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# PEM RAMBLINGS

Getting Ready for Spring



## IT IS HARD TO BELIEVE, BUT SPRING WILL COME

Are you ready for the season of discovery and repotting? We certainly have had one of our true northeast winters. Considering it was overdue by about 5 years, I think we did well. **BE SURE TO CHECK YOUR WINTER STORAGE AREAS AND WATER IF NECESSARY.**

Hopefully you marked your bonsai last fall to indicate which ones need repotting. For me, I hope to repot just about everything this spring because last year was such a major growing season. I know that all the trees I transplanted in the greenhouse in January had pots full of roots. Taking this as a representation of the hardier stock in storage, I think everything will need repotting.

So during March stock up on soils, fertilizers, etc to be ready. If you plan on new pots for any trees and

have not located ones in your collection, take the bonsai in need with you when you go to select pots or at least a photo and measurements.

In this issue there is an article on repotting techniques. I look forward to hearing from your experiences. Please note that my experiences and knowledge are based on my work with bonsai in zone 4. For those of you reading this from warmer places, ask the locals for potting advice please.



MY GREENHOUSE IS OVERFLOWING WITH LOTS OF GOODIES WANTING TO BE STYLED. COME AND VISIT.

# **PYRACANTHA COCCINEA**

**firethorne**



**Artist: Bonsai Mike**



from the Daiju-en family bonsai exhibit

**Artist: Al Keppler**



**Pyracantha** is an evergreen shrub that grows to 5 meters in height and width. It grows quickly and is trouble free for bonsai.

The leaves remain on the tree year round, with older leaves turning yellow and then are replaced by fresh leaves. The species has thorns which may be removed without harming the plant.

It blooms early in spring and sets berries. The color of the flowers is white but the berries vary from yellows to oranges to reds. The color ripens in fall and will remain for the winter. To insure a good flowering for the next season, remove the berries in late fall.

**CULTIVATION** Grow this species in full sun or eastern exposure (when the sun is strong). Protect from cold winds. Although it can take light frosts, it is not fully hardy in the Northeast and needs good winter protection. I store mine in my greenhouse and I have friends who store it between 32 and 39 degrees F indoors in winter. Keep the plants as cool as possible in winter without solid freezing of the species.

Transplant just as growth begins. Repot only as needed. They do not like their roots disturbed. They also flower and fruit best when root bound. Due to this consider removing flowers after repotting so no fruit forms that will draw on the energy of the plant. Fertilize throughout the growing season. Use super phosphate once a month to insure great flowering during the next growing season.

**PRUNING** Do major pruning in early spring. Wiring must be done early as branches can become totally stiff quickly. During the growing season you can cut off larger leaves to control leaf size. Do not defoliate this species. Leaf size does reduce on plants in small containers.

**PROPAGATION** Take cuttings or air layer in summer. These grow quickly from cutting.

**PESTS AND DISEASES** Aphids, caterpillars, scale insects, leaf miners, fireblight are possible. Keeping the plant clean and in a position with good circulation will keep this plant healthy.

**pfm bonsai is having a shohin pyracantha workshop in March....join us and add one of these to your collection**



# TRANSPLANTING

## The art and science of transplanting trees for survival, health and nebari development

I have learned that transplanting is probably the most terrifying task in the bonsai world. We know that the root system is the basis of tree health. We know that removing too much roots will injure or even kill a tree. Some people avoid transplanting to the point that finally the tree weakens and eventually dies.

Therefore, to maintain the health of the bonsai, we must transplant at needed intervals.

### WHY?

- We transplant because roots need room to grow. In the ground trees can spread their roots as far as there is good soil. In a pot, the available soil is severely limited. There are a few species that grow well when root bound, but even those species eventually need to be transplanted.
- Soil in a container breaks down and compacts. This results in a lack of needed air to the roots and the inability of the soil to release nutrients to the roots and to retain the needed water.
- The pot bound tree will only develop thick roots rather than the fine feeder roots
- The lack of oxygen in the soil promotes root rot.

