
DETECTIVE DENDRO

THE DIAGNOSTIC SLEUTH

By Guy Meilleur



The Case of the Heartless Hedge

With the holiday season upon us, Codit and I were literally sprucing up the office, twisting small branches of *Picea* sp. around wire frames to make wreaths for our favorite clients. “Ouch!” Codit complained. “These needles are prickly. Spruce does smell good, but I wish we could use softer foliage for these things.” I started to reply, but the telephone’s ring cut me off.

“Detective Dendro, is that you?” The voice over the phone sounded relieved. “I need an ISA Board Certified Master Arborist® to diagnose a problem with my Leyland cypress (× *Cupressocyparis leylandii*) hedge. I planted them ten years ago and now some of the branches are dying. Can you help?”

I told her our hourly rate, she agreed and emailed us her address, and we were on the case. Codit licked the sap off his prickled digits and typed her address into the search engine. “This satellite image was recorded a few years back, and the plants look pretty good, from overhead and street views,” he reported. “But that’s no replacement for onsite inspection. Her place is pretty close—let’s go there after we grab some lunch.”

“If you want to help the *leylandii*, no time like the present. Lunch later—grab the library, and let’s go!”

I held the door open as Codit hoisted the crate of books and carried them to the truck, grumbling all the way. “My tablet weighs next to nothing,” he said. “It can access more information than there is in this heavy crate. Someday you’ll catch on to new ways, old man.”

I snapped my seatbelt, turned the key, and gave my best Yoda impression. “Oh, catch on I will, and too you will catch on, padawan learner. You expect to see symptoms and signs, do you?”

Codit smiled. “Dying branches, Leyland cypress . . . probably *Seiridium* canker—but you’ve taught me not to let theories get ahead of the facts, so that’s all I’m sayin’, for now.” He returned to reading *Seiridium* info his tablet. I pumped up the volume on the radio, and immersed myself into a fine saxophone solo. Before we knew it, we were there.

“Nice looking hedge,” Codit observed as I parked the truck and grabbed our diagnostic kit.

We walked toward the problem plants. They were lined up along the northern border and blocked the view of the house next door. As I looked down the row, I noted foliage color and density, and bark texture and color. The plants on the downhill end of the row looked the worst.

My eyes got to the end of the hedge just as the client walked around it. She was the kind of woman who gave a man 20-10 vision. Her hair was russet-colored, dark brown with a reddish-orange tinge. Her dark green eyes sparkled like emeralds infused with chlorophyll, though they were clearly clouded by her × *Cupressocyparis* concerns.

“Hello, my name is Layla Q. Pressa. Detective Dendro, I presume?” she inquired, grasping my hand warmly. The electricity licked my palm and shocked me to action.

“Yes, ma’am, at your service,” I smiled back. “This is my assistant, Codit. Now that we’re near your plants, I’m starting to see their problems.” Grimly grimacing, she beckoned us to follow her to the northern, shady side of the hedge. It was not a pretty sight.

“Well, so much for the *Seiridium* theory.” Codit pulled his hand lens out of his shirt pocket as he waded into the greenery. “With *Seiridium*, the dead needles are typically



There are holes in the heart of this Leyland cypress (× *Cupressocyparis leylandii*) hedge. Dendro and Codit are on the case.

lighter colored and entire branches are dead. Most of these branches are green at the tips, but interior foliage looks yucky gray. Could the culprit in this case be as simple as shade?”

“I like the way these trees were planted,” I complimented the client as I pulled on lower branches to see all sides, “At least two meters (six feet) apart, in a staggered row. They’re positioned to give you a privacy screen, a windbreak as a shelter from storms, erosion control, a buffer from noise, air cooling and purification, and provide wildlife habitat to boot.”

“Codit, we cannot prescribe action until a basic root collar examination (RCX) is performed. First comes the RCX, then the Rx, the prescription. Please remove the soil and mulch from these two stems, and find the flare. Feel for sunken areas and bumps, and look carefully at the coloration.”

My assistant quickly pulled out his trowel, and with a few scrapes the job was done. “Not bad, boss! Less than 10 centimeters (four inches) of mulch and soil was on the stems, and flares are close to grade. Bark color looks okay, and sapwood turgor feels normal. No girdling, but a few circling and upward-growing roots that I pruned.”

Layla’s eyebrows knit in concentration as she took it all in. “It seems that you have eliminated some suspects, but why is my hedge losing its heart? There’s been regular rain this year, and it hasn’t been too hot. I really do not want to lose these plants.”

I dug up a little soil, tried to roll it into a cylinder, and smelled it. Only a few roots were black. I rubbed the half-dead foliage and sniffed the aromatic oils. I flexed the branches, zooming in with my hand lens and scratching the bark to check vitality. I studied the symptoms in the leaves and the bark, spreading upward and outward. A few branches ended in an ugly gray pallor in long-dead tips. “Let me check our mobile library. We’ll have preliminary specifications ready for you after lunch.”

Can Dendro and Codit help out these heartless hedges? Turn to page 72 to find out.



Observing the foliage color and density, and bark texture and color, Dendro spies the plants on the downhill end of the row.



Change for the good

Kaizen 善



Victoria McCarthy
Arborist

“I’m a new arborist at SavATree. It was really important for me to work in a company that uses the very best management and sustainable practices including integrated pest management. I’m impressed by the safety disciplines that SavATree follows, and the continual improvement philosophy of the company. This assures a promising future that benefits the company, its employees and its customers.”

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WHAT'S THE SOLUTION?

Codit frowned as he adjusted the focus of his microscope. “A ‘canker’ is a dead, diseased area on a plant, isn’t it? I tend to follow the ISA definition, as well as the tree care standards in Germany and the United Kingdom. Is it accurate to call dead areas that were killed by physical wounding ‘cankers’, too?”

