems and proses that have peony as their subject are well known to every house and individual and spread widely. The painting and articles of handicraft that have peony as subject have many kinds of posture which is designed artistically and in a good taste. They are characterized by China and oriental nation's artistical style. The peony flower fair that has a subject of peony is very lively and attracts visitors from all directions to come to enjoy flowers, tour and hold business talks, etc.

Cortex moutan, traditional Chinese medicine, processed with peony's roots, has been regarded as famous and precious medicine from ancient times. It has functions of clearing away heat, activating blood circulation, removing blood stasis, lowering blood pressure, and resistance to bacteria, etc.

As an emissary to cultural exchange, Chinese peony was introduced into Japan as far back as 18th century, into Europe in the 17th century. And it was also carried out into England in 18th century, into France and America in 19th century, which made those countries develop their own good peony cultivars and breed lines. A lot of practical data that new varieties of Chinese peony were created under the condition of artificial cultivation was used by Darwin as one of examples to his theory of natural selection and artificial selection.

## **I. Peony's history and present condition.**

The cultivation of Chinese peony has a very long history. The peony's named varieties are so abundant, amount so large, flower color and style so complete, that it is thought of by most of the world as the first in the world or "World's Champion." As early as over 1000 years ago, it is very popular all over the world that "luoyang peonies

are the best under the heaven". According to investigation and record of historical books such as "Mountain and Sea Cannon", "Ancient and Modern Annotation", "Chinese Materia Medica By Mr. Wu", "Chinese Materia Medica By Shengguong", etc., Chinese peonies were planted in the age as early as "Dayu and Baiyi" times (about 2100 B.C.), till now. It has a history of more than 4000 years. The peony was used as medicine as far back as King Huang and King Yan times (about 3100 B.C.) which has a history of over 5000 years till now.

Up to Nanbei Dynasty (420–581), peony began to be planted as ornamental plants, but peonies planted basically as folk medical material whose colors and varieties are simplistic are only wild peonies (its colors are mainly white). Up to Sui Dynasty (581–618), the peony had become a kind of famous and precious ornamental plant. People had tamed the wild peonies and cultivated artificially, and turned peonies of folk medical materials into the peonies for display in the courtyard. And peonies began to have 3 kinds of colors which are yellow, pink, and red, and 12 varieties. Peonies' cultivating quantity and sphere began to enlarge gradually from Luoyang to its vicinity. On the basis of folk cultivation, the peonies began to be introduced into royal gardens and VIPS' gardens of that time, which formed a preliminary situation of centralized planting and enjoying.

During Tang Dynasty (618–907) the cultivation of peonies began to thrive. The peonies planted for marvellous spectacles in royal court, in the rich's courtyard and in countrysides, are very popular. People also had begun a try of forcing cultivation to peonies. Peonies had developed in yellow, white, pink, red, purple color, and altogether 11 varieties.

During Song Dynasty (960-1279), Chinese peony's planting center moved to Luoyang from Changan. Peony's color and varieties began to increase day by day. On the former basis peony's colors added to green color and motley (multi-color) and its varieties are 114. Meanwhile, the cultivating technique was more perfect and systematic, and people had begun to use the way of grafting to regularize bud mutation and excellent plants, etc., and the first special book on peony—"About Luoyang Peony" by Ouyangxiu—came into being and with it the saying of "Luoyang peony is the best under heaven" turned up. But up to South Song Dynasty (1127–1279), the planting centre of peony moved southwards, from Luoyang, Kaifeng in the north to Tianpeng, Chengdu, Hangzhon, etc. in the south. In those planting areas of the south, before all the others, the better northern peonies were cultivated and naturally hybridized with a small amount of local varieties, and then, through grafting and seedage, the culivar of "ecological type" was selected and raised out, which suited the southern climate better.

Yuan Dynasty (1279–1368) is a dark period in the history of Chi-

nese peony's development. Till that time, the varieties of peonies bred in the past were almost lost—only Shou An Hong, Zhuangyuan Hong and YuBan Bai varieties, etc. were left.

