Backyard Wisdom, April 2019
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How Do Trees Heal?

They don't, at least not the way we think of healing. Damaged tissue in our bodies is replaced by new healthy tissue. Once a tree is damaged, however, it remains damaged for the rest of its life. This is because trees don't grow like people. Maybe a better comparison would be that trees grow like coral, annually adding new living layers on top of old mostly dead structure. We can count these new layers or annual rings to tell us just how many years the tree has been alive. Because of this "layered" growth pattern, no matter how tall a tree grows, the height of each individual branch on the trunk never changes.

Once a branch dies, is broken, or cut the tree has several strategies to fight infection or invasion by wood rotting organisms. The one that we are most familiar with is callus tissue covering the wound. Callus tissue is nothing more than the tree doing what it always does, the cambium (the living cells just below the bark) adds new wood on top of old structure. If the wound is large it may take many years to cover. By that time the harsh weather, insects, squirrels, and wood rotting fungi may have eroded the interior structure so there is nothing for the cambium to form over, leaving a hole. The owls and squirrels are very happy for a place to live but it does create a weak spot in the tree. This is why we avoid taking off large branches if at all possible, because it actually weakens the tree.

The second way a tree defends itself against infection is by creating a physical and chemical barrier to rotting fungi called compartmentalization. The individual tree cells stop doing what they ***were*** doing and fill themselves up with physical barriers called tyloses. Also those smart cells import turpines (sort of like turpentine) which are toxic to microorganisms. The final defense those self sacrificing cells make is to dry out. Wood rotting fungi don't like dry wood nearly as much as nice moist wood. Fifty years ago arborists, like me, were taught to paint their tree cuts with tar to protect them from rot. It was a nice idea, and we who were conscientious, painted all their cuts. It turns out that we were just helping wood rotting fungi by sealing the moisture in.

A senior tree showing its inability to callous over an old wound

Alder tree that has been mortally wounded by a support cable installed and forgotten. Even though the landscape company that did the installation was on site every week doing maintenance for over 4 years.

Trees grow in marvelous ways and though they don't heal the way we do, they have evolved wonderful defenses. Check out Lesley's article this month on how trees grow. When we understand tree growth, we can learn to work with and reinforce those wonderful defenses. Here is some wisdom from the trees that will help guide us.

An old tree that has calloused over a wound for many years and still been unsuccessful in closing it off

1 - Don't just "give your tree a hair cut" when you think it is getting too big. (See Ornamental Trimming Abstract)

2 - If you don't know what you're doing, the tree is better off left alone. Unknowledgeable trimming ***always*** does more harm than good.

3 - Make all of your cuts thoughtfully, respecting the barriers against invasion that the tree has set up. (See Tree Trimming Abstract)

4 - If you have any cables or cords wrapped around your trees to hold them up in a storm, or hold your pet or even for decorative lights go out and remove them before they strangle your tree. (See Cabling Abstract) It can happen really quickly.

5 - Have your trees regularly inspected and trimmed by ISA Certified Arborists who can spot, correct and prevent damage to your valuable trees.

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