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ARBORIST NEWS

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MUTCF 2011

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This month's CEU article discusses tree rings and their connection to a tree's local environment. Learn about tree ring formations and how to interpret them.



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There are numerous ways an arborist can approach assessing tree risk, but there are a few key tenets that should likely be included in each strategy.



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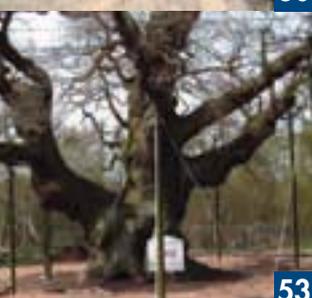
Details of this year's Urban Tree Care Forum have emerged. The event included various career fairs and service projects, engaging students with active professionals.



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What should arborists and urban foresters keep in mind during large scale tree relocation? Dan Howse offers a few solutions.



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There is a lot to be learned from old trees, writes Neville Fay. There's also a lot to be learned from the ecosystems that nurture these ancient trees.



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The inaugural cycling Ride for Research recently wrapped. During the 32-mile tour, several members of the UK tree care community cycled around London, planting trees and raising funds for research.

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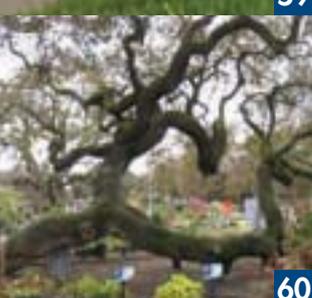
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DETECTIVE DENDRO™

THE DIAGNOSTIC SLEUTH

By Nora Bryan



The Case of the Fantastic Fans

A gentle breeze curled through the open window, bringing with it the heady perfume of lilacs. I smiled lazily as I put the phone back in its cradle. I popped my earbuds back in and closed my eyes to the gentle strains of Modern Jazz Quartet's *Willow Weep for Me*. I had just convinced the board of a new condo complex, Whispering Willows, to not have their willows topped and shaped into inglorious lollipops. A little structural

pruning every couple of years would be cheaper, safer, and infinitely more beautiful in the long run.

"Tree care is heading in the right direction today," I thought.

The door slammed, announcing Codit's arrival. His shoulders were doing a special kind of dance and his head was bobbing enthusiastically back and forth. "Whatcha listening to, Dendro?" he hollered as he removed the large, "rad" headphones from his bandanna-wrapped head. This was new.

"Just relaxing with some MJQ," I replied, yawning and stretching.

"Uh, yeah, sure," nodded Codit, who clearly had no idea. "I just got the new Eminem," he declared with satisfaction, plopping himself down.

"M&M's, eh? I like candy," I nodded, pretending to know what Codit meant.

"What's up today, Dendro?" Codit asked just as the phone jangled insistently.

"Detective Dendro here, ready to detect your dendrological mysteries," I answered.

A sultry southern drawl carried with it a troubled tone, "Oh, detective, I'm so glad you can help. I'm Miss Fanny LaBranche, and my most cherished lilacs (*Syringa* spp.) have been afflicted with the most alarming disfiguration." I got the remaining details from the distraught Miss Fanny.

"Codit, we have some lilac detecting to do," I said.

"Lilacs..." grumbled Codit with disgust. I knew he wanted to climb something tricky to go with his new dangerous image.

"It's important to my client, and it's a case for us, which we need," I reminded him, adding, "and you're not wearing that!" I pointed at Codit's colorful bandanna. "We will look like the professional diagnosticians we are!"

Codit grabbed his ISA ball cap and followed me out of the door.

Turning up the curved drive of Miss Fanny's home, I couldn't help but admire the lush plantings and well-maintained, mature trees.

As we stepped from the vehicle, an elegant lady dressed in pale green chiffon floated toward us fluttering a fan. "I'm Miss Fanny and I'm so glad to meet you, detective, and your fine young assistant, too," Miss Fanny graciously gushed. "Let us waste no time... if you please," as she offered me her arm.

We headed to the back garden along a shaded path. Around the corner and under an ancient and sprawling white oak (*Quercus alba*), a slightly plump, pretty young woman with blonde curls was twirling in a tire swing.

"Christa, come and meet our saviors," called Miss Fanny. "This is my niece, Christa. Christa, this is the famous Detective Dendro and his fine assistant..." Miss Fanny faltered.

"Codit," my assistant offered, warming to the idea of being a savior.

"Pleased to meet you," purred the young woman, batting her china blue eyes at Codit.

"Christa, please fetch some refreshments for our guests," Miss Fanny said.

With Christa on her errand, Miss Fanny led us to a small patch of fragrant lilacs. "I just love lilacs," she said. "They don't grow in the Deep South where I come from and they are my most favorite shrub. When my late husband, God bless his soul, brought me here as a bride, I fell in love with them."

Codit and I examined the "patient," which was a collection of well-maintained French hybrid lilacs (*Syringa vulgaris*) about six feet tall. These sturdy and reliable shrubs seemed very healthy—as they usually are—except for some very odd-looking fan-like growths on the ends of several of the stems. I relaxed. This grand garden would be saved after all.



