John B. Ward & Company, Inc.

Winter 2011 **Timely Tree Tips**

Beautiful Weeping
Cherry Tree in Wayne

A message from

Jim Ward

Certified Arborist

In this year's newsletter, we highlight several tree preservation techniques. Some techniques apply to young, developing trees with goals of reducing the need for future corrective pruning and helping to develop healthy root systems. Other techniques are used primarily for mature trees, where our goal is to extend their life expectancy.

Thank you for your continued confidence in allowing us to care for your valuable trees.

Our feature tree (see page 6) was planted on the Wootton Estate by George W. Childs in the late 19th century. Several acres of the 196-acre property, once a farm, were carefully planted with both formal gardens and specimen trees. Some of the large trees are well over 100 years old and toward the end of their life expectancy. Many homeowners are facing a similar situation; trees planted in the early 1900s are now very large and slowly declining.

Just as Mr. Childs had a vision and planted many unique trees that outlived him by more than 100 years, we too can leave our mark on our landscapes by planting trees for future generations to enjoy. Through tree preservation and the planting of new trees, we will successfully maintain one of the unique components of our community.

On behalf of our family and our employees, we thank you for your continued confidence in allowing us to care for your valuable trees. We approach 2011 with tremendous energy and a firm commitment to deliver the highest level of tree care in an honest and informed manner.

ISA Certified Arborist
Jim Roach prunes a large
American Elm in Wayne

In this issue

Root and Soil Therapy

By Matthew Ward, ISA Certified Arborist

Trees require healthy soil and growing conditions to thrive. Many trees struggle due to poor soil conditions and heavily compacted soils. Others are never healthy due to circling, or girdling, roots that develop when trees are grown in containers. We often see new trees planted too shallowly. All of these factors lead to the same result: distressed trees in a decline spiral.

Our air spade tool can help. Results are best when we are called in early — either while trees are young or soon after decline symptoms appear.

The air spade tool connects to a full-size air compressor. Air is funneled to blow dirt away from the roots and the trunk without harming the tree. We use the air spade primarily to perform two functions:

ISA Certified Arborist John Cotterall directs his crew to cut undesireable roots and establish proper tree planting height.

Root Crown Excavation

The air spade safely removes dirt from the root collar of trees. We can determine proper planting height by inspecting the root crown, and we can identify and remove girdling roots. This process works best on young trees.

Radial Trenching

The air spade creates small trenches away from the trunk of trees. We establish a radial pattern — similar to a spoke pattern — with trenches six to twelve inches deep and three to four inches wide. The trenches are backfilled with compost, dehydrated cow manure, and screened topsoil mixed with sand. Our goal is to increase the amount of oxygen to the roots, replace poor soil, and create an environment conducive for increased fibrous root growth.

Andres Lopez adds healthy soil to complete a radial trenching project in St. Davids. The sod is replaced to finish the job.

Healthy Trees and Shrubs Need Healthy Soil

By Matthew Ward, ISA Certified Arborist

Growing up, we had a system for handling the leaves on our property. We would carry and blow the leaves into a pile at the woods' edge. Each fall, we would create this pile and by summer it would decompose and seemingly disappear.

In 1984, John and Jim Ward transplanted a tree at the family home. They were on the right track, using leaf compost to improve soil conditions.

When we planted new trees, Dad would send us to this spot for the rich dark soil and we would incorporate our "leaf compost" into the existing soil. Since the 1970s, researchers have focused on the benefits of healthy soil, not only for young and transplanted trees, but also for large, valuable trees and shrubs.

As an industry, we are now aware of the importance of oxygen in soil and the dangers of soil compaction around trees. Scientists stress the importance of soil microorganisms, non-pest invertebrates such as earthworms, spiders, beetles, nematodes, annelids, ants and other arthropods that work the soil. Our industry has also worked with sea kelp, sugars, and other organics to improve soil and growing conditions.

Whenever practical, we advise clients to create mulch beds around trees and allow leaves to remain in these mulched areas to introduce new organic matter to the soil.

We continue to do research on the latest generation fertilizers, and use both slow-release fertilizer and organic root stimulants and soil conditioners. The products are complex, with surfactants that reduce the surface tension of liquids, allowing easier penetration into soil. They contain molasses and kelp, sources of carbon that serve as food for soil microbes. Humic acids are added to aid in micronutrient uptake.

We are committed to providing you, our clients, the latest-generation, most effective products to help your trees thrive!

Plant Health Care

By Chris Ward, ISA Certified Arborist

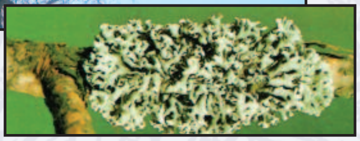
Many pests that harm ornamental plants are quite conspicuous when you know what to look for. Checking your trees and shrubs, especially if they are fresh from the nursery, is a great way to eliminate pests before they become a larger problem.

