INTERNATIONAL SOCIETY OF ARBORICULTURE

ARBORIST·NEWS

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On the cover: December 2008 New England ice storm Photo Credit: Lacy Girard

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DETECTIVE DENDRO

THE DIAGNOSTIC SLEUTH

By Guy Meilleur

The Case of the Fearsome Fossil

My six-week tour of Japan was almost up. I'd learned bonsai pruning methods for the landscape and an ancient appreciation of the immortality of trees, all new to my Western mind. My last stop was Hiroshima, one kilometer from the centre of a nuclear explosion in 1945. The spring following the bombing, a ginkgo (*Ginkgo biloba*) tree sprouted, and received good care. The now magnificent tree is a symbol for peace, sensibility, and a better future. I flew home with an optimistic outlook.

Elsewhere, urban forester Ashley Green held the telephone away from her ear as a caller complained about a female ginkgo tree, ". . . stink bombs . . . property values . . . hazard." Green promised to inspect the tree on Thursday. After arriving, she pulled her assessment kit from the back of her hybrid car while the landowner lamented her trouble with the tree.

"Please allow me to focus on the tree now," Green said as she inspected the site and assessed the tree. The citizen peered over the urban forester's shoulder as Green noted in her report:

1. Soil is mounding on the tension side of the lean, heaving the sidewalk and creating a tripping hazard.
2. The trunk has a significant lean of 15 to 17 degrees.
3. One limb failed in 2007, another in September 2008, when the tree was heavy with fruit.
4. Two wounds, from branches broken by trucks, are four inches (10 cm) apart and facing the street. If they decay, they can combine, increasing risk.
5. The weight of the fruit seems to be causing limb failure. More fruit will add more weight in the future, and the tree will be stressed to hold itself together.
6. The species is inappropriately large at maturity for this four-foot (1.3 m) wide site.
7. Other municipalities restrict the planting of female ginkgo trees.
8. Citizens complained about the risk of slipping, plus the stink of the seed coating.
9. A replacement tree will add value to the neighborhood and the urban forest without controversy.

Ashley shut her laptop as the citizen resumed complaining. Green responded: "I share your concern about public safety, and I will submit this report to the Historic Commission. Here's my card; I have to go to my next tree inspection now."

The commission reviewed the application and scheduled a public hearing on the following Monday.

Believing the female ginkgo to pose no real nuisance, nine neighbors, upon learning of the hearing, e-mailed me the Saturday prior and asked me to advocate for the tree.

"Gladly," I replied. "As a professional consultant I must always be objective and independent, but in an advocacy role I do not have to be impartial. This allows an unrestricted presentation of solutions. But Ashley can always back up her work, so it won't be easy." I downloaded the case documents, researched the facts, and drafted a preliminary report. Come Monday morning, Codit and I went to work.

Can Dendro resolve this tree's risk factors in time to save it? Turn to page 63 for the answer.

Trunk lean, wounds, litter nuisance, hardscape hassles—this "fossil tree" incites fear and loathing in some residents, respect and reverence in others.

Sprays Ineffective for Preventing Sapsucker Damage on Sugar Maple (*Acer saccharum*)

E. Thomas Smiley

The yellow-bellied sapsucker (*Sphyrapicus varius*) is the primary cause of sapsucker damage on trees in the eastern United States. Twenty sugar maple (*Acer saccharum*) trunks were treated with repellent sprays and compared with untreated controls. Sprays applied were bitrex, methyl anthraniltate, and thiram. Sapsucker feeding damage was quantified weekly. None of the sprays were effective in reducing trunk attack by sapsucker.

Challenging Chinese Hemlock (*Tsuga chinensis*) with Hemlock Woolly Adelgid (*Adelges tsugae*) Ovisacs

Benjamin K. Hoover, Ricky M. Bates, James C. Sellmer, and Gregory A. Hoover

Chinese hemlock (*Tsuga chinensis*) is a promising candidate for use as an ornamental tree in the mid-Atlantic region of the United States where native hemlocks have been devastated by hemlock woolly adelgid (*Adelges tsugae*). Published research has indicated that Chinese hemlock is adaptable to USDA Zone 6 and has some degree of resistance to hemlock woolly adelgid. Chinese hemlock has been observed to be resistant to hemlock woolly adelgid while growing in close proximity to infested eastern hemlocks, although a direct challenge of the species has not previously been documented. This study reports on the development of a procedure for challenging hemlocks with hemlock woolly adelgid ovisacs to determine host plant resistance and the use of the procedure to challenge Chinese hemlock. Chinese hemlock demonstrated complete resistance to hemlock woolly adelgid. A-N

WHAT'S THE DIAGNOSIS?

Codit parked across the street from the golden carpet of freshly fallen fan-shaped leaves. He reached for the digging tools, but I grabbed them first. "I'll find the flare this time," I said, handing him the rake and the dustpan. "Your job will be to harvest the nuts."

"Great—I hate digging all the time," Codit grinned, as I started clearing soil from the trunk, searching for the buttress roots. I'd dug about six inches on the sidewalk side when I heard him: "Eewww, what is this stinky stuff?"

"Oh, I forgot to tell you," I innocently replied, hiding a smile, "We don't need that fragrant seed coating, so please wash it off using that hose near the porch before loading them." Codit's grumbling faded as I pried a one-inch (2.5 cm) girdling root off the stem, and found the top of the flare a foot (30 cm) down. I took pictures of the branch wounds and the curving upper trunk. My probe didn't find any air pockets under the roots. After inspection, we both spoke with neighbors passing by, to see what they thought of the tree.

The hearing time was near, so we packed up our gear and headed down to city hall. I amended my draft report while Codit drove, and we arrived at the public hearing in the nick of time.