During Ming Dynasty (1368–1644), in the places of Anhui province's Bozhou, Ningguo, and Shandong province's Caozhou, peonies flourished and its color varieties got very rich, two colors of black and blue turned out. Altogether there were more than 200 new varieties in nine color lines. The total amount of varieties of the whole country had reached 381.

After new China was founded, Chinese peony restored and developed more rapidly. At present, the peonies are planted in 30 provinces and cities and autonomous regions all over China and its natural covering district has touched upon 29 provinces and cities and autonomous regions. The planting area amounts to more than 3000 hectares and there are over 1200 varieties and 12 wild varieties which had been denominated. Among them, the area of peonies planted in parks, both sides of streets and courtyard, which mainly aim at greening, beautifying and enjoying, amounted to over 400 hectares. The area of commercial peonies planted in nurseries and gardens, which aim at reproducing commercial plants (nursery stocks) amounted to over 1500 hectares or so. Henan province's Luoyang and Shandong province's Heze have become the largest place of enjoying peonies and the base of producing and exporting commercial plants. In recent years, the peonies have been exported to more than 20 countries and districts, and were well received for being famous for its abundant varieties, good quality and low price.

In order to bring peony's economic returns and social effect into full play better, since the year 1983, the "Peony Flower Fair" in different scales were held one after another in many places among which Luoyang is ahead in the blooming season, which attracts nearly ten million visitors from home and abroad every year to come enjoy flowers, sightseeing, touring and launching trade activities, and gained 20 billion Renmibi as its economic returns.

## II. Peony's character and botanical feature.

Peony's deciduous shrub belonging to Shaoyao (herbaceous peony) grows at Shaoyao family that originally grew in the northwest of China. There are tall peonies and short peonies which are mainly 0.3 to 3 meters high. The peonies have strong growing ways and weak ones, have straight branches and slanting ones. There are 5 kinds of peony shapes, which are dwarf, open, loose, straight and single-trunk. The dwarfing peony is small and exquisite with twigs well-knit. The open one is plumply round and a little bit slanting with graceful and straight twigs. The loose one is unrestrained with branches curved. The straight one is tall and straight with branches upward. The single-trunk one is very arbor with trunk obvious.

The peony's buds include flower bud, leaf bud, insidious bud and

indeterminate bud. Their shapes are mostly like circular cone and are fat or thin, red or green. Its flowers bud is mixed bud.

The peony's leaves are alternate among which some are long or short, big or small, sharp or round, thick or thin; some are tall and straight, flatly unfolding, sparse and drifting, dense and crowded, rolled and twisted, or smooth and glossy. The leaves' colors are also changeable, some are very green just like jadeite, some are light green just like fresh willow in spring. Some are purple halo like painting brush splashing ink, some are so dark green, which reminds people of blue water in East Sea, some are red as maple-leaf.

As to peony flower, one outstanding characteristic is that its flower is great, gaudy, gracious and magnificent with rich fragrance. The flower varieties can be divided into monopetal (single) flower, multipetal (double) flower and thousand-petal flower. The flower shapes include 10 kinds: single, lotus, chrysanthemum, rose, crown, stipulary osmanthus (laurel), embroidery ball, golden ring, attics with thousand flights of steps, pavilion. The flower's color can be divided into 10 sorts: yellow, green, black, white, red, blue, purple, pink, motley color (multi-color) and changeful color. Among them, the red peonies are luminously gaudy like rising rosy clouds; the yellow ones are pretty and refine; the white ones are freshly cool and spotlessly white; the blue ones are delicate and elegant and quiet; the pink ones are tender and lovely with both color and fragrance; the purple ones are in middle grade but flashy with good taste; the green peonies and the black, changeable color and twin beauty cultivar have a distinctive style and their odors are so outstandingly wonderful that they can be called rare treasures.

The peony root is well-developed fleshy root. There are 3 kinds of root: tap root, tibroot root and intermediate root. Therefore, the peony is very drought-enduring and has great vitality. And under the natural condition the peony can still survive after it stayed for days, even tens of days, with its root exposed, but it is not wet-enduring.

