

The Art of Bonsai

By Eugene Howell

I surprised myself the other day when I realized that one subject that has not yet been discussed in this series of articles is the one bonsai task, above all others, that can cause the death of your tree very quickly.

Periodically every bonsai begins to outgrow its pot. Either the tree has become too large for the pot or the tree's roots have become too crowded. Of these two conditions, root crowding is the one that most frequently causes repotting. Overcrowding of the roots means that during the process of repotting, roots must be untangled and pruned. If this task is not done carefully and correctly, the plant can die within a very few days.

Let's discuss how it should be done to minimize the possibility of causing that prized bonsai to go belly-up.

To avoid killing the tree during root pruning, it helps if you know what it is that will cause its death. Then you know the care to take and the actions to avoid.

What causes the death of a bonsai as a result of root pruning is severe stress that is beyond the plant's ability to withstand. This stress is the result of the plant's leaves giving off more water (transpiration) than its roots are taking in. As a result, the leaves wilt and die and the plant soon follows. This stress can come about by one of four causes. First, you have allowed the roots to dry out too much during the process; Second, you have pruned too many of the wrong type of roots and it goes into severe stress from lack of water uptake; Third, after successfully pruning the roots, you allow the tree to go into severe stress by placing it in the wrong environment; and Fourth, you have root pruned at the wrong time of the year.

First cause of death: The tips of all roots have "root hairs". It is this part of a plant that takes in water and nutrients from the soil, thus providing the plant with these two essential substances. If the root hairs are killed the plant can no longer take in either of these and within a very few days the plant will die from dehydration. These root hairs are thinner than a human hair, so they dry out within a few minutes of being exposed to the air and sunlight. When working on the roots of a tree, spray the exposed roots with water immediately upon lifting the tree from the pot and every few minutes (less than 10) thereafter, until the tree is safely back in the pot and the soil has been thoroughly watered. Fail to do this and you are asking for a dead tree!!!

Second cause of death: In bonsai the type of root that is desired is a thin, relatively short one. These provide many more root hairs than do thick, long roots. So this thick (the diameter of a drinking straw and thicker), long root (in many cases these can be 2 or 3 feet long) is the type that must be removed when root pruning. After removing all these large roots, what should be left is a mass of very thin, short roots. These may be up to 8 or 10 inches long and should be given a "hair cut" by snipping off only about 20% to 30% of their length, i.e., leave 6 to 7 inches uncut (in this example). This part takes about 10 seconds to accomplish. If you remove too much of the mass of thin, short roots, you are flirting with disaster.

Third cause of death: If you have successfully pruned the roots and potted it, and then place the tree back in the hot, summer sun, you are asking for trouble. The plant will very likely go into stress and if the stress is too great, you lose it. The safe thing to do after root pruning is to place the well watered tree in a shady location, away from strong winds, and let it stay there for two or three weeks. In this location the transpiration from the leaves is reduced and they do not give off more water than the shortened roots can take in.

Fourth cause of death: Pruning at the wrong time of year. You must know your plant. By this I mean that you must know whether it is one that is deciduous and goes dormant during the winter, is evergreen and goes dormant during the winter, or is evergreen and never fully goes dormant. The first two categories **MUST** be root pruned only during the coldest part of winter after the plant is fully dormant. A few plants that fall into this category are Fla. Red Maple, Titi, Hornbeam, Black Amber, Elm, Juniper, and Pine. Some of the numerous ones (that we use here in central Florida) that fall into the last category (evergreen and never go fully dormant) are Ficus (all), Azalea, Bougainvillea, Neea buxifolia, Buttonwood, Brazilian Rain Tree, Portulacaria afra, Podocarpus, and Jaboticaba among others. Most of these trees can be worked on at any time between April and the end of October. Having said this, I must point out that Buttonwood and Brazilian Rain Tree should be worked on during the hottest part of the year (July and August).

Despite all that you have done (hopefully correctly), if the plant appears to be in severe stress then emergency action is necessary. In this case, unless you have a mist system (sprays a very fine mist for about 10 seconds every few minutes), the best thing to do is place the tree and pot into a drycleaner's bag (the thin type you get when your trousers come back from the cleaners), water the soil thoroughly, seal the bag with a "twistem" and place it in the shade for a few weeks. Under all but the most severe cases, the plant should pull through (this assumes you did not do one of the "killer" acts listed above). While the tree is in the mini-greenhouse (drycleaner's bag) you will not need to water it very often, but you should check the soil moisture every couple of days to make sure it is still moist about one inch below the soil surface. After making your moisture check, don't forget to reseal the open end of the bag or you completely neutralize what is it you are trying to do, i.e., keep the tree in a 100% humidity environment.

Repotting and/or root pruning is not that difficult. If you take the care to prevent the four deadly sins listed above you should have no problem with your tree.