

THE SHADE TREE

A BI-MONTHLY BULLETIN DEVOTED TO NEW JERSEY'S SHADE TREES

Volume 94 – March - April 2021 – Issue 3 & 4

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DIRECTOR'S DISCOURSE

By Donna Massa

Thank you to all who attended our 95th Annual VIRTUAL Conference this past October. We hope that you found the conference to be most informative. We hosted over 500 virtual attendees! Your participation and continued patience helped to make the virtual conference a huge success!

SAVE THE DATE!

96 TH ANNUAL CONFERENCE

Crowne Plaza, Cherry Hill, NJ

Thursday-Friday, October 21-22, 2021

We would very much like to bring you a “live and in-person” conference this October. It is with hopeful hearts and minds that we plan for a “live” conference this year so that we may once again gather as a community. We will, however, always keep the health of our members, speakers, and staff in mind as well as strictly adhere to the guidelines dictated to us by other authorities. Be assured I will keep you posted on our plan for this year's conference as the plans develop. At the time of this writing, plan on a “live and in-person” conference this year at the Crowne Plaza in Cherry Hill, New Jersey October 21-22, 2021.

For those that sit on Shade Tree Commissions and your municipality participates in the Community Forestry Program run by the State of New Jersey, the Shade Tree Federation conference offers Community Forestry credits and Community Forestry Core Training needed to attain “Approved Status” under the New Jersey Shade Tree and Community Forestry Assistance Act.

BULLETIN OF THE NEW JERSEY SHADE TREE FEDERATION

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SAVE THE DATE!

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Membership in the Federation and attendance at our Annual Conference helps satisfy two of the four requirements needed to achieve “Approved Status” within the NJ Community Forestry Program and thereby demonstrates an effort on the part of the municipality to protect the community by caring for the shade trees in their towns. Having “Approved Status” under the New Jersey Shade Tree and Community Forestry Assistance Act provides a solid foundation for an active management of the tree resource and lays the framework by which a municipality has the ability to stand on strong legal ground regarding tree related decisions.

For the professionals in the industry, the NJ Shade Tree Federation Conference offers you LTE/LTCO credits needed to maintain your LTE/LTCO licenses in New Jersey as well as Maryland.

We also offer Pesticide Re-certification Credits in the states of New Jersey, Pennsylvania, and New York as well as ISA credits, New Jersey DPW credits and credits from the Society of American Foresters.

We work hard to design a two-day program for the conference that will meet the needs of the municipal employees and volunteers as well as professionals in the tree industry. Stay tuned for more detailed information about this year’s conference as the year progresses. The best is yet to come.....

**WEST ORANGE HIGH STUDENTS PARTNER
WITH TREE-PLENISH**

News-Record Vol .131, No.50, • January 21, 2021

In December 2020, Tree-Plenish partnered with more than 85 schools, including West Orange High School, to help build sustainable communities through youth engagement. West Orange High School plans to plant 243 trees on April 24, to offset the school’s paper usage during one academic year.

Tree-Plenish is mentoring the students throughout the whole process. With the help of Tree-Plenish, students calculated their school’s paper usage. In order to reach their planting goal, the students are relying on residents of the community to request that trees be planted in their yards.

Throughout the winter and early spring, students and schools plan their tree-planting events. Students start to market their event to the community in December. The tree-request process continues until about a month before the event is to take place, to allow time for the trees to be ordered and delivered. Students also reach out to their community to recruit volunteers to help plant trees on the day of the event, using guidelines provided by Tree-Plenish.

Residents can request that a tree be planted in their yard or sign up to volunteer to plant trees on the day of the event. The earlier homeowners request trees, the faster the students are able to reach their goals. If homeowners are unable to request a tree or volunteer their time, they can also make a monetary contribution on the Tree-Plenish website.

Marissa Edelman, a senior at West Orange High School and co-president of the WOHS Fight for Green Club, said, “When I heard about Tree-Plenish I felt it was an amazing initiative. I knew schools inevitably use a decent amount of paper and saw this as a great opportunity to do something about it!”

