



The West Virginia Chapter of The American Chestnut Foundation NEWSLETTER



In the heart of American chestnut's natural range

November 2021

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Cucumber Magnolia

Earlier this summer, a TACF member from Indiana, **Bill Deeter**, wrote and asked if WV-TACF members could collect cucumber magnolia seeds for him. Bill has orchards of pure American chestnuts at his farm in Plymouth, IN, south of South Bend, and he was willing to trade two pounds of American chestnuts for every pound of cucumber magnolia that we could supply.

To be honest, I was unfamiliar with cucumber magnolia. I had seen the tree in West Virginia, but I never paid any attention to the fruit, so looking for fruiting cucumber magnolia was a new venture for me. Once my wife and I became familiar with the fruit, they are easy to spot in mid-to-late September.

I thank **Dr. Jamie Shuler** (Department of Forestry at West Virginia University) who told me where to find a cucumber magnolia that was blooming. The tree was near the WestVaco Center at the University Forest in Preston County. That tree proved to be our first find of a fruiting tree. The problem is that most of the fruit of this species is high in the canopy. Many cucumber magnolia trees can reach 80' in height. We backed up our pickup truck to the trunk of the tree and

used long stick to knock out as many seed pods as we could. Subsequent trees were located in remote areas of Garrett County, MD.

A picture of a seed pod is pictured below, *courtesy of the University of Guelph Arboretum.*



As the seed pods ripen, they open up to unveil bright orange seeds as seen in the photo below.



The orange seeds are soaked in water for 2 days and when squeezed, the outer orange skin gives way to dark black seeds. These are dried overnight and then stored in the same moist medium used to store chestnuts.

The seeds are consumed by towhees and other ground-feeding birds as well as small mammals.

First Nations people used bark extracts as analgesics, antidiarrheal, cold and toothache remedies.

I will keep you informed as to the success I have with their stratification. If successful, I plan to plant a few cucumber magnolia on our Marion County farm for wildlife.

Harvesting Chestnuts at Clements Nursery

Even though the Clements tree nursery in Mason County has closed permanently, the two chestnut orchards are still producing nuts. On a beautiful fall day in early October, **Mark Double**, **Tom Saielli** (TACF's Mid-Atlantic Coordinator), and **Stephen Rist**, OH-TACF chapter president, met at the nursery to harvest chestnuts. Stephen is the District 4 Manager, Division of Forestry, for the Ohio Department of Natural Resources. Stephen is located in Athens, OH, only 45 minutes from the nursery. This is sharp contrast to Tom's 5-hour drive from his home in Charlottesville, VA.

Tom educated Mark and Stephen on his list of morphological traits that he uses to determine if trees are more American or more Chinese. Tom's assessment is set up that American traits (like leaf shape) receive a "1" while Chinese traits are scored a "0". Once all the traits are tallied, the higher the score, the more American a tree.

Traits were assessed first, and

then pole pruners were used to harvest burs high up in the canopy.

The orchards at Clements were initiated from nuts collected by **Dr. Gary Griffin** at Virginia Tech, along with the late **Dr. John Elkins** (Concord College) and the late **Bruce Givens** (WV Department of Agriculture). The three of them scoured the land for large, surviving American (LSAs) chestnut trees in the late 1970s. Nuts from the LSAs were used to start the Clements chestnut orchards. Surprisingly, the morphological traits of many of the trees we examined were not highly American. We found traits of Chinese, Japanese and European chestnut among the trees. While some trees had active chestnut blight, many of the trees exhibited no signs of blight at all--probably as a result of the Chinese and Japanese traits we witnessed.

Below is a photo of two leaves, as leaves play a large role in Tom's assessment. Scored are leaf shape, shape of the leaf teeth on the margin, and hairs on the leaf undersurface.



The top leaf is shiny, a Chinese trait with a "U" shape at the leaf petiole. The bottom leaf has a dull appearance (American trait) and it also has more defined teeth at the leaf margin, an-

other American trait. In the photo below, Tom examines leaves with a hand lens. The data are then recor-



ded on the laptop Tom has clutched in his arms. Leaf tissue was collected from some of these trees back in April. The tissue samples were sent to Hudson-Alpha in Huntsville, Alabama, where they

will determine the percentage of American vs Chinese in these trees. The process of determining the parentage of each tree is a lengthy process.



Stephen Rist harvesting chestnuts.