Nasty Cankers on Flowering Cherries

During the height of last year's drought, I got a lot of calls about oozing cankers on cherries. This is a common occurrence on cherry trees, especially on Kwanzan flowering cherry, *Prunus serrulata* 'Kwanzan.' The cankers are caused by the tree's reaction to a fungus called Leucostoma. When the tree is actively growing and healthy it can successfully ward off the fungus and survive for many years with the problem. When a cherry tree becomes stressed by drought or other problems, the fungus will start to invade healthy wood and can kill large portions of the trunk. The result is what you see here: an enormous flow of resin. I see this problem every year, but I have never seen the resin oozing so fast that it piles up on the ground like this. This is surely a sign that last year's drought was very serious.

This is a disease that homeowner can help prevent with good cultural practices, especially mulching and watering.

Lichens



Lichens are interesting organisms, but would probably not find their way into our newsletter if they were not mistaken for "disease" or "fungus" so often. Lichens are a symbiotic union between a fungus and an alga and can grow on rocks and bark. The most conspicuous growth often occurs on Pin Oak trees, low on the trunk, leading to a lot of nervous calls from homeowners.

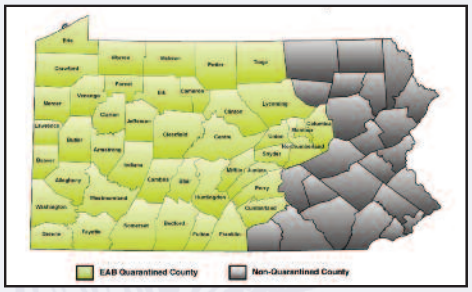
In this particular brand of symbiosis, the alga supplies the fungus with carbohydrates through photosynthesis, and the fungus supplies both partners with water and minerals. Sometimes I wonder if lichens are truly 100% harmless; for example, when I see them covering a dying azalea and neighboring healthy azaleas are free of lichens. Apparently this is just a response to new-found sunlight and an effect rather than a cause.

Pachysandra Volutella

Volutella is a fungus disease that can wipe out large sections of pachysandra fairly quickly. It occurs on the leaves as a "bullseye spot" and — a more serious sign — on the stems as a canker that girdles the twigs and kills everything above the canker. The fungus invades stems that are damaged by winter injury, foot traffic, scale infestation, and drought. Since all of the pachysandra in the area experienced at least two of the four risk factors above, I think 2011 might be a pretty bad year for Volutella. The important management technique for Volutella is to know that the stem and root below the canker are probably healthy, so removing the canker and the diseased part of the plants from the bed will go a long way to recovery. It is not uncommon to actually use a lawnmower in large beds to cut the stems, and then rake out all the diseased parts. When the new growth starts to appear, registered fungicides can be applied to protect the young leaves.

Call us if you see

Emerald Ash Borer



Pennsylvania Department of Agriculture map of counties quarantined for Emerald Ash Borer

Emerald Ash Borer (EAB) is an exotic (non-native) pest that feeds on and kills ash trees exclusively. It is making its way across Pennsylvania rather quickly; it has been found in 18 counties, and 32 counties are under quarantine orders. The quarantine restricts the movement of any hardwood lumber, firewood and woodchips. The experts are telling us that it is only a matter of time before EAB is in the Delaware Valley.

Badly infested metropolitan areas in the Midwest have been successful at protecting ash trees from infestation with soil- or trunk-injected Merit and other products. We are looking at options and will determine the most effective treatments to protect important ash trees. In years past, we drew a line at the Susquehanna River and decided not to recommend protecting trees until confirmed infestations crossed the river. The state has since included Columbia County in the quarantine area; that is certainly east of the Susquehanna and starting to get a little too close for comfort. This year we are encouraging our clients to meet with us to discuss treatment options and decide which trees should be deemed valuable enough to protect. We expect to start protecting Ash trees from EAB in 2012, which we think will be in plenty of time.

Boxwood Leafminer

Boxwood leafminer is a fairly easily controlled pest, but still causes a lot of damage to boxwoods in our area. It seems that most new boxwood plantings are coming from the nursery with a heavy dose of boxwood leafminer already between the leaf layers. These pests spend almost their entire lives inside the leaf, and emerge as little orange flies that live for just a few days in the spring, reproduce, and die. A boxwood with every leaf infested with leafminers might look fine in the summer after it is planted, when the larvae are very small, but as the larvae start to get bigger and destroy more of the leaf tissue, the plants will be nearly defoliated the following season. This is usually when homeowners ask for our help. If the plant is still healthy enough to make new leaves, they will usually recover if we can protect the new growth with Merit applied in the soil.

Bacterial Leaf Scorch

Bacterial Leaf Scorch (BLS) is the most damaging disease of oak trees in the Delaware Valley. This is a bacterial disease that causes progressive dieback in the Red Oak family: Pin Oak, Scarlet Oak, Black Oak and Red Oak. Currently, there is no cure for BLS, but a combination of therapies can help increase the lifespan of infected trees.

Maintain soil moisture and limit drought stress during hot periods of the summer.

