Beech Threat Nothing to Sneeze At

Paul Hetzler, ISA Certified Arborist

In the early 19th century, a Prussian diplomat asserted that "when France sneezes, the whole of Europe catches a cold." Things changed slightly since then. For a long while it has been an American financial sneeze supposedly able to make the world ill. Even though China's economy will soon zip past the US, other countries still put hankies to their faces when America coughs.

Canada has been covering up for some time now, but not for the usual reasons. For the past 150 years, America has exported tree diseases to us at a steady pace. To be fair, most weren't theirs to begin with, but they've shipped us Dutch elm disease, chestnut blight, butternut canker, beech-leaf disease, ash yellows, and now (probably) oak wilt.

And they've been generous to a fault with invasive forest pests, breaking the ice with gypsy moths quite early in our relationship. A few decades ago the "Big 3" automakers sold North American auto-parts jobs to the Chinese, who repaid richly. Like a twisted version of a kids' breakfast cereal, boxes of cheap Chinese auto parts arrived in Detroit with gleaming prizes inside: emerald ash borers, and then Asian longhorned beetles. Of course the US shared.

Just recently, however, Canada sneezed out a new invasive tree scourge, and American foresters should get out the Kleenex. The beech-leaf miner (*Orchestes fagi*), a weevil native to Europe, was first identified in 2012 near Halifax. Biologists think it probably landed around 2007, but as with many invasive pests, it took a few years for the problem to be noticed. It feeds on all species of *Fagus*, including exotic landscape trees, but the American beech, a native forest species whose nuts are eaten by a wide range of wildlife, is the greatest concern.

The larvae devour soft tissues between upper and lower leaf surfaces, "mining" tunnels which expand to encompass much of the leaf. Natural Resources Canada states that "Early results indicate American beech are dying after successive years of defoliation by the weevil. In Europe, the adults feed on a variety of alternate hosts, including cherry and apple, but this has not yet been observed in Nova Scotia."

The white larvae have a black head, and are less than 0.5 mm at first. When full-size (just prior to pupation), larvae reach 5 mm long. Adults are around 2.5 mm long, black with minute golden hairs and rather beefy back legs. According to invasiveinsects.ca, "the weevil larvae leaves a characteristic pattern useful for identifying its presence. A narrow linear mine begins from the mid-rib of the leaf to the margin where there is a blotch mine [large dead area]. The leaves may turn brown around the edges and wilt."

So far, the affected area is relatively small, but as scientists from Natural Resources Canada note, "Where the weevil has been established for 5 to 10 years, beech mortality increased from 18% in 2014 to 88% in 2015."

Forest Entomologist Mark Whitmore, Director of the Whitmore Lab at Cornell University in Ithaca NY, brought this to my attention in early September 2019. He had recently checked on hemlock woolly adelgid (another American gift) infestations in Nova Scotia. His email stated "Beech leaf miner is on nobody's radar [in the US] at the moment. I'm bringing it up with the US Forest Service, and hopefully more states will begin to look for it. I was very alarmed when I visited a couple weeks ago. It's a big deal, spreading rapidly in Nova Scotia with mortality."

At this time, the most important thing anyone can do is to not move firewood. Beech-leaf miner adults overwinter under bark, so bringing home a souvenir piece of bark or twig from vacation could be very significant. In the wake of Hurricane Dorian, I certainly hope cleanup and salvage crews are taking this threat seriously, and are observing Best Management Practices when moving equipment. If you think you may have found this pest, contact the CFIA Plant Health Surveillance Unit at http://www.inspection.gc.ca/plants/plant-pests-invasive-species/plant-pest-surveillance/eng/1344466499681/1344466638872

Also, cover your mouth with the crook of your elbow when you sneeze, even if you're alone in the woods. You never know what plague you might help prevent.

*A Permanent Resident of Canada, Paul Hetzler lives in Ottawa. He is a member of ISA-Ontario, the Canadian Institute of Forestry, and the Society of American Foresters. Before moving to Canada he was the Natural Resources Educator for Cornell University Extension in northern New York State. His book "*Shady Characters: Plant Vampires, Caterpillar Soup, Leprechaun Trees and Other Hilarities of the Natural World*," is available on amazon.ca.*