THE BUR

Volume 23, No. 1 Newsletter of the New York State Chapter of The American Chestnut Foundation Spring 2017

In Memory of Arlene Wirsig

By Herbert Darling, Jr., President Emeritus of TACF and TACF-NY

In 1989, Stan and Arlene Wirsig called and introduced themselves to me. They had heard about me and my interest in American Chestnut trees, probably from Dr. Philip Rutter, President of TACF in those early days. I had just recently learned of TACF myself. Stan and Arlene convinced me to join efforts with them to set up a transgenic program to cure the blight problem.

As Stan, Arlene, and I discussed our mutual concern for the American Chestnut, we took a hard look at approaches to address the blight thus far. We were concerned that the backcross program would not be able to create a robust resistance to the blight due to the Chinese genes involved. Additionally, we wanted to preserve the timber attributes of the American Chestnut, tall and straight grained. On Wednesday, July 30, 1989 we met with Dr. Charles Maynard and Dr. William Powell from SUNY-ESF in Syracuse, NY. We all thought gene transfer was the way to go and I agreed to talk to TACF about a program.

At the time, TACF was invested in the backcross breeding program and was not interested in alternative approaches, including a gene transfer program. I suggested TACF consider state chapters with New York State as the first Chapter. They agreed and on Wednesday, December 13, 1989 TACF-NY was born with the first meeting held at the Buffalo Museum of Science. The museum allowed us to use their address and donated free space for us to use to get started. The primary focus of TACF-NY was to understand and support the gene transfer program in partnership with SUNY-ESF.

Stan, Arlene, and I considered ourselves the founders of TACF-NY. I was elected President, Stanley as Vice-President and Chief Scientist, and Arlene as Secretary/Treasurer. Arlene grabbed the reins and partnered with my wife Jane and Bethany White Ruane, thereby TACF-NY up and running immediately. We just made it happen! Stan took over as Science Director to work with SUNY-ESF getting on a program to get the job done.

It took 25 years and a lot of meetings and hard work to accomplish this.

Long Live the American Chestnut!

Herb Darling with Stan and Arlene Wirsig. Marshall Case in the background.

Arlene working hard despite a broken leg.
Photo from The Bur, Vol. 08(2): 1998

Donations in Arlene's name can be made at https://www.acf.org/store/donate/. Be sure to select the NY Chapter Biotechnology Designation. Checks made out to TACF-NY can be sent to Fran Nichols, Treasurer, 302 Bateman Road, Laurens, NY 13796.

Inside this issue:

The American Chestnut Foundation
New York State Chapter
302 Bateman Road
Laurens, NY 13796
http://www.acf.org/Chapters_ny.php

Founded in 1990, the New York State Chapter (TACF-NY) is the oldest chapter of The American Chestnut Foundation, Inc., a non-profit 501 (c) (3) membership organization. TACF-NY, in partnership with the State University of New York College of Environmental Science and Forestry, is working to restore the American chestnut tree to our eastern forests by developing truly blight-resistant American chestnut trees through biotechnology. Membership information may be found on the back page of *The Bur*.

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President's Message

I would like to extend my warmest regards to the families of Stan and Arlene Wirsig, two of the founding members of TACF-NY. Their hard work and insight are what got us to the milestone that we are at today. To Stan and Arlene, and many other members that are no longer with us, on behalf of the NY chapter of The American Chestnut Foundation, we say thank you for a job well done.

The State University of New York College of Environmental Science and Forestry (SUNY-ESF) just finished the Ten Thousand Chestnut Challenge to finance the creation of the first restoration forest. The goal of $125,000 was surpassed, with a total of over $131,000 raised. I would like to thank everyone who donated, but a special thank you goes to Dale Travis, District 2 director, who kicked off the fund raiser with a $5,000 matching challenge. Additionally, a very special thank you goes to Andrew Gundlach and the Anna-Maria and Stephen Kellen Foundation for their generous donation.

The SUNY-ESF American Chestnut Research and Restoration Project continues its pioneering work on its successful development of the world's first transgenic American chestnut trees with proven blight resistance. Dr. William Powell continues to direct this effort, involving undergraduate and graduate students, other scientists and support of TACF-NY. (Please read the updates on page 7.) Mark your calendar and plan to attend our next annual chapter meeting on Saturday, October 21st, in Syracuse, NY. You will have the opportunity to visit the American Chestnut Research and Restoration facilities at the SUNY-ESF campus, see how the work is being done, and talk to Dr. Powell and his staff.

As you read through this issue of the BUR, I hope you are as impressed as I am with the great pictures, history and new developments. **The Restorationist**, an article by John Dougherty, our TACF-NY Science Director, resonates with the feelings of why we are so dedicated to this historic project.

I would be remiss if I didn't mention that the 2016 fall meeting was a great success with nearly double the attendees as last year. We were privileged to have Lisa Thomson, President and CEO of TACF, attend our meeting and we had several members from other states attend.