The fight for Green Club has student representation on the township’s Environmental Commission. West Orange Councilwoman Susan McCartney, as liaison to the West Orange Environmental Commission, encouraged the Tree-Plenish project and added that the student planting would coincide nicely with the township’s annual Arbor Day, Earth Hour and Earth Day events.

WHATEVER HAPPENED TO LOMBARDY POPLAR?

By Elisabeth Ginsburg • News Record Vol 131 No. 52

Worrall Media • February 4, 2021

The house where I grew up was sold to another family right after I got married, so my memories of the place have grown rose tinted over time. One thing is certain: The back garden was bounded by eight tall Lombardy poplar trees. My father loved them and they were everywhere in my hometown. Now they have gone the way of the elm and the American chestnut. More of them stand in old photos than in modern landscapes.

A mature Lombardy poplar stands 50 to 80 feet tall, but its columnar form means that its spread is only about 10 to 15 feet. The trees stand like exclamation points in the landscape and have long been used as borders or to flank driveways or roads. The trees are deciduous, and the green leaves turn



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yellow in the fall before disappearing for the winter. The impressive upright structure remains stark and beautify during the cold months.

Lombardy poplar, or *Populus nigra* “Italica,” is descended from trees native to Europe, North Africa and Russia. The species’ origin is somewhat murky, but it may have originated in the Lombardy region of Italy as early as the 1600s as a natural mutation of the black poplar. As a member of the useful, incredibly hardy and large willow or *Salix* family, it would have been very easy to propagate from cuttings, which may account for its quick spread through Europe, ultimately reaching America.

Lombardy is sometimes called “Mormon poplar” or “Mormon tree” because Mormon settlers planted them as windbreaks and boundary markers as they moved west in the mid-19th century. Author Wallace Stegner noted this in his elegiac book, “Mormon Country.”

The Mormons and generations of Americans through the 1950s and ‘60s loved the fact that Lombardies grew at an amazing rate. They were equally useful as shade trees and windbreaks for early farmsteads, as well as being appropriate complements to the Italian villa-style house that were popular as the 19th century turned to the 20th. Later on, the trees’ rapid growth contributed a sense of nearly instant permanence to the fast-growing suburbs of mid-century America. Landscapers used them so much that they became ubiquitous.

In spite of that rampant popularity, very few Lombardies dot the American landscape now.

Why did they disappear? They did not suffer the fate of chestnuts and elms, dying out en masse from a single disease or blight. They were, however, subject to a number of flaws that led to a precipitous decline in popularity.

The flip side of their fast-growing nature is that the trees are short-lived, dying within 30 or 40 years of planting – if they don’t succumb to aphids, borers or canker before that. The wood is weak and easily broken in storms. Like so many willow family members, Lombardies are shallow rooted and prone to forming root suckers easily. Those roots and suckers mean they are likely to uproot sidewalks, infiltrate pipes, interfere with lawn maintenance and cause other mayhem in home landscapes.

They also dislike the hot, sticky summer weather so prevalent in so many parts of the United States.

Poplars in general are often call “cottonwood trees” for the cottony material that aids their seeds’ voyage to the ground, sticking to houses, cars and

other trees as it does so. Female Lombardies produce lots of “cotton” and make a mess. You can avoid that by buying male trees, which are free of “cotton” but are laden with allergy-causing pollen.

The best that tree experts can say of Lombardies now is that they can be useful when planted in front of slower-growing trees to provide short-term landscape emphasis and shade. By the time the poplars succumb to ailments or age, the permanent trees will have reach respectable heights, allowing for any remaining Lombardies to be removed.

My father who loved Lombardies, also loved the Latin phrase “sic transit gloria mundi” – thus passes the glory of this world. That is perhaps the best epitaph for the once popular Lombardy poplar.

USDA ENDS DOMESTIC EAB QUARANTINE REGULATIONS

Illinois Urban Wood • 2/24/21

The U.S. Department of Agriculture’s Animal and Plant Health Inspection Service (APHIS) announced Dec. 14 that it is changing its approach to fight the emerald ash borer (EAB) infestation that has spread through much of the United States.

The agency published a final rule in the Dec. 15 Federal Register that removes the federal domestic EAB quarantine regulations that have proved ineffective and will redirect resources to more promising methods. The new rule took effect Jan. 14. Documents may be viewed online.