Tom Saielli trying his hand at using a pole pruner.



Gnarled canker on one of the trees.



Close-up of a cankered orchard tree.



Burs on a tree with Chinese traits.



Three viable nuts in a bur.



Nuts from the Clements nursery are being made ready for stratification. The nuts were soaked in a 10% clorox solution, allowed to dry and then added to plastic bags with a moist potting mixture as shown in the green bucket.



A view of the young orchard that was started in the late 1990s from seeds from the older orchard that was initiated in the late 1970s. There are a dozen rows of trees in the young orchard with about 40-50 trees per row. The trees exhibit a variety of symptoms of chestnut blight. Some trees died early after planting 20+ years ago. Some of the current trees have a lot of cankers--some appear to be lethal while others are swollen and superficial. There were several Chinese chestnuts in the young orchard that have been removed. As a result of chestnut blight, the trees run the range of looking quite healthy to those with numerous dead branches. A group of WV-TACF volunteers worked on cleaning up the young orchard several years ago, but this needs to be an annual work event. Now that the Clements nursery has closed, there are no staff members to mow, prune, rogue out dead trees and supply general maintenance to the orchard. This may be an on-going project for the WV chapter in years to come.



Tom Saielli removes leaves from a tree in the old orchard.



An American-like tree with a dead top in the old orchard.

The traits used by Tom to assess how "American" a tree:

1. Leaf shape (long and thin like a canoe)
2. Leaf thickness (thin)
3. Leaf shininess (dull)
4. Leaf dentation (ocean-wave)
5. Bud shape (pointed)
6. Bud color (red)
7. Bud hairiness (none)
8. Stipules (thin)
9. Twig color (red)
10. Twig hairiness (none)
11. Relative stem size (thin)
12. Lenticle size (small)

According to Tom's phenology, only one tree that we examined at the Clements nursery scored high, making it mostly American. One tree was obviously a Chinese chestnut (page 3, lower right photo), while the other trees we examined were somewhere on the American-Chinese continuum.

WV Fall Chapter Meeting

The fall WV chapter meeting was held both in-person at the Szilagyi Center in Rowlesburg and virtually via Zoom. The meeting opened at 11:30 am with **Mark Double** presiding. Minutes of the spring 2021 meeting, provided by secretary **Jeff Kochenderfer**, were approved. **Sam Muncy** provided the treasurer's report. As of 30 Sep 2021, the balance in the WV chapter account was \$72,967.32.

Rick Sypolt, chair of the membership committee, reported that we have 152 members in the WV chapter. Rick agreed to contact the national office to determine if any contact is made with those whose membership

has expired.

Mark Double reported on the events that transpired relative to the closure of the Clements tree nursery. As of June 30, the nursery was permanently closed and the Division of Forestry has removed all the equipment from the premise. A question was raised if the Division of Forestry might be willing to lease the land that is occupied by the two chestnut orchards. Mark Double will investigate.

Lewis Cook from Fayette County, raised a question relative to the Germplasm Conservation Orchards (GCOs, pure American trees) that were established at five locations in WV this spring. Survival as of September ranged from 37% to 90%. Lewis stated that we need to identify sites that will promote chestnut growth--well-drained areas on upland slopes where chestnut oak is present. Those are good indicators that American chestnut will thrive. Lewis and **Steve Swank** are working with the National Park Service at the New River Gorge National Park as a site for another GCO.

Jeff Kochenderfer reported that he has a GCO at Parsons with about 100 American chestnut trees. He indicated that there is adequate space for another 60-70 trees. Since Jeff works in Petersburg, the orchard does not receive as much attention as needed, relative to weed control. It was decided to set up a work day next spring for chapter members to help weed the orchard.

Sam Muncy reported on his 3-day visit to the Holy Cross Monastery in Wayne County. The Russian Orthodox monastery sits on 180 isolated acres and is home to more than 20 monks, including WV chapter mem-

ber, **Monk Joseph**. Sam reported that his trip was spent searching the surrounding area for American chestnut trees and taking in the beauty of the area.