Trees with BLS should receive extra water throughout the growing season, especially during the hottest parts of the summer. A properly mulched bed around the root area can help conserve moisture.

This untreated Oak Tree shows BLS symptoms.

Prune out dead and dying sections of the tree.

Besides removing obvious hazards, pruning out diseased areas of the tree can aid recovery.

Maintain soil fertility.

Oaks often struggle with Southeastern Pennsylvania's alkaline clay soil. Trees with BLS should be fertilized with a balanced tree fertilizer to maintain overall vigor. If the leaves are chlorotic (yellow), a soil test should be performed to determine if nutrient imbalances are adding to the problem.

The antibiotic oxytetracycline can be used to provide one-year suppression of disease symptoms.

In 2010, we continued to have good results with a new antibiotic treatment protocol.

any of these pests.

The Importance of Pruning Young Trees

Over the last twenty years we have witnessed an increased awareness of caring for young trees. Proper pruning enables a tree to develop with a strong structure and desirable form. Trees that receive corrective pruning while they are young will require less corrective pruning when they mature.

Ken Hutz stands next to a young scarlet oak tree. This tree will be lightly pruned to establish strong scaffold structure.

Here are some guidelines that we follow:

Establish a strong scaffold structure

The goal in training young trees is to establish a strong trunk with sturdy, well-spaced branches. The strength of the branch structure depends on the relative sizes of the branches, the branch angles and the spacing of limbs. We strive to remove structurally weak branches while maintaining the natural form of the tree.

Strive to develop a single trunk

Co-dominant stems can lead to structural weaknesses, so our goal is to develop a single dominant leader in young trees. Sometimes we use a technique called subordination to prune out a co-dominant leader over a period of years.

Permanent branch selection

Young trees often have low limbs that need to be removed as trees mature. In addition to elevation pruning, we look to properly space branches vertically and radially. Pruning cuts heal easily when trees are small and rapidly growing. However, remember that leaves generate food for trees, so overthinning the interior of trees is not a good idea.

Tree Cable Systems

By Ken Hutz, ISA Certified Arborist

Arborists have been installing flexible support systems in trees for the last hundred years. The first systems utilized chains instead of cables, it was soon discovered that steel cables were easier to install. Tree cabling systems can greatly reduce the possibility that a tree with weakly connected limbs will split apart. Homeowners often believe that a section of their tree failed as the result of a lightning strike, but most often the breakage is due to a weak crotch that split out from the tree.

Tree cabling systems are a valuable method to manage weakly connected tree crotches.

A cable tree support system consists of high-tension steel cables that are anchored to galvanized steel eyebolts. Our industry's specifications call for cabling systems to be installed at a height that is 2/3 the height of the tree above the crotch. The placement of the cables is also a field decision, based on the installation guidelines and the architecture of the tree. Because the cables are placed high up in the crown of the tree, the cables and eyebolts usually do not interfere with the aesthetics of the tree. There are a number of diameter eyebolts and cables to choose from, with the most common size being half-inch diameter eyebolts and quarter-inch diameter cable. The hole that we drill and insert the eyebolts into is normally small in proportion to the limb and generally causes little harm to the tree. The cables are attached to the eyebolts with tree grips that form a friction lock on the cables. The cable can also be anchored by a method that is called splicing, which involves unwrapping the end of the cable and winding individual strains to form a braid that anchors the cable to the eyebolt. The cables are installed so that they are taut but not overly tight.

Tree cabling systems are a valuable way to manage weakly connected tree crotches. Proper pruning of mature trees can reduce the weight on leaders, and goes hand and hand with a good cabling system. Young tree structure pruning can eliminate some of a tree's weakly connected branches early in a tree's development and reduce the need for cabling systems in mature trees.

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Feature Tree

George W. Childs' Weeping Hemlock

Tsuga canadensis 'Pendula'
Weeping Hemlock

In 1891, George W. Childs completed his 196-acre property and house — called Wootton — on Bryn Mawr Avenue in Bryn Mawr. The grounds included several buildings, a clock tower, a 40-acre dairy farm, a water pump house, extensive greenhouses, forcing houses, formal gardens and vegetable gardens. The estate is now the home of St. Aloysius Academy.

Once a farm, this property was extensively planted with trees. Mr. Childs was fond of having his guests plant memorial trees such as oaks and beeches. General Ulysses S. Grant gifted an oak tree after a visit to Wootton in 1876.

Today, there are many large trees on the property, including several from the late 1800s. Our feature tree, a weeping hemlock, dates back to the original estate and is located to the left of the main driveway as you enter.

While the Eastern hemlock is the Pennsylvania state tree and widely planted, the weeping hemlock is more of a collectors' tree. The *Pendula* cultivar makes a very beautiful specimen, slowly growing to ten to fifteen feet in height and thirty feet wide. The branch habit is multi-layered with dark green needles. Limbs spread horizontally in a graceful manner. The weeping hemlocks planted by George W. Childs are among the largest in the country.