

Junipers: Part Three

By Randy Brooks on August 1, 2006

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If you're new to junipers, and you've been following along, you should have a few nursery-grown plants in your possession, and you're ready to snip, clip, and create your first juniper masterpiece. If you've got a few junipers already that are possibly showing some stress, not growing quite the way you think they should, or are on their last photosynthetic gasps, hopefully you will find an answer here. If you're an old pro, why are you sitting here reading this? The weather is fantastic (at least today), so get outside and work some trees. If you're reading this sometime between mid-December and the end of February, then now is the time to be repotting our junipers!

Before we get started, I would like to say that although these articles are supposedly about junipers, there is a lot of general knowledge that can be applied to many of your trees, and the art in general. I'll try to remember to point out a few things in this article that are of a more universal nature. The rest I will leave for you to deduce for yourself. I'm going to outline some of the steps and objectives in utilizing new material here, but it would be impossible to provide details of the operations here in an article of this size.

As always, if you're new and you have questions, ask someone. The bonsai community is a very helpful one. Whether for altruism or vanity, most of us are more than willing to help with what we know. So there you sit, staring at a juniper, nursery stock you've purchased, spinning it on your turntable and mumbling, 'Now, what?'

First, you bought more than one didn't you? If not, rush out and buy five or six more immediately. They shouldn't be expensive, and you'll need them. Idle hands make for dead trees. This can wait until you get back. . .

There you sit, staring at a juniper, nursery stock you've purchased, spinning it on your turntable with half-a-dozen more waiting their turn, and you're mumbling, 'Now what?' You see nothing has changed. Patience pays.

Did you follow all of the guidelines you've been taught about starter trees? Did you find the biggest trunks you could with good branching throughout the tree's growth? Do the trees have good taper from bottom to top, and from inside out – at least taper that you can induce? Above all, did you get the healthiest specimens that were available? Dead trees are firewood, not bonsai. If not, rush out and. . . well you know what to do.

So, Lesson One is never, ever forget the basics! No matter how good you get, or how artistic you may be, the basics are the foundation upon which everything else you do is built. You won't comprehend these sentences if you don't know the words, and you won't know the words if you're unfamiliar with our alphabet. Some rules should never be broken and are universal to everything.

Since our most basic of all objectives in bonsai is to keep the trees alive, and since this is the perfect time of year (note: winter) to repot junipers, that's what we're going to do. If you've never repotted a bonsai tree before, you should probably seek some professional help – uh, that's find a knowledgeable bonsai person to give you a hand – or you should find a workshop you can take to learn what to do. We'll try to cover the gist of it here, but there is nothing like seeing it done, and doing it yourself. Also, never forget to check your local society for help, after all, that's why you're a member. For you experts that are still reading along (you're still here?), please let me know what I overlooked, or any tricks that I should have passed along that you employ (motives not important).

You'll need plenty of bonsai pots to choose from. You'll need different shapes in several different sizes. You probably won't be too sure of the size or shape of the pot until you've done a little preliminary pruning and looked at the roots. You'll need to decide on the style of the tree, find its front, etc.

The experts will tell you that this is a first potting into a bonsai pot, and that the shape and size isn't so important. They're right, but you're never going to be convinced, and this is one of those instances where they don't do what they tell you – the experts are always looking for the perfect pot – so we want the pot to be as close to right as possible. After all, the tree is going to be calling it home for quite a while.

Having said all that, realize the tree is a growing thing. It will change. The style may change. The 'front' will almost certainly change. The tree will dictate all of this, not the pot. You will have a tree within a year that is 'not in the pot right'. And you will incessantly have people telling you that the 'front should be over here,' and you'll constantly be mumbling, 'Yeah, I know,' but get used to it. Welcome to the world of bonsai. At least for the first few months your tree will look good, and you will be happy.

Okay, you've got the trees and plenty of bonsai pots to choose from. Another good reason to take a workshop is if a good supply of pots are going to be available that you wouldn't otherwise have access to. You've got chopsticks, wire, wire cutters, pliers, a pan of water (Superthrive optional), a place out of the direct sun to work, and a good supply of bonsai potting soil – NOT potting soil from your local nursery center, right? No? We'll wait. . .

Most problems with junipers are soil, root, and water related. Since junipers aren't prone to many pests or diseases, which we'll cover later, if you can alleviate these problems, you shouldn't have any trouble keeping junipers alive. They're tougher than most people believe. There's something you need to know about soil and keeping plants alive called 'capillary action'. Capillary action is related to surface tension and the adhesiveness/cohesiveness of a liquid.

Capillary action serves two purposes for us. First, it is the method by which plants are able to pull water and nutrients from their roots, up their trunks, through their branches, and to their leaves. Didn't you ever wonder how that happened? Water will climb a narrow tube, or vascular system, until it can no longer overcome gravity. The smaller the diameter of the

tube, the stronger the capillary action will be. The larger the diameter of the tube, the stronger the effect gravity will have on the liquid.