Detective Dendro must diagnose some disfigured lilacs.

THE DOW GARDENS ARCHIVE. BUGWOOD.ORG

“Well, Codit,” I asked my trusty assistant, “What do you see?”
 “We’ve seen this before, Dendro,” Codit said with confidence.
 “Remember that patch of lilacs with the deformed leaves and twisted stems? Herbicide used on nearby weeds had poisoned the shrubs. Sometimes people forget that trees and shrubs can be harmed by weed killers,” Codit proclaimed in a tone that would have made Arbor Cop proud.

“Oh, no!” exclaimed Miss Fanny. “I never allow chemicals in my garden, nor do my neighbors.”

“Or maybe some kind of improper pruning damaged the buds...” Codit trailed, suspecting that this immaculately maintained garden would have nothing but expert care.

“Young man, I assure you my gardener has been trained to the highest standards of ornamental pruning. He is sheer genius!” Miss Fanny flicked her lacy fan impatiently.

Codit looked chastened, but I encouraged him, “Damage to buds is not an unreasonable hypothesis, Codit. Continue that thought.”

“We had that unseasonable cold snap last year. Maybe frost damaged the buds, Dendro,” he suggested hopefully.

“Maybe,” I said enigmatically. “Keep expanding your ideas!”

I knew Codit was baffled, but he was using good reasoning. “It could be a disease,” he mused, “but Miss Fanny, I can assure you that unlike herbicide poisoning a disease will probably not harm other plant species. Diseases and other pests usually have very specific appetites.”

“Well put, Codit,” I beamed. Codit blushed with pride under the approving smile of the lovely Christa, who had returned with a tray of sparkling lemonade.

“I feel a little better,” said Miss Fanny, “but I must know if my lilacs will live on to sweeten my remaining springs,” and she flourished her fan dramatically at her bosom.

Codit shuffled his feet, keenly aware of Christa who had bent down to pick a colorful and strangely crenellated bloom from a cockscomb (*Celosia cristata*) in a bed of annuals.

“It’s a new cultivar! This lilac is supposed to look like this!” Codit suddenly declared.

Christa straightened and examined the odd lilac stems for the first time. “It’s most fascinating,” she declared while twirling the strange bloom in her fingers absentmindedly.

“You are very close, Codit,” I said, “Christa has almost uttered the answer and holds another key in her hand.”

“Little ole me?” giggled Christa. Codit looked perplexed and a little chagrined that he had almost been outguessed.

“Ohhhhh...” Codit nodded slowly, a new idea dawning in his eager eyes. “I see what it is!”

Confident that Codit had honed in on the answer, I suggested that he reveal the answer to Christa while I took a stroll with Miss Fanny to explain the same mystery while enjoying the charm of this southern belle and her glorious garden. I left Codit there, sweaty and nervous, unsure how to begin.

How have Christa’s innocent comments provided Codit the mental cues needed to solve the cause of the mysterious lilac fans? Turn to page 57.

JUST FOR FUN

Taking Care of Old Trees Directions: Unscramble each of the clue words on the left in the spaces provided. Copy the letters of the numbered boxes at the bottom, matching up their number, to reveal the final key word. **Answers on page 68**

CANNITE

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Key Word:

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1 2 3 4 5 6 7 8 9 10 11 12

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Maintaining Old Trees in the Human Landscape (continued)

necessary to stimulate the growth of reaction wood. Strong dynamic or static cables can also act as fail-safe devices for failure-prone limbs, catching them should they fracture. The likelihood of introducing decay is also significantly reduced, because dynamic cabling systems do not require drilling to install fixed anchoring points such as eye bolts. Another method is propping, which is used extensively in many parts of the world, but has not yet gained traction in North America. Props are not appropriate in all circumstances, but can be designed to carefully balance the needs of the tree with other important considerations, such as aesthetics.

Perhaps the most effective method of risk mitigation and veteran tree maintenance promoted by many veteran tree advocates is the practice of retrenchment pruning. This method seeks to replicate the natural aging process and involves directed pruning of the outer canopy to stimulate internal growth, sometimes even employing internodal heading cuts. These pruning techniques also reduce the wind sail area of a tree's crown and long lever arms, thereby reducing the overall risks associated with failure during significant loading events, such as wind or ice storms. Opponents of this methodology point out the commonly accepted consequences associated with topping: weak branch attachments, vigorous sprouting, and poor decay compartmentalization. Proponents maintain the view that the judicious application of such pruning methods forms are just one part of a long-term commitment to the tree, which must include a regular maintenance and monitoring regime.

The overall objective of a retrenchment maintenance program, which may be somewhat reminiscent of historical pollarding and coppicing techniques, is to maintain a reduced size and enable the long-term retention of the tree. Proponents of this methodology also contend that such measures cannot be applied across the board, but may be applicable for special cases, particularly among trees of high landscape, biodiversity, and heritage value when determined appropriate by arborists or others experienced in veteran tree management techniques.