The peony is characterized by "liking coldness and fearing heat, liking dryness and fearing wetness, living in higher spacious and sunny places leisurely and relaxedly" and "sprouting in the spring, dozing off in summer, rooting in autumn and taking dormancy in winter." The peony's survival temperature is 25°C to 42°C, humidity is annual rainfall of about 200–1200 mm; its favorable growing and developing temperature is 4°C–28°C, humidity is annual rainfall of 300–800 mm. The peony's survival climatic types are temperate climate, continental climate or marine climate of subfrigid zone and subtropics. The peony's suitable growing areas are most countries and districts within the northern latitude 27°–60° and Australia, New Zealand, etc.

The peony's growing temperature at the beginning is 3.6°C, the

most favorable temperature for growing is 10°–20°C, the most favorable temperature for blooming is 18°–28°C (effective accumulated temperature above 40°C is 420°C–730°C, the temperature for leaf falling and dormancy is under 10°C. The peony's phenological period in China's Luoyang is: sprouting during the period from the last ten days of January to the first ten days of February, blooming during the period from the first ten days of April to that of May, differentiating buds during the period from the last ten days of April to that of November, leaf falling and taking dormancy during the period from the last ten days of October to the first ten days of November.

According to region's distribution and some important different ecological habits, Chinese peonies can be divided into 3 main ecological types: central plains' cultivar group, northwest breed group (purple-spotted peony i.e. *P. rockii* as representative) and south varieties group. As the first varieties group, its genomic constitution is very complicated, varieties are abundant and the suitable sphere for growing is very wide, so it is the largest group of Chinese peonies and the important representative. Its amount of varieties and of planting is about 90 percent of the total amount of whole country. It is distributed mainly over Henan province's Luoyang and Shandong province's Heze, etc. As to the second group, its main characteristics are: there is purple spot in the middle of its flowers, the plant is tall, big, straight, cold-resistant and more drought-enduring, but its amount of varieties and planting is comparatively small which covers 5 percent of the total amount. It is distributed mainly over around Gansu province. As to the last group, its main characteristics are fairly heat-enduring and wetness-enduring, its amount is more small which is only about 3 percent of the total amount of whole country. It is distributed mainly over Anhui province, Sichuan province and Jiangsu province.

### III. Breeding and cultivation.

Selection and breeding of peony varieties also has quite a long history as its cultivating does in China. It was recorded that the work of taming wild peonies into domestic peonies had been developed as early as Sui-Tang Dynasty. The new hybrids were selected out by the ways of natural hybridization and seedage and turning wild peonies into domestic planting. Up to the end of Qing Dynasty, peony varieties of the whole country had reached 160 kinds. After the new China was founded, through many ways such as radiative mutation breeding, artificial hybridization, natural hybridization, seedage and bud mutation, etc., more than 1000 new kinds of peonies were selectively bred out, which are more beautiful and singular and fit for diversified demands from consumers.

Introducing and taming wild peony is the initial methods and means to select varieties. Bud mutation and branch mutation which were used to select varieties till now is the ancient methods only next



to the farmer. For instance, as far away as Tang Dynasty and Song Dynasty, Chinese people used the later-seedage, that is to say, using naturally hybridized seeds to select the "Imperial Yellow Robe" and "Twin Beauty (Bi-colors red)", etc. It is recorded that this method existed as early as Ming Dynasty. At present, it is used very widely. It is estimated that half of the existing cultivars are selected by this method. During the period from 1983 to 1994, workmates and we selected out over 20 comparatively new good varieties among the seedlings which were produced in over 10 kilograms naturally hybridized seeds.