Sam Muncy (left) and Monk Joseph

Sam also reported on the establishment of chestnut plantings at the Summit Bechtel Reserve (SBR) Boy Scout Camp in Fayette County (see photos on page 8). Since "ink disease" (*Phytophthora cinnamomi*) can devastate a chestnut orchard, Sam enlisted the help of **Dr. Jeff Skousan**, Professor of Soil Sciences at West Virginia University to take soil samples from six areas on the SBR. The soil samples were sent to **Dr. Steve Jeffers** at Clemson University who is an expert in isolating *Phytophthora* from soil. Dr. Jeffers isolated *Phytophthora cryptogea* from the samples. It is unknown how pathogenic that species is to chestnut, so Sam chose areas where *P. cryptogea* was not present. Sam installed two GCOs and one experimental orchard at the camp. The GCO sites will be at the wood lot and the fire ring while the experimental orchard will be near the Antoline Family Center. Sam has enlisted the help of **Boy Scout Troop 1885** to help plant 80 chestnut seedlings. The goal is to make this area a premier chestnut site

in WV. Sam indicated that there is a lot of potential for outreach within the Boy Scouts of America. Sam and fiancée Sharton Cottrill have designed patches for the scouts who help with chestnut planting. Below is an examples of one of the patches.



TACF-s Mid-Atlantic Regional Science Coordinator, **Tom Saielli**, detailed the metrics TACF uses for phenotypic selections of the best backcross trees. TACF has been breeding chestnuts since 1983 and the idea is to now cross the **Best times the Best**. The metrics they use to select the Best trees are: main stem alive; stress sprouts present; canopy health; sporulation of the chestnut blight fungus, if present; sunken or calloused cankers, if present; canker severity; tree height and tree diameter.

There was some discussion relative to a joint meeting of WV members with TACF members from Ohio and Virginia to share ideas, etc. Mark Double agreed to work with Tom Saielli to explore the possibility of a joint meetings in 2022. There also was some discussion about a crew-neck shirt with a WV-TACF logo. That idea will be explored, so stay tuned.

Officers for 2021 were elected. Dr. Don Kines, stepped down as Vice President and **Jerry Legg** (pictured

below) from Elkview (Kanawha County) was elected as the new Vice President.



Also, two new members were elected to the Board of Directors, **Linda Coyle** from Keyser and **Carla Kesling** from Clarksburg.



Linda Coyle (left) and Carla Kesling (right), our two new WV chapter Board members.

Rowlesburg Chestnut Festival

The Rowlesburg Chestnut Festival was held on a bright, sunny day on 10 October in the small Preston County town along the Cheat River. Vendors sold goods ranging from utensils made of chestnut wood to honey. Hot roasted chestnut along with chestnut seedlings were sold at the park across the street from the old Rowlesburg school, now referred to as the Szligagyi Center.

Pictured are two of the volunteers roasting chestnuts at the pavilion on the Cheat River in Rowlesburg. The roasting begins only after all the nuts are "scored" prior to roasting.



Robert Sypolt had chestnut trees for sale. He had both hybrid and Chinese chestnuts available for sale to the general public (pictured below).



The two speakers this year were **Dr. Heather Griscom** and **Tom Saielli**. Dr. Griscom is a Professor and Assistant Unit Head in the Department of Biology at James Madison University in Harrisonburg, VA. Dr. Griscom's talk was titled, "*Chestnut Introduction Efforts in Forested Ecosystems*". She reported on experiments where American chestnut along with tulip poplar and chestnut oak were planted at sites in both in Virginia and West Virginia. The trees were planted in: (1) small gaps; (2) large gaps; (3) upslope; and (4) mid-slope. A small gap is defined as an area about 50' in size while a large gap is an area about 100' in size. In the Virginia site, American chestnut grew best on midslopes but it was outcompeted by tulip poplar.

American chestnut survived best on the upslope areas. They encountered problems with rodents in the midslope areas. The experiment was repeated in West Virginia, but they used tree shelters to protect the trees from rodents and landscape cloth to mitigate weeds. In the WV experiment, American chestnut grew best in big gaps with landscape cloth. However, survival of American chestnut was best in small gaps (85%) with landscape cloth.



Dr. Griscom (picture above) has a current graduate student who is growing hybrid chestnut seedlings in containers in conjunction with air pruning (seedlings are grown above a screen and the roots grow laterally to help in drought conditions). Her conclusions are that American chestnut should be planted in small gaps, with landscape cloth and tree shelters. If possible, air pruning should be used. She will report on the air pruning data once the experiment is complete.