With SUNY-ESF poised to submit for non-regulated status with the USDA and registration with the EPA of their blight resistant tree and with hundreds of our members planting "mother" tree orchards, we can feel confident that we are quickly approaching our final goal. Stan and Arlene would be proud!

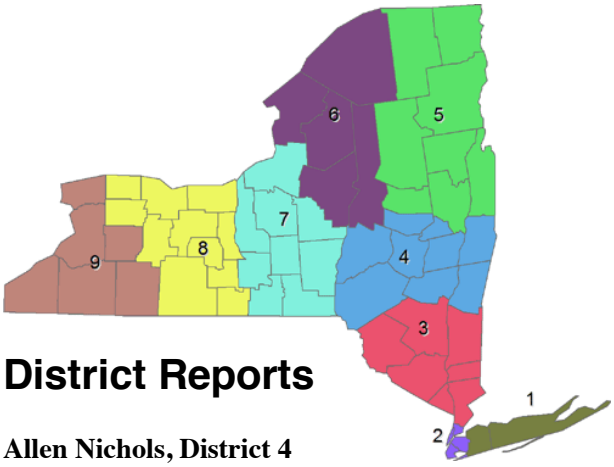
Allen Nichols
President, TACF-NY

Xena and Our Chestnut Seedlings

By Jeannine Kazacos, TACF-NY member

In 2015, my husband Stacey and I moved to Mount Vision, NY. Ever so interested in learning about plants and trees in our region, we quickly became familiar with the plight of the American Chestnut. We joined the American Chestnut Foundation and visited Allen Nichols, President, TACF-NY to learn more. It is during this visit that we got our first chestnut seeds. Allen explained to us that these would not be blight resistant however would provide a good source of American Chestnut mother seeds.

The next Spring, we set out to plant about a dozen chestnut seeds. At about the same time, we learned that our son and daughter-in-law were assigned to the U.S. Army base in Seoul, South Korea and would not be able to take their pet hedgehog Xena with them. African pygmy hedgehogs are nocturnal and prefer temperatures of about 75 degrees but Xena now enjoys Upstate NY winters as long as our wood stove matches her warm natural habitat. In the summer she loves to walk around the garden and hide under plants. In August, I happened to be checking on our chestnut seedlings and Xena was having fun exploring around. We now have a chestnut seedling growing in a pot inside our house. We keep it in the same room as Xena as they both like it warm.



District Reports

Allen Nichols, District 4

I collected approximately 1,000 nuts from my orchard this past fall while another orchard of 70 trees on my mothers property just started to flower last year. I have given numerous presentations, one to the Greene County Cornell Cooperative Extension, one at Holland Patent, and one to the Continuing Adult Learning SUNY-Oneonta. I also found one nice 11" tree the day before Christmas. So far this spring, I have sent out over 2,500 nuts or seedlings to over 200 members. Our chapter's total harvest last fall was over 15,000 nuts so I have plenty to distribute. If anyone wants nuts to plant but has not contacted me please do so. fajknichols.75@Gmail.com or 607-263-5105

Roy Hopke, District 7

This fall, Jim Donowick, Jay Hager, and I gathered more than 800 nuts at the Sherburne Plantation. I am not sure how many more Jim collected later but it probably equaled the 800 initially collected. We have roughly 40 bearing trees at Sherburne. The plantation has proven to be a valuable teaching resource. Last fall, I gave a presentation to approximately 20 DEC foresters at the plantation regarding our plans for the recovery of the chestnut. In February, I gave a presentation at the plantation to SUNY Morrisville students concerning the chestnut, invasive species, and possible solutions to the problems.

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District 2 – Dale L. Travis, dale@daletravis.com
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District 8 – Paul Ackerman, trapnman1@netzero.net
District 9 – William A. Snyder, wasnyderhort@gmail.com

From The Reporter: One Hundred Years Ago

How valuable were chestnuts in 1917? According to Walton's local paper, chestnuts were worth $0.07 to $0.10 per pound. Many people do not realize how valuable the chestnuts were here in NY.

A hand book of the William B. Ogden Free Library has been prepared under the direction of the Board of Trustees. Copies will be distributed free to anyone applying at the library. The pamphlet covers the history of the library from its incorporation 1894 and makes a booklet of twenty-six pages.

Buyers of potatoes are paying $1.10 a bushel for potatoes in large lots delivered at the car for shipment. At retail potatoes sell higher and are scarce. During the past two weeks large quantities of chestnuts have been shipped from Delaware county. Merchants have paid from 7 to 10 cents a pound. One Hamden man shipped 1,800 pounds one day recently.