**So we transplant to renew the soil and to reduce the root mass to rejuvenate it and further the development of good nebari ( surface root spread).**

### WHEN?

In the late fall when I am preparing my bonsai for winter storage i check each tree to determine the condition of the root system. Full systems like in the photo above tell me that it MUST be transplanted in spring. I label bonsai in this state for definite transplanting. Some trees have less full root systems and can be labeled for possible, if time, transplanting, other can be labeled not to be transplanted since they have plenty of room in the soil mass for root growth.

Here are some indicators that transplanting is needed:

- Lack of soil in the container
- Roots are growing out of the pot
- The pot is not draining well
- Water remains on the top of the soil when watering, It takes a long time to soak in
- The leaved wilt easily even though regularly watered.

Many deciduous trees need transplanted each years while conifers whose roots grow much slower can go two or three years between transplants.



GOOD ROOTS=  
HEALTHY TREE

IN spring, after the snows have disappeared, the ground outside has thawed, and the bonsai can be removed from winter storage, I set up for transplanting.

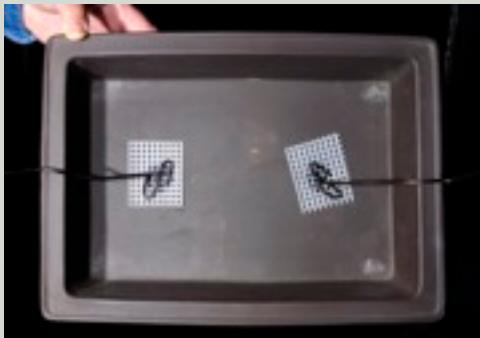
Technically we would like to do work on root systems just before spring growth begins. This can be difficult to determine so I check plants for just the barest signs of spring growth. Usually this is usually the swelling of buds in deciduous trees and dots of spring growth in junipers. Experience is the best guideline but here is the northeast if the snow is gone and the ground is not frozen, go ahead and transplant.

**At the end of this article, I have reproduced a chart that indicates the correct transplant times for the most common bonsai species.**

## WHAT SUPPLIES ARE NEEDED?

- proper soil mix for the species
  - Developing trees require more humus in the mix
  - a balance of materials is needed;
    - stone/coarse sand: for aeration and drainage
    - peat/bark: for retention of water and release of nutrients
    - baked clay ( akadama/ kamuna etc.): retaining water and buffering the pH
- screening mesh ( not too fine) to cover the drainage holes
- well draining container
- scoop for soil
- chopsticks...study ones
- sharp scissors and root pruners ( keep separate ones just for roots)
- wire cutters
- sprayer
- Aluminum wire/string
- turntable
- work tray
- container for old soil
- whisk broom
- nutrients ( if you normally put in the soil e.g. time release fertilizer, iron, super phosphate
- rooting hormone for weak root systems
- mycorrhiza spores
- sealant if cutting larger roots
- moss (optional)
- Mountain Moss (if you wish to add onto soil to develop surface roots. It keep the surface of the soil from drying out.)

Prepare your container with screening and hold wires before starting the process.



Screening and wire for two hole pot



for one hole pot

### **WHAT TYPE OF CONTAINER IS NEEDED?**

- When developing stock a terra cotta container is best because it breathes and wicks away excess moisture. It also requires more watering. It is not winter hardy. Today we often use plastic containers with holes all around. This provides the aeration needed for more rapid growth.
- Bonsai containers must have good drainage to prevent root rot...
- In addition to drainage holes, drainage can be increased with a layer of coarser soil at the bottom of the pot.
- Be sure that the container has an adequate soil volume for the healthy growth of the tree.
  - Fruiting trees and rapid growing trees require deeper pots
- The pot size for most styles of bonsai is 2/3 to 3/4 of the height of the bonsai.
- Remember to choose a pot that complements the tree's design and does not overpower the bonsai. When viewing the potted bonsai, you should notice the bonsai first, not the container!
- Bonsai pots for our hardy winter stored bonsai are constructed to be winter hardy and not to exfoliate. Pots for tropicals do not need to be so.

