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wisdom from the trees™

Mother Nature's Moment, April 2019
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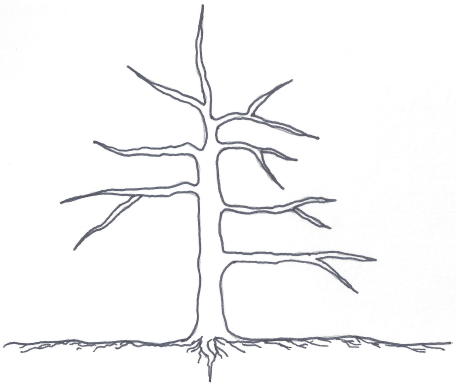
How Do to Trees Grow?

Beautiful Magnolia bud bursting forth with new spring growth from its lateral bud meristem

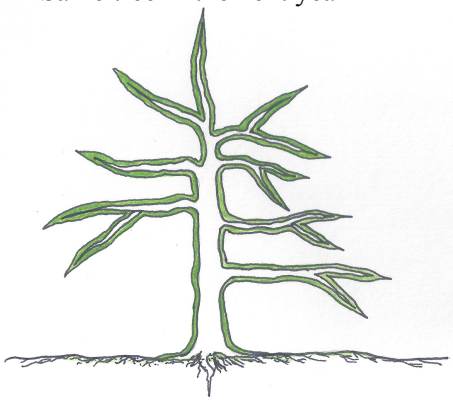
This last quarter we have taught several workshops that focus on tree trimming. Whenever we have a chance to get in front of people to talk about trees, we don't miss the opportunity to talk about tree physiology. Now before you click to the next thing with a big yawn, give me a moment to share with you just how exciting this subject can be. Understanding tree physiology helps those of us that live and work with trees to know how to help them live the longest and healthiest lives possible. As an arborist of almost 40 years I can tell you that some of the most damaging practices done to and around trees are done because of the many misconceptions we have about them. Understanding a bit about how trees live and grow helps us to be good tree friends.

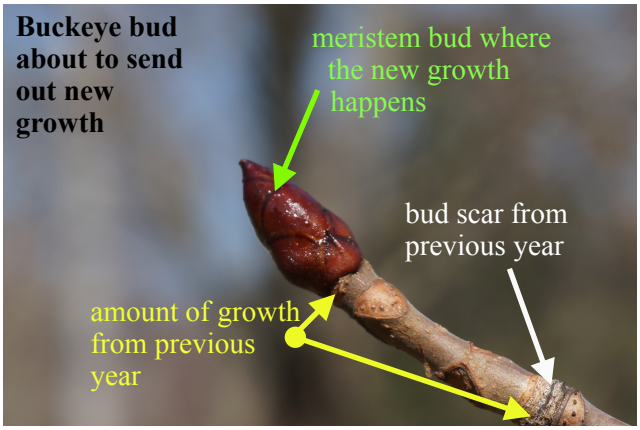
So how do they grow? They grow like coral. That means, that as a tree grows it puts on a new living layer each year covering the one before. The *only really living* part of a tree is a thin layer of cambium, or living tissue, that lives just beneath the bark. One of our arborists, Kate, explains it this way. "Try to imagine a candle being made in the old fashioned way of dipping a wick in wax time after time until it builds up enough layers to stand straight and tall." That is why we can count the rings on a tree stump and know its age and why it can strangle a tree to death to tie a rope, support wire or dog leash around the trunk and then walk away and forget it. It sounds silly, but you would be shocked to learn that we have to pronounce the death sentence on so many trees each year because of this one mistake. It also means that if you carve your initials in a tree at a height of 5' on the trunk when you are age 16, and come back when you are 46, those initials will still be at the same height 30 years later. You might also be surprised, or not, that most people think those initials will be way up in the crown of the tree all those years later.

A tree on any given year of its life



Same tree in the next year





As a tree grows, the part of the tree that gets longer are the bud tips, or as we say in the plant world, the ***meristems***. These *meristems* are located in different parts of the plant and are the living bits where new growth happens. That is how it can get taller and wider as it ages. (I have drawn a few illustrations to help explain this.) There are also meristems in the cambium, that living layer just under the bark and in the root tips, that are extending out into the soil. As trees grow their roots can extend out into the soil many times past the branch spread yet they do not grow very deep. Tree roots are close to the surface! Roots need oxygen to survive so we need to remember that 90% of a trees' root system is in the top 6-10 inches of soil.

Our understanding of tree physiology should educate what we do to and around our trees. Following are some basic tips that respect how trees grow and help us protect them for the long term.

1 - ***Do not ever*** leave a support cable or wire in place on a tree trunk for more than one season. It weakens the tree. It can also strangle it to death. (See Cabling Abstract)

2 - Try to avoid the root zone of a tree when digging trenches for construction, power, water or sprinkling systems. It can actually destroy a tree that is 100 years old, we have seen it happen many times. (See Tree Preservation Abstract)

3 - When you hang a bird feeder, decoration like wind chimes or seasonal lights in a tree be sure to ***move them or remove*** them at LEAST once a year, more often is better. We have seen these things strangle MANY trees to death!

4 - Check out Gil's article this month on *How Trees Heal* for more insight on this topic.

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