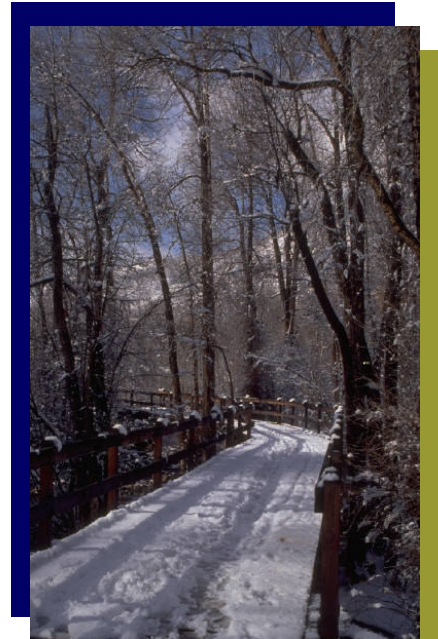


# The Invisible Performance: The Rest of the Story

**I**n the last issue of this newsletter we talked about the invisible performance of our trees in the wintertime. We described generally how autumn and winter are the seasons of root growth and critical, albeit invisible, preparation for the next annual cycle of greening and glory. At the end of that article we referred to the proximate presence and projects of people (excuse the alliteration; I couldn't help it) as being the activity most hazardous to urban and suburban trees. Well, now we're back to say just a bit more about how that activity damage happens and to recommend a few ways that damages might be mitigated while "improvements" are underway.

**F**or about twenty-five years now I have been working with builders, architects, site planners and most of all, just plain folks who have or are planning to undertake, for various reasons, all kinds of landscape and/or grade changes near large valuable trees. Sometimes the damage is already done and I get a call made in the desperate hope of a quick and easy cure. Other times the property owner hopes to avert such damage by planning ahead before on-site activity begins.

**B**ut however it begins, one element is almost always critical in every case. It is the need of remediation for or the prevention of ROOT DAMAGE AND DYSFUNCTION. As was implied in the preceding discussion, what does or does not happen below the ground is critical to survival and performance. A large tree is in one way like a railroad locomotive traveling down the track at 60 mph. If it is derailed for any reason, it will not jerk to a halt on the spot. Rather, it will travel a considerable distance before it stops, even though its fate is sealed. So those final three hundred yards along that rail line might be like the final year or so in the life of a tree whose roots have been significantly damaged or destroyed during a construction project.



**C**onstruction, for purposes of this discussion, may be very broadly defined as not only new construction and additions, but also irrigation installation, tilling or excessive digging for new flower beds, gardens or sod installation. Also sewer repairs, grade changes of all kinds for any reason, new driveways and/or parking spaces, removal of old hardscape features, water or gas leaks into the soil, chemical spills, soil compaction, radical pH changes, necessary trenching for any reasons, and . . . well, those are the most common ones but folks seem to be infinitely creative in this department.

**O**f all the kinds of damages listed above, maybe one of the most insidious is soil compaction. Unfortunately, the kind of clay that we have in the Memphis area is highly compactable, especially when wet. Another analogy here may be worthwhile: Imagine a single slice of hot freshly baked white bread. Now imagine placing that slice in your hand and squeezing hard into a fist . . . just once. Now! Now fix it and get that slice back like it was before. Get the picture? Remember the little blonde root hairs that we talked about last time that live in that bread/soil, picking up water and nutrient? They're gone now; destroyed.

**H**ow does compaction occur? It occurs not only by vehicle traffic (even a single pass of a brick, concrete, or lumber truck) across root areas, but also by stacking heavy construction materials and parking cars and trucks under trees. Even repetitive foot traffic over damp clay can compact the soil in root areas.

*(Continued on page 2)*

# The Invisible Performance: The Rest of the Story

(Continued from page 1)

Because those delicate root hairs need air as well as water to live and do their job, the vast majority of a large tree's root system is located in the top eight inches of the soil, and much of that in the top two to three inches, right there with the grass.

So, with all of this in mind, here are just a few important rules to remember when "doing stuff" near your trees.