## **HOW?**

When transplanting, first use a wooden stick to check for surface roots. Work away all the soil and moss covering the surface roots. Use only a brush and wooden heavy round pointed stick to do this.

The next step is to work out the soil from the roots starting at the bottom from the center out and then work up the sides until all the roots are fanned out. IF the mass requires more force, a SINGLE line root hook maybe used. Insert into the mass and pull outwards in a single stroke. Finally untangle the roots and prepare to trim them.

## **WHAT DO YOU NEED TO KNOW ABOUT ROOT PRUNING BEFORE YOU START?**

- The objective for root pruning is to remove thick root system and replace them with radial compact masses of fine roots.
- Surface roots are developed as visually strong support systems, but the roots under ground need to be shallow feeder roots to work in a container's environment.
- When transplanting shorten heavily the stronger underground roots and prune highly on the weaker roots.
- Take care to balance the root mass with the foliage mass so there will be enough roots to support the tree.
- Cut root sharp and cleanly and facing downwards.
- Cover large cuts with sealing clay
- Some plants are more sensitive to root pruning than others. Learn about the species before you start cutting the roots.
- Do not wait too long to work on root system. Once the roots stiffen, they are hard to reposition.
- Larger roots of younger plants can be split in half to form two roots. Separate the halves with a stone and wrap with long fibered sphagnum moss until the wound barks over.
- If a root is needed in an area, cut the bark and brush in rooting hormone. Pack the area with fine sphagnum moss until roots form. You can also graft on a root.

There are a few types of transplanting:

- initial planting from ground to pot
- potting to a larger container or ground to promote growth. If you want more structural growth, transplant less often.
- down sizing pot size
- repotting because the root system needed reduced to keep the same container
- repotting to change the growing medium
- Emergency repotting
- repotting frequently to promote twig development and reduce leaf size

In all cases, it is better to not water just before transplanting. Dryer soil is much easier to remove from the roots.

#### From Ground to pot

- Depending on the soil around the collected tree ( or ground raised tree), you may wish to remove all the soil if you consider it detrimental to the tree's growth. Otherwise, it may be better for the tree if you remove half of the soil and replace it with the correct bonsai medium for the size and species. For deciduous trees you may remove all the of the soil. Soaking the tree root mass and using a strong spray of water will aid in this effort. For conifers, use the half method removing the front half of the soil the first year and the back half the second year. Be sure to inoculate the soil with mycorrhiza spores.
- When transferring trees from the ground work to develop a better root system that is more lateral in growth. Any tap root must be eliminated or shortened. This is needed to develop a root system that will eventually fit in a bonsai pot.
- Remember that if you need to cut away a portion of the original roots, you must balance the foliage system. If you leave too much foliage, the reduced root system will not be able to supply nutrients to the foliage.
- The process of developing a workable bonsai root system may take a few years of transplanting.
- Potting to a larger container or to the ground to accelerate growth
- In this case make sure that you are providing the tree with the best possible soil and nutrients that are proper for the species.
  - The containers that are perforated will promote better growth
  - Leaving a tree in a container longer than normal ( providing the soil is still good) will increase growth
  - When planting in the ground or in a raised bed use soil with plenty of air and good drainage.
  - Consider using a flat rock a few inches under the tree to promote lateral root growth.
  - Do not allow the roots to grow unrestricted for years. Do a shovel root pruning each year the tree is in the ground.

### Downsizing the root mass to fit into a smaller container

- If totally pot bound: comb out the roots starting at the bottom and then the sides with a study chop stick or single root hook. Then remove as much soil as you can from the front half of the soil mass. Trim the roots and repot into a suitable container
- if it is deciduous, you can remove the soil from the whole root mass

### Repotting because the root system needed reduced to keep the same container

- In this case, the root system should be at the stage that will require a simple combing out of the root system , cutting the roots and replacing the soil with fresh soil.

### Repotting to change the growing medium

- In this case, a decision has been made to try a different soil to improve the health of the tree.
- All the current soil must be carefully removed before replacing it with the new medium.
- Be sure to add in mycorrhiza spores.