The method of artificial hybridization and artificial supplementary pollination began to be applied in 1930's. This method is one of the most important and command-used breeding methods in China at present. According to a rough statistic, about 40 percent of cultivars in China were bred by this method. For example, in 1962, Luoyang's Wangcheng Park raised over 40 new cultivars through this method. Radiative breeding and distant hybridization were applied a little now and a little then in China. Shandong Agriculture College and Luoyang Peony Research Institute have used 3000–4000 Roentgen rays of 60°C to irradiate peony seeds and scale buds, and achieved initial results. Luoyang and Heze have got the seeds that were produced through the hybridization of tree peony and herbaceous peony.

At present, Chinese peony's cultivation forms mainly are: uncovered fields cultivation, courtyard cultivation, forcing cultivation (including protecting culture, artificial low-temperature-control cultivation, and high-latitude allopatry cultivation or going up hills cultivation), pot culture and cutting flower culture, etc. Through comprehensively flexible utilization to these cultivation forms, the problem of whole-year supply of Chinese peony has been basically solved. The peony products have extended all over the country and even to the world meanwhile, thanks to many famous scientific and technical workers and flower growers' joint efforts, the management to peony culture and breeding scientific—technical fruits are constantly emerging. Now, China has variably become the largest base of peony growing, and the center of peony cultivation and research in the world.

In order to spread Chinese peony's perfectness, we wholeheartedly hope friends all over the world would plant Chinese peony, and wish all people to enjoy this kind of special beauty. If you need any plants or information about it, etc., please contact our company directly. We can completely guarantee to satisfy you.

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

# INFORMATION FOR REGIONAL DISTRICTS

*(From Certificate of Incorporation of American Peony Society)*

## **Article X—Regional Districts and Clubs**

1. Every active member of a Regional District must be an active member of the American Peony Society. Each active member of the Society automatically becomes a member of the Regional District in which he resides.

2. Each organized Regional District must have as a minimum a President and a Secretary and may adopt rules and regulations, dues and by-laws as they may see fit to adopt, provided none are in violation of the Articles of Incorporation, Constitution or By-Laws of this Society. A Regional District must have at least 10 active members to qualify as an organized District.

3. Each Regional District is entitled to representation on the Board of Directors.

4. The area served by the Society shall be divided into the following Regional Districts:

District 1. Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.

District 2. New York, New Jersey, Pennsylvania and Delaware.

District 3. Maryland, West Virginia, District of Columbia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama and Mississippi.

District 4. Michigan, Ohio, Indiana.

District 5. Illinois and Wisconsin.

District 6. Minnesota, Iowa, South Dakota, North Dakota, Nebraska, Montana and Wyoming.

District 7. Missouri, Kansas, Colorado, Oklahoma, Texas, Arkansas, Louisiana and New Mexico.

District 8. Washington, Oregon, California, Idaho, Utah, Nevada, Arizona.

District 9. Canada, Alaska and all other areas not embraced in other Districts.

### **REGIONAL DISTRICT # 7**

#### **Heartland Peony Society Fall 1997 Meeting**

##### **Kansas City, Missouri**

##### **by Dr. James W. Waddick, President**

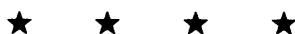
On Saturday Oct. 11, 1997, the Heartland Peony Society had its second Fall meeting in Overland Park, Kansas. It was another resounding success. Everyone had a great day, and many went home with peonies.

We started with a busy official meeting and made Helen Reynolds of El Dorado, KS our first official "Honorary Member." Helen has donated more peonies than we can count and these donations have helped to get us on our feet financially, allowed us to invite in a speaker, and make our Spring tour to Gilbert H. Wild and Sons Nursery.

We made plans for our coming Spring tour to Hollingsworth Nursery in Maryville, MO. Our nominating committee suggested, and our members approved, a new slate of officers for next year: Don Hollingsworth—President, Jackie Stoaks—Vice President, Louanna Simmons—Secretary, and Bill Desmone continuing as Treasurer. We hope to develop more committees for our Spring Tour, and most important a new Cut Flower Show Committee. We hope to have an informal cut flower next Spring and see how we do. Who knows—we may gain enough confidence to invite the American Peony Society some year for its Annual Meeting here.