APHIS said it has been transparent about the challenges associated with controlling the emerald ash borer and that the domestic quarantine has not proven effective in stopping its spread. The agency has worked to identify more effective and less intrusive methods and will now direct available resources toward non-regulatory options for management and containment of the pest, such as rearing and releasing biological control agents. APHIS said results have already proved effective and the actions announced today will allow the agency to increase their use.

Removing the quarantine regulations ends APHIS’ domestic regulatory activities, which includes actions such as issuing permits, certificates and compliance agreements, making site visits, and conducting investigations of suspected violations.

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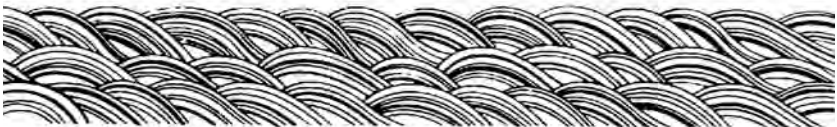
The fastest growing segment of the tree care industry is liquid tree fertilization and Doggett is leading the way. The spectacular growth in this field has come from the fact that the fertilizing method that helps trees the most also helps tree care companies the most.

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APHIS said it is working with the National Plant Board on effective strategies to manage firewood movement, which is one of the ways the emerald ash borer spreads.

Since first being detected in the Detroit area in 2002, the emerald ash borer has spread through 35 states and killed tens of millions of ash trees.

Illinois is among states that eliminated its internal quarantine regulations. Illinois discontinued its quarantine mandate in fall of 2015.

Meanwhile, officials of Minnesota and North Dakota, each said they would continue to enforce state emerald ash borer regulations. The Minnesota Department of Agriculture said this includes monitoring for EAB in un-infested areas, quarantining newly infested counties and regulating movement of wood products around the state. In addition, the department said it would take on some of the work previously carried out by the USDA by limiting the movement of ash and firewood from other states into Minnesota.

BREAKTHROUGH IN THE FIGHT AGAINST SPRUCE BARK BEETLES

Science Daily • February 16, 2021

For the first time, a research team led by Lund University in Sweden has mapped out exactly what happens when spruce bark beetles use their sense of smell to find trees and partners to reproduce with. The hope is that the results will lead to better pest control and protection of the forest in the future.

The Eurasian spruce bark beetle uses its sense of smell to locate trees and partners. The odours are captured via odorant receptors (proteins) in their antennae. Researchers have long understood the connection, but so far they have not known exactly which receptors bind to what pheromones. This is key knowledge for the long-term development of more effective and environmentally friendly pesticides and bark beetle traps used to protect the forest.

The research team were able to characterize the response of odorant receptors in bark beetles for the first time. They identified 73 different receptors in the antennae of the Eurasian spruce bark beetle (*Ips typographus*), and succeeded in characterizing the odour response in two of the receptors. One responds to the pheromone ipsenol, the other to ipsdienol.

"A large number of different bark beetle species use these pheromones

when communicating with scents, so the fact that we have been able to characterize them is a breakthrough," says Martin N Andersson who led the research group consisting of researchers in Lund, Germany and the Czech Republic.

The two receptors are thus the first ever to be characterized in bark beetles. To put the result into context, Martin N. Andersson says that within the entire insect order Coleoptera beetles, with more than 300,000 species on Earth, only three odour receptors had been characterized previously.

"Our results indicate that the pheromone receptors of different beetle species are evolutionarily unrelated, at least in the few species that have been studied. We also show that the odour response in these receptors is very specific, and we are the first in the world to be able to show exactly where in the receptors the pheromones are likely to bind," he says.

The results could make it possible to develop better and more environmentally friendly pest control methods. One approach is to try to find other odours that bind even better to the two receptors than ipsenol and ipsdienol. If such odours can be found, they can hopefully be used to disrupt the pheromone communication of spruce bark beetles -- either by a stronger activation of the receptor compared with the natural pheromone, or by blocking the receptor.

Another way could be to use the two characterized receptors in a biosensor that is under development. This would quickly locate spruce bark beetles and thus be able to identify infested trees before the bark beetles spread.

According to Martin N. Andersson, the practical applications are a few years away.