Tom Saielli reported virtually from his home in Charlottesville, VA on host response to blight infections. While TACF has been breeding susceptible American chestnuts with resistant Chinese chestnuts in an attempt to produce a tree with American

form and blight resistance, the resistance is not as good as was hoped when breeding began in 1983. The late **Dr. Charles Burhman** designed the backcross breeding program in the 1980s believing the goal of producing a resistant American chestnut was possible if only 2-3 genes controlled blight resistance. As it turns out with new molecular tools, there may be as many as 9 genes that control resistance. As a result, breeding chestnuts is much more complex than originally proposed. Rather than trees that were bred to be 94% American and 6% Chinese, the current trees are only 80-85% American in their traits. The goal is still a tree with American form and blight resistance, but we need trees with solid blight resistance. Those trees with intermediate resistance may not survive and therefore will be outcompeted in the forest. TACF is still striving for a canopy American chestnut tree.

In an effort to breed **Best X Best**, Tom developed a 0-4 rating system for trees, with 4 being excellent. A tree with a rating of 3 may have good resistance, but Tom is striving to find trees that have a 4 rating. Tom defines a tree with a 3 rating as trees with large, continuous cankers, chestnut blight is mostly contained with little-to-no sporulation on the canker. Tom feels that while trees with a 3 rating may look fine, they may not survive in the forest. The idea is to breed the Best X Best or 4s X 4s.

Mr. and Mrs. Chestnut for 2021, **Jeff and Erica Kochenderfer**, were crowned at the Szilagyi Center. Jeff and Erica were crowned by the 2020 Mr. and Mrs. Chestnut, **Rob Eckenrode and Amy Metheny**.

Jeff grew up in Parsons and is a 1993 graduate of Tucker County High School. He earned a B.S. in Forest Management from WVU in 1997 and a M.S. in Forest Biology from Virginia Tech in 1999. He worked as a service forester for the WV Division of Forestry in Braxton County and for four years for the U.S. Forest

Service for 19 years. Jeff is currently the north zone silviculturist on the Monongahela National Forest based in Petersburg, WV. Erica grew up in Kingwood and she is a 1993 graduate of Preston High School. Erica earned her teaching degree from Fairmont State University and a M.S. from Ohio State University. She has taught English for the past 21 years. Jeff and Erica have one daughter, Evelyn.



Jeff, Erica and Evelyn Kochenderfer are flanked by Rob Eckenrode and Amy Metheny.

The Rowlesburg Chestnut Festival has always held a gala banquet complete with roasted turkey, mashed potatoes, etc., but due to Covid-19 the banquet was replaced with soup and sandwiches that were served in an outdoor tent. The after-dinner speaker this year was **Mark Double**, who gave a presentation on "*Chestnut and Religion*". He spoke on the Rainelle United Methodist Church, reportedly the largest structure in the U.S. made entirely of American chestnut lumber, pictured below.



The Rainelle United Methodist Church sits on Route 60 in western Greenbrier County. The church was built by workers of the Meadow River Lumber Co and dedicated in 1914.

Chestnut Planting at the Summit Bechtel Reserve

by Sam Muncy

On Saturday, Oct 23, 2021, twenty-five volunteers including TACF members and members of **Oak Hill Boy Scout Troop 1885** and all-girl **Oak Hill Scout Troop 1776** met with the Fayette County Special Olympics committee and athletes to plant two Germplasm Conservation Orchards (GCO's) and one experimental orchard of American chestnuts at the Summit Bechtel Reserve Boy Scout camp at Glenn Jean, WV. TACF members and the Boy Scouts camped over the weekend and joined the other volunteers on Saturday to plant over 80 seedlings. The Summit is a national Boy Scout camp designed around teaching and demonstrating sustainability of our natural resources and to that end supports the efforts of TACF to introduce the American chestnut back into the Appalachian mountains. Every 4 years the Boy Scout National Jamboree is held at the Summit Bechtel Reserve. Annually in the spring and fall, TACF works at the Summit to plant new trees and care for existing trees at the several orchards now at the camp. Plans and resources are being developed at the Summit to create a conservation trail and conservation center. TACF has been requested to be a part of the conservation center with a teaching station and chestnut orchard for Summit visitors and campers. TACF members who participated were **Joe Golden, Eric and Andrea Croston, Bernie and Linda Coyle, Jerry Legg, Steve Swank, Lewis Cook, Sam Muncy and Sharon Cottrill**. It was a beautiful fall weekend for camping.



Scouts and volunteers planting at one of the SBR sites.



A finished planting complete with fencing and stakes.