1. If a contractor is involved, talk to him/her ahead of time about location of needed work, parking and materials staging spaces. Identify access routes for delivery trucks. Use substantial fencing (e.g., temporary cyclone) to isolate important root areas as an inviolate "No Trespass" zone. P.S.: Orange plastic fencing is often soon down and ignored for the duration.
2. Do not allow concrete or mortar "washouts" upgrade from or near root zones.
3. Locate necessary trenches outside of drip lines if possible, even if extra linear feet are required. If trenches must come within a radial distance of five times the trunk diameter of important trees, consider boring as an alternative to trenching across critical sections.
4. Where new irrigation heads must be located near important trees, try to run lines straight in (radially) rather than across the radial root pattern.
5. When installing new plants under/near trees, do NOT till. Instead, dig individual planting holes.
6. Keep grade changes to a minimum. Use porous loose material where possible. If fill requirements exceed four (4") inches, consider using an aeration system to minimize root loss at the old (original) grade.
7. Where necessary passage over root areas is ABSOLUTELY unavoidable, lay down 6"-8" of temporary mulch and/or multiple sheets of inexpensive ¾" plywood for a "road."
8. For larger trenches, remember that backhoe buckets do not cut roots. Instead they rip and snatch and jerk them out, doing serious damage to root hairs that presumably would remain in the soil laterally to the trench. Consider alternatives in critical root areas.
9. For wall and building footings crossing large roots whose post-construction terminal ends will remain viable, consider bridging with steel in lieu of cutting these roots.

I hope that a few of these nine reminders will be helpful the next time a project near your trees appears on the horizon.



## Did You Know. . .

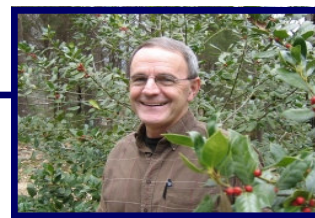
. . . that trees can have a separate monetary value on a property over and above the actual property value. Calculating this value involves consideration of species, size, form, health and condition, location on site, and amenity contribution(s). The ISA published Guide For Plant Appraisal, 9<sup>th</sup> ed., 2000, describes and details several alternative protocols for arriving at monetary value for plants and trees. These are intended for procedural use by experienced plant appraisers.

. . . that the fast-growing **Loblolly pine** (*Pinus taeda*), while often planted in rows as a quick visual screen along property lines, very soon outgrows this intended functional use and thereafter offers little more at the line-of-sight than a row of tree trunks. If pine is your preference, a more practical variety for longer term green screening may be Virginia pine or **White pine** (*p. strobus*). These tend to retain their lower branchings and needle, as well as offering a usually denser canopy to the same screening purpose.



*In this photo it is privet, not pine, that provides visual screen*

# From My Journal: Hibernial Gratitude



Every year I get to attend the annual conference of the American Society of Consulting Arborists. It happens at the same time every year; the first week of December. That's just about when many of us Memphians are subconsciously sliding into our winter "hunker down mentality."

I have attended this conference of consulting arborists for almost fifteen years now and it happens in different places all over the country. But this year it convened in a place that made my heart especially glad: Palm Springs, California. I got off the plane there after an extra long day of connecting through Minneapolis that also included more than an hour in the de-icing line there before taking off again. So when at last I walked down the steps into that wonderful outside California air (not one of those accordion-like Orwellian jetbridges, not here) my heart jumped for joy as I reveled in the caress of that warm balmy breeze on my face. From the very first moment the desert and the mountains were there all around

me as a romantic backdrop. There was color and flowers and people in short-sleeved shirts and shorts in December . . . and I loved it.

But now I'm back and have been for about a month. And things have settled in a bit. Now, while that memory still makes me smile, still

ence is held. It is (to borrow and hopefully not improperly purloin a term from the Marine Corps) the ever dependable esprit de corps and the networking with old friends from all over the country who share a common love of and professional interest in the trees that I know are going to refoliate again for us this spring. Every year I come back with at least two or three good ideas that merit implementation or further investigation. And every year I come back glad that I'm in this business. Glad that I do what I do. I have many friends here who have been and still are clients and suppliers and colleagues. Indeed, I expect that this letter will be read by many of them.