### Emergency repotting

- if it is not the proper repotting season and your tree is showing signs of having used up the space and soil etc , then repot it in a larger container for the rest of the season with fresh soil all around the soil mass

### Repotting frequently to promote twig development and reduce leaf size

- By increasing the potting frequency your bonsai will put out smaller , finer twigs and leaves.
- Only do this only with a very healthy tree and not very often.
- This is usually done in the couple of years leading to a major show to increase fine twigs and help reduce leaf size on deciduous trees.

On the next pages there are charts summarizing transplanting for various species.

Ed. Note: Information in this article came from notes over the years backed up by literature including John Naka's Bonsai Techniques 1, Bonsai Today Magazine, ABS Journal and many lectures and of course confirmed by experiences of 40 years.

SPECIES	SOIL MIX	PH	TRANSPLANT TIME
Apple	Basic Mix	5-6.5	Annually before buds open
Apricot ( <i>Prunus mume</i> )	Basic Mix	5-6.5	Annually as soon as flowers die.
Azalea	Acid Soil Mix	4.5-6	Annually as soon as flowers die for young trees, as they age transplant every few years.
Beech	Basic Mix	5-6.5	Transplant in early spring before buds open.
Birch	Basic Mix	5-6.5	Transplant in early spring before buds open.
Camellia	Basic Mix	4.5-6	Transplant in spring after flowering every 2 or 3 years
Cedar	Increase sand to 50%		Transplant in early spring but carefully and lightly prune roots, every 3 years.
Cherry,flowering	Basic Mix	5.5-6.5	Transplant in early spring before buds open every 2 years
Cotoneaster	Basic Mix	6-7	Transplant in early spring before buds open.
Crape Myrtle	Basic Mix	5-6	Transplant in spring as buds swell, annually
Cryptomeria	Basic Mix	6-7	Transplant in late spring every 2 years when young, less often as they age
Elm	Increase sand to 50%	6-7	Transplant in early spring before buds opens annually
Euonymus	Basic Mix	6-8	Transplant in early spring annually
Ficus	Increase organics	6-7	Transplant in mid summer with high high temperatures
Fir	Basic Mix	5-6	Transplant in late spring every 2 years
False Cypress	Basic Mix	5-6	Transplant in mid spring every 2 years, less often as the tree ages
Ginkgo	Increase sand to 50%	6-7	Transplant in early spring just as the buds turn green annually
Hackberry	Basic Mix	6-7	Transplant in spring when buds appear annually
Hawthorne	Basic Mix	6-7	Transplant in spring as buds swell, annually

SPECIES	SOIL MIX	PH	TRANSPLANT TIME
Hemlock	50% Sand, 25% peat, 25% Clay	5-6	Annually in spring, less frequently with age.
Hornbeam	Basic Mix	6-7	Transplant in spring as buds swell, every two years
Honeysuckle	Basic Mix	6-7.5	Transplant in mid spring every 2 years
Ivy	Basic Mix	5-6.5	Transplant in early spring or early fall
Juniper	Increase sand to 50%	5-6.5	Transplant in spring preferred. Can be transplanted at other times with care.
Larch	Basic Mix	4.5-6.5	Transplant in early spring just when buds turn green annually.
Maple	Basic Mix	6-7.5	Transplant in spring as buds swell annually
Pine	increase sand to 50%	5.5-6.5	Transplant in early to mid spring every 2 to 3 years, less with age. Careful with root pruning.
Pomegranate	Basic Mix	6-7	Transplant as new shoots sprout or when new growth has hardened every two years.
Pyracantha	Basic Mix	6-8	Transplant in early spring every 2 years
Quince	Basic Mix	6-7	Transplant in late summer or early fall every two years
Sageretia	Basic Mix	6-7	Transplant in early spring in greenhouse or mid summer with higher night temperatures
Stewartia	Basic Mix with some added peat	5-6	Transplant in early spring every two years
Willow	Basic Mix	6-7	Transplant in spring or mid summer. May need it twice per year.
Winterberry	Basic Mix	5-6.5	Transplant in spring every 2 years
Wisteria	Basic Mix	5-6	Transplant as flowers begin to fade every two or three years
Yew	Increase sand to 50%	6-7	Transplant in spring every 2 or 3 years
Zelkova	Basic Mix	6-7	Transplant in spring when buds appear annually