Water has the highest surface tension of any commonly occurring liquid except mercury. It is also very adhesive or 'sticky'. This results in water having very strong capillary action, which is a good thing for plants, and an important part of their evolution. Transpiration and a few other things are also involved, but capillary action handles a large portion of the load in transporting water and nutrients. If you ever did the food coloring and celery experiment as a kid, that was an example of capillary action.

The second thing that capillary action does for us is provide a mechanism for the distribution of water in our potting mixture. It can also cause us problems. Capillary action causes water to travel throughout the potting mixture. If you've ever set a potted plant in a tray of water, you've probably noticed that the water doesn't have to be as deep as the pot in order for all of the soil to become saturated. That too is capillary action in action.

So capillary action can be our friend by ensuring that our potting mixture is evenly moist when we water. But, remember the smaller the 'tube,' the greater the capillary action? Well, the same holds true for particle size in our pot. *The smaller the particle size, the greater the capillary action, the more that soil will attract and hold water.* Remember, water is very adhesive. What does this mean to us? Well, if we want the most even disbursement of water, then we will want as uniform particle size as possible. We won't want the particle size too small or the water will adhere too strongly to it, and our soil will stay too wet, and the water will not be released to the roots. We won't want our particle size too large or there won't be enough capillary action to provide for uniform moisture, and gravity will tend to dry out our soil faster than we desire.

What is the proper size? Well, that's one of those 'depends' questions. Depends on your growing environment, i.e. how much sun, wind, rain, etc. that you get. It depends on your watering method and habits. It depends on the species and size of your plants. It just depends. However, I know you want answers, so a particle size of 1/16 to 1/8 of an inch is usually considered to be a good size. Experiment, experience is the best teacher. As you will so often hear in the bonsai world, 'Find out what works for you.' That's another one of those universal truths that seem to apply to everything.

If you want to know what should be in your soil, well that's a whole 'nother ramblin'. Suffice to say, most of your commercial bonsai soils are made of pretty good stuff. Just make sure the particle size is consistent. Not filtering fines, or screening for size is the one area where they may be lax.

One other thing about potting mixtures that is going to play a role here in how we proceed is the mixture's rate of 'break down'. Some soils break down very quickly, while others are longer lived. One of the reasons that we use soil-less mixes in bonsai is that they don't break down as quickly as organic soils. What happens when the soils begin to break down is that the particle size gets smaller and smaller as it is exposed to more and more moisture. Eventually, you'll get clay – not a good growing medium. Again, particle size can degrade so

badly that the mixture will not even release any moisture to the root system. The adhesion has become so strong that the plant actually dries out even though the soil is actually constantly wet. It's not that the roots have rotted and aren't providing water because they are dead, although that's a very strong possibility as well.

Often, by the time you get around to doing an autopsy on a plant that you swear you were watering plenty, yet was still turning brown like you weren't watering, the plant has been dead so long that indeed the roots have rotted. In any event, both scenarios amount to nearly the same thing, so the point here is make sure that your soil mixture is one that won't quickly break down and pay attention to plants that have been in their pots for a while. Junipers can become root bound, but there's a good chance the soil will deteriorate before that happens, and junipers tend to like 'tight feet'.

Because junipers don't become root bound too quickly to the point of being detrimental, nurseries will skip 'potting them up' in favor of caring for plants that have a greater need. What happens is they are neglected for several years, and by the time they get to a size where you want to buy them they will frequently have badly decomposed soil, especially directly underneath the trunk. More people lose junipers because they never remedy this situation than perhaps for any other reason. That's why I personally believe all junipers should be bare-rooted when being put into a bonsai pot for the first time from a nursery pot. This way you can inspect the roots, clean out any 'bad' soil, and ensure your plants are potted using the excellent mix you have chosen that is resistant to decomposition and is uniform in size.

I've never had a problem using this technique. I have had problems when I didn't bare-root the trees. Besides, if you feel that it is a gamble, wouldn't you rather take it when the tree is in its infancy as a bonsai rather than when you've had it for a number of years? Or wait until the tree is in poor health and you have no choice?

One last note on this subject, junipers grow on a three-year cycle. This is why they appear to do nothing for so long after you have repotted. It takes them at least two years before they become 'comfortable' in the pot. That's why we don't repot them as often as our other bonsai. And, since we're not repotting as often, you'd better make sure the soil is right. I hear the question all the way down here in Homestead. How often should we repot? That's another one of those 'depends' questions. Preferably no sooner than three years, though circumstances will dictate more often on occasion (usually the owner can't stand seeing the tree in the pot or the pot placement it is in), and normally no longer than seven, with four to five years being about right. Again, it depends.