So then this becomes an opportunity for me to say how much I am now aware of that and how grateful I am for my profession and my friends. And oh yes! I'm also glad that there are still places like Palm Springs and Tortola in the wintertime.



makes me feel warm here in January, the real value of that trip for me is in what it always has been, year after year and no matter where the confer-

## ... And One More Oak Gall Reminder



In hopes that this newsletter gets into your hands sometime near the end of January, I am offering one final reminder for this year about the use of Merit (the Bayer trade name for *imidacloprid*) as a response to gall presence in oak trees. As a result of recent gall treatment conversations with Bayer reps, I have up-graded my education on this subject and learned even more about this fascinating phenomenon and its control.

Here are a few facts.

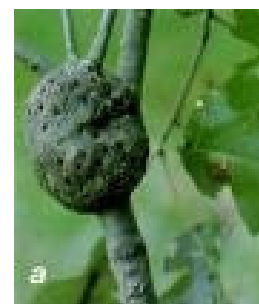
**First**, the gall you see is the tree's abnormal tissue encapsulation effort to wall off a foreign body, which is the injected egg of a tiny gall wasp. This is much like the festering pus formation around a splinter not removed from your finger.

**Second**, the egg hatches and the young insect vacates the premises but the aberrant tissue growth continues, partially impeding vascular function (water and nutrient flow) through the twig. In this way, extensive infestation can impede tree vitality and elevate susceptibility to a variety of other problems.

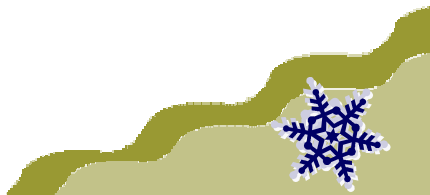
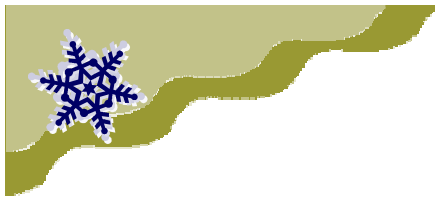
**Third**, the objective of treatment is to break the cycle and prevent new gall from forming. Old gall already formed must expand and fall away. Again, depending upon severity of infestation, the tree can then clean itself up over a period of 2-4 years.

**Fourth**, translocation time for the treatment material to get into the twig is a function of application method and tree size and vitality. Best application is with a surface soil drench immediately around the root collar (the base of the tree). Very large trees may take several months and up to half a year to move *imidacloprid* into position versus a few weeks for small trees.

**Fifth**, once in place, treatment will be effective for most of another year.







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## “How Big . . . ?”

Very frequently, as I visit with area property owners about their trees and their landscape, I get a question that seems to pop up over and over. We might have been talking about needing more trees on the site or maybe it will have been an after-thought concern with providing some more shade for the patio. And then here it comes again:

“How big a tree can I plant there?” he says.

And not-so-subtly implied in the question is the idea that *bigger is better*. It suggests that maximum shade - and fast - is the way to go. But very often it is not the way to go at all.

First, there is for most people a real limit on the size tree that can be installed on a site. That limit is commonly a function of 1) cost and 2) physical limitations of available equipment. Eight to ten (8"-10") inch trees can be installed into a back yard with a large tree spade. And of course, even larger trees can be theoretically installed using a lot of prep, a low-

boy and crane equipment. . . and a lot of money.



But there is another potentially important aspect to “How big?” It is the matter of survivability and performance. If a tree comes in on a tree spade, it may be a 4" tree or it could be a 10" tree, depending upon what the owner has ordered and purchased. But whichever it is, the same size root ball is coming in with both of them and that can make a very big difference.

*But all things being equal, the idea is to come in with as much root system relative to trunk size as possible.*

Assume two sizes of trees (large and smaller) both with an X-diameter root ball. The smaller tree is generally going to establish faster and start grow-

ing both sooner and faster with a higher prognosis for vitality and appearance.

The reason is obvious; the large tree coming in with only a partial root system is going to have to sit in the hole for a time - maybe a couple of years - using available sugar energy just rebuilding its roots and surviving before it can start to grow. And its risk of having trouble in that time is elevated.

Of course *when* (time of year) and *how* planting happens (another subject) can also be critical. But all things being equal, the idea is to come in with as much root system relative to trunk size as possible. So if you're thinking of planting a new tree, it may be well to ask your provider about these things. A common though not universal warranty on new trees is one calendar year. After that, it's yours.

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