As the hearing began, Ashley delivered her report in a factual fashion, listing the issues with the tree. The commission then heard from both the complainants and several neighbors who testified to the tree's value. Then the clerk linked computers so the commissioners could follow along as I delivered my report. I straightened my tie, buttoned my jacket, and walked to the table.

Human error causes instability issues. Burying the trunk flare resulted in a stem-girdling root. Removing the root, and the fill, dries the root crown and restores safer conditions.

"Thank you, ladies and gentlemen, for hearing my report. The urban forester has done an excellent job of systematically assessing this tree's risk, and my report before you will address each of her concerns in order.

1. The sidewalk is heaving because excess soil forces the roots upward toward higher oxygen levels. Roots under tension grow stronger as the tree reacts to its lean. There are no air pockets or other evidence of "soil mounding," which occurs when roots are pulled out of the earth. The city's engineers tell me they will remove the damaged sidewalk panels and install new ones above the tree roots, which is an excellent strategy.
2. The trunk curves back to vertical at ten feet (3 m). Trees with leaning lower trunks and upright-growing tops are called 'self-correcting'. They are unlikely to fail. The lean can be monitored with a plumb-bob and a level.
3. The wounds from limb failure are closing well, with substantial growth of woundwood—'scar tissue'—around them.
4. This young ginkgo tree has high vitality and decay-resistant wood.
5. Overextended branches can be shortened to better distribute the fruit load.
6. The species is slow-growing, so the hardscape can be adjusted over time as it matures.
7. Some municipalities chemically thin the fruit every year by injection and spraying. Others tolerate the litter.
8. Slipping can be caused by other tree litter, including wet leaves. The adjacent owner and other neighbors have offered to remove the nuts weekly. The smell can also be mitigated by planting

►

What's the Diagnosis (continued)

Osmanthus fragrans nearby. This large shrub's pleasantly fragrant flower opens around the time that the ginkgo fruit forms, so it would compensate for the ginkgo's offensive odor.

9. No one can assure that any tree will be without controversy, and babies do not replace adults. This 15-inch (38 cm) dbh tree has a cross-sectional area of 177 in^2 (0.1 m^2). Three 5-inch (12.7 cm) trees would not replace this ginkgo—it would take nine trees that size to replace its trunk area and its contributions. Large trees deliver much greater value to our air and water, and contribute to a safe and healthy environment."

The commissioners were shifting in their seats, so I quickly concluded, "Trees tend toward immortality, and ginkgo trees deliver durability, beauty, and value beyond all others. Ironically, this specimen is on the southwest side of the complainants' house, so their tenants can save hundreds of dollars in cooling costs over its long life. The nut within the foul-smelling seed coating is a prized delicacy and considered an invaluable food for long life. For at least 5,000 years, people have grown the ginkgo for its nuts, making this species the oldest cultivated nut tree on earth. Ginkgoes survived the dinosaurs, but this 'fossil' is not fearsome. Removing this tree would go against urban forestry's most vital goals."

The Historic Commission set aside the request removal, pending cooperation among the neighbors. Afterward, Ashley and I walked to a local Japanese restaurant. Our dinner was delicious, with extra onions in the spicy stir-fry. The waitress' kimono crinkled crisply as she placed a tray of sake and a bowl of nuts before us. Ashley held one of the nuts up to the lantern's low light and studied its greenish glint. "What kind of nut is this?" she asked, popping it into her mouth.

"In Japan we call it the silver apricot, ginkyo," the waitress answered with a slight bow.

Ashley choked back a cough. I raised a toast. "Here's to your health and long life." Our glasses touched, our eyes met, we sipped the fiery liquid, and warm feelings spread. I raised my glass again. "Here's to healthy, long-lived trees."

Ashley's eyes watered as she raised her water glass and agreed, "I'll drink to that. Bottoms up!"

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Guy Meilleur is an ISA Certified Tree Worker and international consulting arborist, climbing trees as an antidote to aging.

Washington D.C. Ginkgoes Cause a Stir

The District of Columbia (U.S.) is populated with several hundred ginkgo trees, and as recently reported by national newspaper *The Washington Post*, is ripe on the minds of many of its residents.

On sidewalks from Capitol Hill to Kalorama, an affluent segment of northwest Washington D.C., ginkgo (*ginkgo biloba*) trees are already well into their annual process of fruit shedding. The city's aesthetics, which benefits from many large ginkgoes that date back several decades, is taking a hard hit from the noxious smell of innumerable fruit dropping from more than a thousand trees.

The female ginkgo trees, which produce the fruits, seem unusually potent this season. The fruit itself fills which butyric acid (found in such unpleasant sources as rancid butter or fermenting animal fat), and is a less than desirable addition to a stroll on any urban hardscape.

As one might guess, with the increase in fruiting has come an increase in domestic complaints from businesses and individuals, about the horrid smell of the fruits.

The district usually sprays its ginkgoes, to stop them from reproducing, but this is often of varying success because a healthy rain shower can easily wash away the chemicals.

This season, district arborists opted instead for an injection treatment for the trees. Injecting chemicals in the base of fruit-producing ginkgo trees was thought to have been the new solution. The problem? Simply put, "It wasn't as effective as we had hoped," as one city arborist bluntly commented to *The Washington Post*.

Now, rather than shedding its flowers before they transform into fruit (as the chemical injection should have allowed), the female ginkgo trees are instead still developing their fruits and may be dropping them at a higher rate. As a result, the fruit is being trampled beneath pedestrian traffic, grinding the fruits (and their smell) into several sidewalks.

At the moment, with an improperly functioning chemical and several hundred female ginkgoes actively reproducing, many D.C. residents are holding their breath until another solution crops up.

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