Some of the participants gathered at President Jim Waddick's house that evening to celebrate another great peony day. There was food galore and we all ate heartily. When dinner was over we talked about peonies. Everyone went home enlightened and happy

Next year we will visit the Hollingsworth Nursery, and have our first trial-run cut flower show.



## SOIL AND TEMPERATURE HAS ITS EFFECT ON THE BLOOM OF THE PEONY

"It is well known that peonies seldom produce blooms which are typical of the variety until the young plants have become established. This usually takes two to five years, depending on the variety. Even after the plant is well established, its condition as to vigor may cause variation in the type of flowers it produces. It is therefore a very difficult matter to describe any given variety with great accuracy, and allowance must always be made for varietal variations." For example, **Mons. Martin Cahuzac** produces a loose, semi-double bloom, with many visible stamens, on poorly established plants, especially on a light soil, while clumps of this variety, well established on a clay loam, bear flowers of a compact, semi-rose type with only occasional concealed stamens. Aside from the influence of the length of time the plants have been established, the kind of soil often makes a difference in the characteristic bloom of a variety.

Weather also has an effect on the bloom of the peony. In a cold Spring, the color of peonies will be considerably darker. **John Harvard**, an early single dark red hybrid, will have blooms that are black. This single may sometimes be almost double, depending on conditions of soil and temperature. The pinks are changeable also—in hot weather at bloom time, many are lighter and some of the light pinks and blush will be almost white.

Don't be surprised if you see **Miss America** bloom a light pink. Now all of these variations are an exception—all depends on the soil condition, and the temperature at bloom time.

One of the best questions of the week is: "Do we have a blue peony?" The answer: "No."

Program, show schedule, place, and date will be in the *March Bulletin*.

★ ★ ★ ★  
**PEONY SHOWS**

*by G. W. Peyton, Rapidan, VA*

It will be a great day for our shows when our Board of Directors can get to the point where they can arrange the place for the show three or more years in advance and then we shall have no excuse to offer for not having every class amply represented by blooms from mature plants, and so of the best quality. Again it seems to me that every member of this Society who, by any chance could possibly make an exhibit, should take pride in trying his best to make as fine an exhibit as possible in just as many classes as possible, and bend every effort to this end. They should realize that it is a great honor to be permitted to stage the greatest peony show in the world and they should be willing to spend their time and their money to the limit to make the show a great success.

It takes time, it takes money, but above all, it takes hard, painstaking work, especially in handling the blooms, but they should be willing to do it for the sake of the honor of their show. The show committee members should be appointed and begin work as soon as they know they will have the show. They should list all prospective exhibitors and get them to promise an exhibit. They should even go so far as to get a very good idea of the classes in which each exhibitor will exhibit and have them prepared to make the very best possible exhibit in these classes. They should be prepared to show everyone how best to prepare their plants for producing the best blooms; they should have everyone in the cutting seasons before the show make personal experiments in cutting and storing their blooms so that when the year of the show comes they will know what to do and when to do it, for the quality of the bloom depends very largely on proper cutting and storage. They should especially locate plantings of singles, Japs and tree peonies and, if possible, have plantings made of these and the new ones so that these very interesting classes may be well filled. The general public goes to these shows to see beauty; many to pick out varieties they would like to plant, and so it must be seen so that we have beauty to show them and that they will see the very best of the old and the new shown in the very best way, and only by proper preparation for several years beforehand can this be done.

Our peony men go to these shows to see what new thing is worthwhile and so every effort should be made to have as many of the new things shown as possibly can be and so let all see for themselves the manner of best it is.