The latter point highlights a simple truth underlying the entirety of conservation arboriculture and veteran tree management: it is still an evolving discipline, and the key to its success will be experience, innovation, experimentation, knowledge transfer, and adaptation. Those involved are playing a part in a new knowledge community. Veteran trees are survivors by nature and can considerably outlive our professional life spans. However, because mistakes can lead to irreplaceable loss, it is important that practitioner experience and contributions from other disciplines are shared. While some attempts to maintain veteran trees on the human landscape may fail, the benefits derived from the successes will far outweigh the costs. As arborists and urban foresters move towards a greater understanding of the life stages of aging trees, the benefits associated with their retention, and the tools and techniques for their management, future generations will reap the rewards of these living monuments to cultural and natural heritage.

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This article is the summary of a presentation to ISA's 86th Annual Conference & Trade Show, which was held July 27, 2010 (Chicago, Illinois).

Read, H. (Ed.) 2000. *Veteran trees: A guide to good management*.
Natural England, Peterborough.

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For more information regarding The Ancient Tree Forum, visit their official website (www.woodland-trust.org.uk/ancient-tree-forum).



WHAT'S THE SOLUTION?

I concluded my discussion with Miss Fanny about the odd form of her lilacs. "And so, although strange, I hope my explanation has reassured you that your lilacs are in no danger. While unusual, they will continue to be healthy and provide bountiful blooms for years to come."

"Yes, I'm much relieved," Miss Fanny sighed, fanning her dewy brow.

We approached Codit, who was speaking with Christa as she twirled lazily in the tire swing. She shook out her blonde curls and gave Codit a coy smile. I chuckled. Codit was in full savior mode, trying to disguise his nervousness.

"And remember I was saying how tree and shrub branches typically grow? Not like those strange lilac fans, but how the living tissue called cambium is right under the bark. It expands outward every year to increase branch size and create annual rings, and lengthwise to make branches longer so that growth is like an expanding cylinder," Codit went on, blushing and looking anywhere but at Christa as he dug his boots nervously into the dirt.

"Mmm-hmm," Christa said dreamily.

"Thank you, detective, for today's most interesting botany lesson!" Miss Fanny proclaimed. "Knowing that the problem with my lilac is not so terrible is reassuring, even if it is still a bit of a mystery in its details. And maybe I will leave these mysterious branches. They do look rather intriguing now that I know nothing sinister is afoot!"

I thanked Miss Fanny for her hospitality. In turn, she thanked me again, both her elegant hands wrapped around mine.

"So how was your conversation with the lovely Miss Christa?" I prodded when we pulled out of the drive.

"Well, when I saw the cockscomb Christa was holding, I remembered from botany class that this strange form of popular annual flower is caused by a mutation called fasciation. And right then I put two and two together." Codit put his arms behind his head, looking smug. "Now, in the case of the cockscomb, its unusual flower form comes from true seeds, so this mutation is a separate cultivar. But in the case of other plants, such as these lilacs, fasciation arises for a variety of possible reasons, and we don't always know why. The apical meristem tissue at the shoot end, which should elongate, fails to develop in the normal lengthwise dimension. Instead, it grows outward—perpendicular to normal growth. Sometimes adjacent growing points fuse together and make a broad, flat limb instead of a cylindrical one."

"You have done well with the 'what,' Codit. Now what about the 'why?'" I asked. I reminded him to dig through the scenarios he explored earlier at Miss Fanny's.

Codit concentrated for awhile. "A-ha! My weather damage scenario fits. Damage to buds could induce fasciated growth! And bad pruning could, too, like internodal cuts or cuts too close to the buds. Of course, not in Miss Fanny's lilac's case," Codit hastily added.

"Very good, Codit. You were aiming pretty close with your idea about chemicals, too. Growth hormones have been used to induce fasciation experimentally.

Some researchers have implicated fertilizer overdose and, in other instances, mineral deficiencies may be to blame. You also grazed the answer with your gall theory. Insects and mites have been implicated in a few cases of fasciation. And, I'll add more. Viruses or diseases are other possible biotic causes."

"Wow. There are a lot of possible reasons," Codit surmised. "I guess we may never know the cause of each instance, but at least knowing that fasciation seldom harms a plant makes finding the cause less pressing."

Codit unwrapped a sandwich he had brought along and took a bite. I asked, "So, it's not dangerous then?"

"No. Fasciations are not necessarily bad, and they aren't poisonous or infectious. Why are you asking?" Codit squinted at me.

"Good thing then, looking at that crenellated beefsteak tomato sticking out of your sandwich. Wouldn't want you to get sick now that you're becoming such a font of knowledge!" I laughed.

"This tomato is a . . .?" Codit looked at it suspiciously for awhile before popping the last of it in his mouth.

Nora Bryan is an ISA Certified Arborist in the ISA Prairie Chapter. She is a production arborist caring for trees in the City of Calgary, Alberta, Canada.

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