“Not really.” I shook my head. “If a dead area is not diseased, it’s very different; much less of a concern. If it has good response growth, it may be stronger than it was before the wounding, and may seldom need cleaning or tracing. Dr. Shigo advised us to carry chisels with rounded corners, to noninvasively prune away infectious tissue in cankers, but lesions from *Cercospora* are too small and too numerous to manage with sanitation alone.”

Codit flipped to page 32, reading: “Symptoms . . . progressive browning and loss of foliage beginning on low branches close to the main stem and spreading outward year to year until either the plant is dead or foliage remains only on the topmost branches.’ It may be healthier than most *leylandii* hedges we get called to check out, but I’d rather work with trees.” Codit complained. “What are we messing around with shrubs for—aren’t we arborists?”

“Managing shrubs diversifies an arborist’s services and fills in nicely between tree jobs—especially in the winter.” I told him with a wink. “These *leylandii* tend to be single-stemmed and over five meters (15 feet) tall, so they’re real trees, but shrubs are also an arborist’s business. Our training in tree care qualifies us to handle smaller woody plants, like shrubs and even vines. We can apply our expertise to benefit our clients—and our own bottom line.

“As far as the name goes . . .” I leaned in to show him the photo on the page. “‘*Cercospora*’ is still the common name, though the primary pathogen is currently called *Passalora segoiae*.”



After needles die, branches fall prey to the pathogen, and to scavengers.

“So, *Cercospora* does most of its damage in the needles, while *Seiridium*’s baddest on the bark. Okay, but why did we have to stop here before lunch?” Codit complained, biting his apple.

“We went to the client’s home directly after her call for three reasons,” I explained, nibbling the nub of a green onion. “First, her plant problem was at the front of her mind, so she was primed to tell us all she knows. Second, I was tired of your complaining about the spruce needles—just kidding! Third, it’s good to show that we are committed to cracking the case.”

We headed back out to the hedge, where Layla was busy with her hand pruners, cutting back dead branches. “Good job clearing so far.” I congratulated her as Codit showed her the book. “The disease is *Cercospora* needle blight. The pathogen overwinters on dead foliage and thrives in damp conditions, so removing dead branches comes first. More light will come in, to induce adventitious growth of new interior foliage. This happens readily with *Cryptomeria* and *Juniperus* species, but is less common with *leylandii*. New growth can be encouraged by nicking the bark distal to the node, dispersing the downward flow of auxin.” I demonstrated with my thumbnail beyond a bulge, where a branch narrowed.

Layla sadly gazed at the forest of dead branches to clear. “Now I see the disease has been active for some time, but escaped my notice. That flexible strapping that Codit is examining was installed after a storm made two trees lean. We wanted to avoid damaging the bark.”

Codit pulled a knife and pliers out of the tool bag. “Some of it’s been swallowed by the tree’s radial growth, but I’ll get out all I can.” He cut the strap on both sides of a swallowed section, then clamped the pliers on one end, put one foot on the trunk, and pulled with all his might. “Success! It sl-l-lickly slid out—we got to it just in time. The leaning trees can be corrected by pruning—shall I do that while we’re here?”

“By all means!” Layla agreed. Codit left to get his climbing gear, and she latched her emerald eyes onto mine. “Tell me, Detective: How else can we help my trees?”

I felt dizzy as I read from my notes:

1. “After the dead needles are raked away, clear and rinse soil and dead material from stem tissue, out to 15 cm (six inches) .
2. After the stem dries, heat any weeping and infected areas on the trunks.
3. Drench trunks with phosphorous acid and growth regulator, as specified.
4. Use iron bar to aerate soil around infected trees, from one to three feet from the trunks. Fill holes with expanded aggregate, calcium fertilizer and specified microorganisms to help speed compartmentalization.
5. Above the sightline between the houses, remove or reduce every other branch to improve light and air penetration. Retain a natural form. Do not reduce stems. Avoid vigorous regrowth.”



Flexible strapping, installed following a storm to prevent the trees from leaning, has since been swallowed by tree growth. Time to remove it.

“Thank you.” Layla’s gaze grew softer, and my dizziness turned into a tingle. “So what’s the prognosis? Is there anything else we can do to fight this disease?”

I helped brace the ladder while Codit climbed. “The prognosis should be good after these cultural treatments, but a lot depends on weather. Considering how entrenched this disease is, chemical applications should start in early spring. Here’s a list of approved fungicides, and a list of certified applicators in this area.” Codit secured himself to the tree above the ladder and took out his hand saw, so I released the ladder and led Layla clear of the drop zone.

We toured the land around her home together, talking about arboricultural tricks and techniques to achieve her hopes and dreams. Arriving at her door, she grasped my hand again. “I’ll look for those specifications and your invoice. I want to restore the heart in my hedge.”

“Positively!” I replied, waving as I went back to Codit, to bag up the green brush. “I saw how the mobile library worked to reinforce the diagnosis,” he admitted. “There’s nothing like handling tree fibers as you turn the page, and reading soy stains in sunlight, black and white. And, that foliage is nice and soft, perfect for decorating.”

Codit happily hoisted the crate of books into the back seat. “The holidays will be happier for this hedge, and for my fingers.”

References

Sinclair, W.A., H.H. Lyon, and W.T. Johnson. 2005. Diseases of Trees and Shrubs. Second edition. Comstock Publishing Associates. New York, U.S. 676 pp.



Guy Meilleur is an ISA Board Certified Master Arborist with historictreecare.com. This is his 30th episode in this series. Photography courtesy of the author.

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