"Screening for better substances can begin in 2021. If we find something, the results must be confirmed in the lab and then evaluated in the field, and that would take two or three years. Using it in biosensors for monitoring and detection will probably take longer than that. However, our discovery means that the process can now begin," he concludes.

Story Source: Materials provided by Lund University



SCIENTISTS ALARMED BY BARK BEETLE BOOM

Science Daily • July 1, 2019

"Bark beetles lay waste to forests" -- "Climate change sends beetles into overdrive" -- "Bark beetles: can the spruce be saved?": These newspaper headlines of the past weeks covered the explosive growth of bark beetle populations and its devastating impact on timberlands. The problem is not limited to Germany. A comparable situation is encountered in many forests across Central Europe and North America. The consequences of this major infestation are massive: In 2018, the beetles were responsible for ruining around 40 million cubic metres of wood just in Central Europe.

Mass outbreaks of bark beetles usually last a couple of months to years and are followed by sudden declines in the beetle populations. Little is known about this natural phenomenon. In the current issue of the scientific journal *Trends in Ecology and Evolution*, researchers are therefore calling to step up research into the life cycle of the harmful insects. "We have taken a number of elaborate measures to protect our forests against bark beetles. But we still know very little about what triggers the variations in bark beetle populations," says Peter Biedermann, the lead author of the recently published study.

Biedermann is a researcher at the Department of Animal Ecology and Tropical Biology of the University of Würzburg. Together with colleagues from the Max Planck Institute for Chemical Ecology in Jena and the Bavarian Forest National Park, who contributed to the study, he therefore demands: "It is an urgency to create the scientific foundation now to enable forestry officials and politicians to respond more efficiently to bark beetle outbreaks in the future." The results from these studies could serve as blueprints to fight other harmful insect pests plaguing forests. According to Biedermann, the most important question is whether it might be a practicable approach in natural forests or timberlands to just do nothing in the event of a population boom of insect pests. Scientists in the Bavarian Forest National Park have observed that bark beetle populations collapsed after a few years when no counter-measures were taken.

Climate Change Exacerbates the Problem

The scientists believe that more needs to be known about the life cycle particularly of the spruce bark beetle also in view of the climate crisis. "The expected increases in the frequency and intensity of extreme weather events will additionally weaken German timberlands. Therefore, we will have to be prepared to tackle growing problems with the spruce bark beetle," says Jörg Müller, a professor at the Department of Animal Ecology and Tropical Biology at the University of Würzburg and Deputy Manager of the Bavarian Forest National Park



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Higher temperatures and intensifying summer droughts put trees and especially spruces under great pressure. Spruces are originally from mountain regions and it was only when they were widely planted out of economic interest that the conifer species also populated lower elevations. Spruces are not very resistant to heat and drought. Long-term water shortage weakens the tree's defences against the bark beetle -- chemical substances that harm the beetles and increased resin release which clogs up the beetle tunnels.

There are countless factors that influence the population size of insects such as the bark beetle. Natural enemies, pathogens, interspecific and intraspecific competition, landscape structures, tree population, resilience of the preferred host, temperature and precipitation. According to Jörg Müller, it is largely unknown which role each factor plays in the population dynamics of forest insects.

To remedy this lack of knowledge, the scientists suggest pooling the worldwide data, identifying knowledge gaps on the population dynamics of spruce bark beetles and other forest insects and using this as the basis to answer key questions on the interaction of various factors through new data surveys. In a second step, the insights gleaned from the results will be tested during experimental field studies to derive recommendations for action.

Support is Crucial

The scientists believe that support from forestry officials and public bodies as well as funding are essential. In their view, this support is necessary to achieve the ambitious goal of shedding light on the population development of bark beetles and other forest insects. This new approach could contribute to initiating efficient pest control management in forests.

Story Source: Materials provided by University of Würzburg.

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The image displays a variety of arborist supplies. On the left, there is a large coil of rope and a smaller coil of rope. In the center, there is a large coil of rope. To the right, there are several long, thin strips of material, possibly webbing or rope. In the foreground, there are several carabiners, pulleys, and other climbing hardware. A pair of pliers is also visible. The background shows a tree trunk.



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