**UPCOMING EVENTS AT PFM BONSAI.** All workshops are limited to 8 people UNLESS LESS ARE INDICATED

**MONDAY BONSAI STUDY GROUP** IS AN INFORMAL EVENING OF PIZZA AND PLAY WITH OUR TREES AND IS OPEN TO ALL. PLEASE EMAIL SO WE CAN HAVE ENOUGH PIZZA FOR ALL

DATE	Morning	Afternoon
March 1 You may register for the course Saturday morning 10AM	ABS Beginner's Course Session one...register now for this event	
March 2	Kishu Shimpaku Juniper workshop Limited to 4 \$100 including shohin tree	
March 8	Open Workshop	Intermediate Class 13
March 9	Mini Amur Maple forest workshop \$100 includes trees and pot Limited to 8	
March 15	Closed at Hamilton College	Closed
March 16 NOTE: BOTH EVENTS WILL BE OCCURRING AT THE STUDIO TODAY	MARTIN SCHMALENBERG Design workshop \$65 9-4 must pre register	Cotoneaster Workshop 10-2 Use regular or microphylla varieties \$ 75 including tree.
March 22	Closed	Closed
March 23	Pyracantha workshop 11AM \$ 60 includes tree limited to 4	Pyracantha workshop continues
March 29	Open Workshop	Intermediate Class 14
March 30	MHBS at pfm bonsai	Club workshop: PLANTING ON SLABS
April 5	Open Workshop: May be time for repotting	Intermediate Class 15
April 6	Amur Maple Mame/Shohin Workshop \$95 including tree	
April 12	FOREST WORKSHOP TBD depending on weather	
April 13	FOREST WORKSHOP TBD depending on weather	
April 25-27	Studio Closed....come to the Midatlantic Bonsai Societies	Spring Festival in East Hanover NJ

# BONSAI EVENTS TO ATTEND



**Sunrise on  
Australian Bonsai**



27th National Bonsai Convention  
21 - 24 August 2014  
QT Gold Coast, Queensland, Australia  
Registration, Headliners, Demonstrators,  
Venue and Accommodations  
[Click here](#)

**SEPTEMBER 13-14. 2014**



**4<sup>th</sup> U.S.NATIONAL BONSAI EXHIBITION**

## MidAtlantic Bonsai Societies 2014

Spring Festival April 25-27

[http://midatlanticbonsai.freeservers.com/  
fescurr.htm](http://midatlanticbonsai.freeservers.com/fescurr.htm)

BCI in Australia

August 23,2014

<http://goldcoast2014.bonsai-bci.com>

## 4th National Bonsai Exhibition

[http://www.internationalbonsai.com/store/  
1708315/uploaded/2012\\_national\\_exhibition/  
index.html](http://www.internationalbonsai.com/store/1708315/uploaded/2012_national_exhibition/index.html)



**ABS/GSBF  
Bonsai Visions of the West  
October 31,2014  
Sacramento,CA  
Save the Date**

[http://www.gsbf-bonsai.org/  
convention/](http://www.gsbf-bonsai.org/convention/)

## **pfm bonsai studio supports**

Mohawk Hudson Bonsai Society <http://mohawkhudsonbonsai.org>

MidAtlantic Bonsai Societies - [www.midatlanticbonsai.freeservers.com](http://www.midatlanticbonsai.freeservers.com)

American Bonsai Society - [www.absbonsai.org](http://www.absbonsai.org)

Bonsai Clubs International - [www.bonsai-bci.com](http://www.bonsai-bci.com)

National Bonsai Foundation - [www.bonsai-nbf.org](http://www.bonsai-nbf.org)

**please visit [www.pfmbonsai.com](http://www.pfmbonsai.com) for current happenings at the studio**

## **PFM RAMBLINGS**

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