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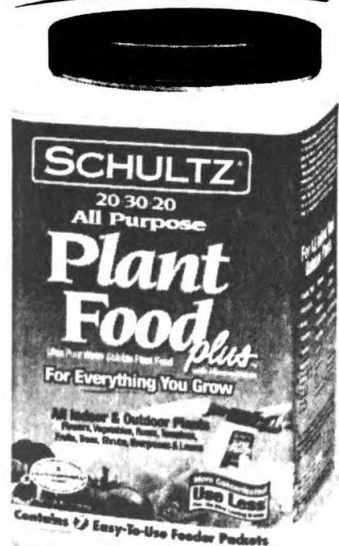
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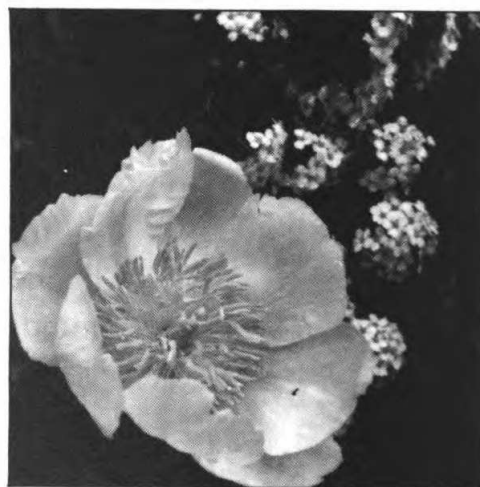
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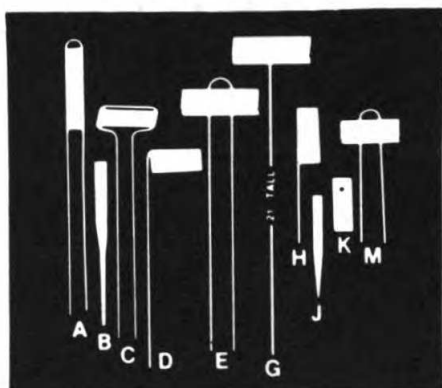
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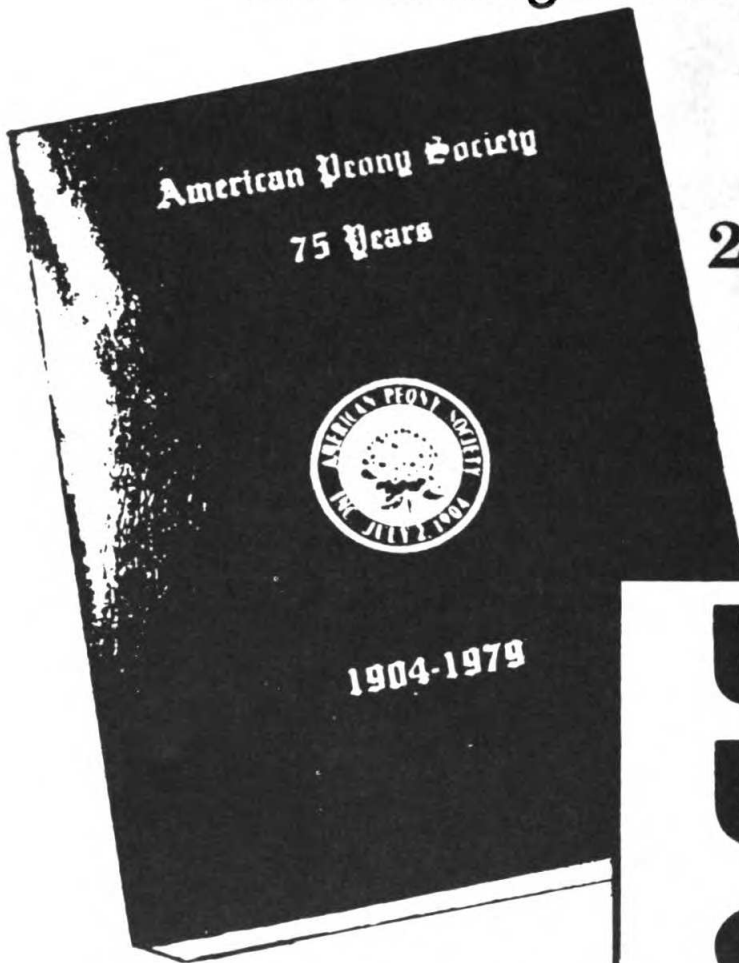