So, back to your situation, I'm sorry if I rambled. After all, there you sit with half-a-dozen trees waiting for me to tell you what to do with them. Well, we're going to talk about some of the objectives and operations, but specifics do need to be learned first hand. Take that workshop or participate in some club sponsored events where you can learn. We want to clean out any dead or undesirable growth. Then we'll prune back any adventitious or strong growth so that we have a tree that is more manageable in size, and has a more compact profile. Don't try and 'style' the tree at this point unless you're sure of

what you're doing. Remember, we want them alive. After you've done this with all of your trees, we'll take a look underneath.

Tap the trees out of their nursery pots. Using a chopstick, root hook, or bonsai rake, begin removing the soil – all of it. What you can't get at with the chopstick or hook, try and flush out with a strong jet of water from your garden hose. (ed. note-there is controversy about flushing out all old soil.) You might have to alternate between the two methods a couple of times, but do it! This is important. Do not take any shortcuts. If you take a saw to the root ball to cut it in half (at least with any of the prostrate or mounding varieties), I will guarantee that you will kill the plant. If you don't, you have much better karma than I do. The reason is that junipers of the mounding growth type send out a couple of main roots that will circle the pot and work their way down to the bottom where they will send out feeder roots. The bottom outer edge of the nursery pot will be where all of the action is. That's just the way they grow. If you take a saw and cut away the bottom half of the root ball, you will have effectively cut away all of the feeder roots; and the tree will perish. Junipers of the upright or more tree-like growth habit are more forgiving, and the root ball can be worked more aggressively.

You should not need to root prune the trees if they are of the mounding growth habit such as *parsonii* or *procumbens* 'nana'. I have never needed to prune the roots of any of these trees. By the time you have cleaned away all of the old soil, you should have removed all of the roots the plant will tolerate. You may have to root prune *Juniperus virginiana* or *tortulosa*, or other plants of the upright growth habit.

Once you have bare-rooted the tree, find a pot that is a suitable shape and size. The roots of the tree will loosely fill one-third to one-half of the pot's volume. Maybe 'fill' is a bad description, 'occupy the space of' the pot's volume would be a better description. This may mean that the tree is slightly over potted in the beginning, but with your care and attentiveness, the tree should be filling those shoes in no time. This is the first potting into a bonsai pot, so we want to make the transition uneventful, if that's possible considering we just bare-rooted the plants.

Once you've made your pot selection, if it's a warm day or particularly breezy, you should keep the roots from desiccating, which the feeder roots of junipers can do in record time. That's what the pan of water is for. Put the tree in there while you're preparing the pot. Put screens over the drainage holes in the usual manner and then outfit your pot with 'tie-downs'. If your pot has the small holes for tie-down wires then use those, otherwise run the wires through the drainage holes. And let's get in the habit of running at least two wires to hold down our trees, not just one. In fact, use a framework of chopsticks cut to size – or other means short of gluing them in – to IMMOBILIZE your tree in the pot.

Junipers, especially, have very fragile feeder roots and they need to be able to establish themselves without any movement in the pot. Next to the problems with decomposed soil cited above, improper potting is probably the reason most plants perish. It's always interesting to see someone show you a juniper that is weak, and when you ask how long it has been in the pot they tell you a couple of years, and yet the tree still jiggles with the slightest touch. Either they're fibbing, or the tree was never properly potted and immobilized

in the pot – and probably all of the preceding is true.

If you wire all of your trees, not just junipers, into the pot each and every time, you will eliminate many, if not all of your problems that are neither fungal or pest related. Just because you reduced the root ball by only half on your Chinese privet, and packed soil around the transplant, doesn't mean it will fair well. Check the tree yourself and see how much it moves.

Once you've readied your pot, place your tree in it and pot it up. When you first put the tree in the pot, place a mound of soil underneath the center of the trunk to have it sit at the proper height, and then tie down the tree just to the point where it will not easily lift out of the pot. We don't want the tie-downs too tight at this point because we haven't begun filling the pot with soil. Fill the pot with soil and search out empty pockets by using a chopstick to find them. Don't turn the chopstick into a sewing machine; just calmly insert the stick into the soil around the pot and especially underneath the tree to find empty areas. Another area prone to pockets is where the trunk of the tree is closest to the rim of the pot, usually at the back, so be sure and check there also. You'll now find that your tie-downs have miraculously tightened themselves. If they still seem a little loose, then you can tighten them a bit so that your tree is snug.

As for aftercare, I usually like to water thoroughly, that's THOROUGHLY, and then place the tree in a slightly shaded area for two to three weeks. Unless conditions dictate otherwise, I probably won't water again during this initial incubation period, and that's what this period is as your trees begin their new lives as bonsai. But, inspect your trees daily and see if the soil is drying out. The most common reason for that at this time of year, at least down here "where the big toe goes", is wind. If it is very windy, I will water during this period, and also wet the foliage to keep the trees from suffering. Wind can have a stronger drying effect than the sun if it is accompanying low humidity, which it often does this time of year. Next time we will finally get around to talking about diseases and pests. If you've got any comments, good or bad, suggestions, constructive or otherwise, or questions, none of which are ever dumb. Happy trees