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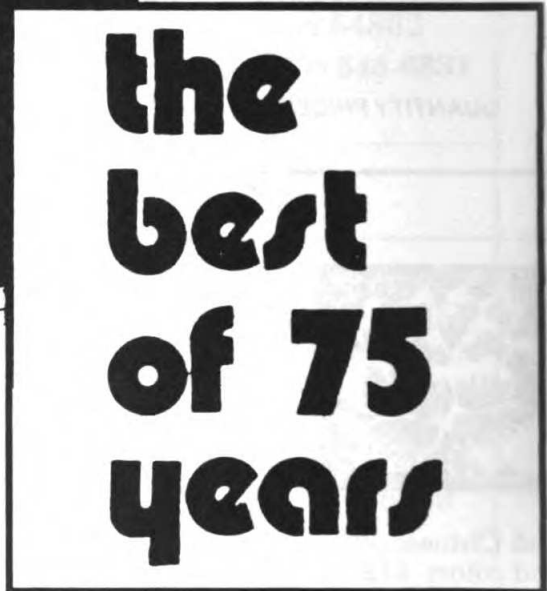
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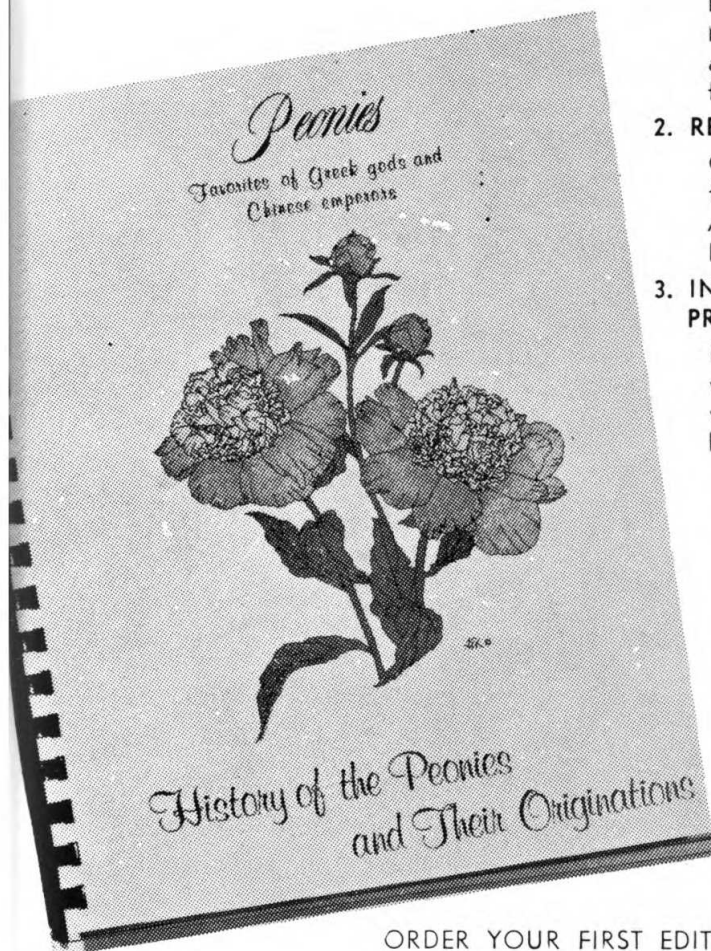
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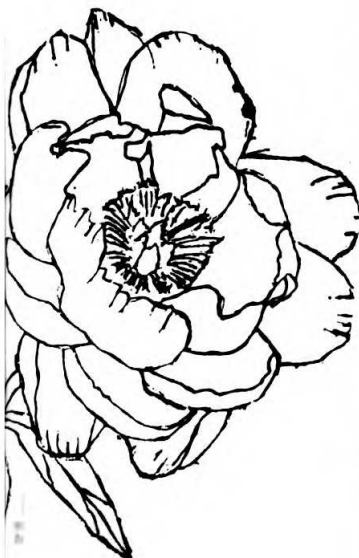
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