The world's series will be eclipsed. The Fats and Slims are to play a series of ten indoor ball games. Everything has been arranged and the grand debut will be made next Tuesday evening in the armory. William Bruce and Pleman Hafele will captain the opposing forces. If the heavyweights are losers Bruce will lay the blame on Ivan L. Crouse his first baseman. Crouse is six feet seven inches tall and weighs 340 pounds, and Captian Bruce guarantees nothing will get past him. The losing side in the series must give the winners a banquet.

Article curtesy of "The Reporter", Walton, NY
http://www.the-reporter.net/news/2016-11-02/Looking_Back_/Looking_Back.html

American Chestnut Fence, Built Over One Hundred Years Ago

By John Wertis, President of the New York Nut Growers Association

Locally quarried stone posts (right photo) mark the perimeter of our 90 acre farm near Trumansburg, NY. They were put in place over time from the mid-1800's to 1900.

A gatepost near our driveway (below) is marked "1862" and (more difficult to read) "W.S. Bates", the owner at that time. To attach wire to the fence posts, each stone was drilled in two places and a chestnut 2x4 was then bolted on to provide a place for stapling barbed and woven wire fencing.

A section of the chestnut fence post was planed, finished, and made into a vase holder designed to be hung on a wall (not shown). Metal brackets were done by a local blacksmith. It was presented to Malcolm Olsen, New York Nut Grower Association member, experimental nut tree grower, and master grafter in appreciation for his several years of service to the organization as a grafting instructor for over a five year period of time.

Great News: TACF 3BUR Strategy Approved, Our Transgenic Trees Now Part of National Plan

by John Neumann, TACF-NY Secretary

Lisa Thomson, President and CEO of TACF, was a special guest at our chapter's 2016 annual meeting last October 26th. After being introduced by our Chapter President Allen Nichols, Lisa expressed how excited she was to meet with us. She acknowledged the pioneering work TACF-NY has accomplished in partnership with SUNY-ESF these past 26 years in producing the world's first transgenic blight-resistant American chestnut trees.

Lisa explained that in 1983 (when TACF was founded) Dr. Charles Burnham's proposed backcross breeding program was the only viable means for getting blight-resistance into the American chestnut. She explained that while much progress has been made with the backcross breeding program, TACF desires to maximize pathways available today to benefit American chestnut restoration, and to that end, an ad-hoc committee was established. Lisa further reported that this committee was chaired by our own Dr. William Powell, and that the committee proposed three major research tracks that might integrate their efforts to benefit American chestnut restoration. The result is **3BUR** (**B**reeding, **B**io-control, and **B**iotechnology **U**nited for **R**estoration).

Bill Powell outlined the three expected outcomes of 3BUR: Increased communication and trust between research partners; Increased collaboration in research, membership, funding, and shared goals; Focusing on specific questions and creation of a road map for working together. Bill explained that the purpose of this proposal is *not* to replace any on-going programs, but instead to augment them through collaborations that are mutually beneficial to reaching common goals.

Since our chapter meeting, the 3BUR report was reviewed and approved by TACF Science Oversight Committee and then reviewed and approved by the Board of Directors of TACF. This is a great time for our chapter and SUNY-ESF. While in the past our transgenic efforts have been supported by some individuals outside of New York State, including individual members of the Board of Directors of TACF, for the first time biotechnology is integrated into official TACF research and restoration policy.

You may read the approved 3BUR report at http://www.acf.org/3BUR.php

Big Tree Winner of 2016

Congratulations to Dave Pringle, the winner of 2016's $200 reward with a healthy American chestnut tree that was 20.7" DBH. Out of 26 submissions, nine were pure American chestnut. One of these trees, submitted by Bob Osterhout, was 17" DBH and qualified him for a $50 reward. Vincent Bedient has a tree with a 21" DBH that had been previously submitted but it now has the blight. There are many large trees out there that we would like to locate. We want to know the location of any flowering trees, regardless of size, so we can pollinate them with blight resistant pollen as soon as we get permission to do so. Thanks to everyone that submitted trees in 2016 and good luck locating trees in 2017.

Reward

$200 For largest
American Chestnut Tree
Found in New York State, in 2017

The largest healthy tree not previously recorded by TACF-NY, "The American Chestnut Foundation of New York", will be rewarded.

The tree must be found in New York State and the property owner must allow TACF-NY access for pollination and/or seed collection. Tree must also be identified by TACF-NY as pure American Chestnut.

What to look for: Open burs lying on the ground near the tree. The burs will be light brown with long sharp spines and measure about 3 inches across. The leaves are slender; 6 to 9 inches long with pinpointed teeth that have a fishhook profile. They are similar to a beach leaf, except longer and more pointed on each end.

For further information or identification of a tree contact President and District 4 director, Allen Nichols at 607-263-5105 or by e-mail, fajknichols.75@gmail.com

The Restorationist

By John Dougherty, TACF-NY Science Director

I am 70. I am no longer young; not yet ancient. I stand on the ridgeline of my family's American history. I am the pivot point of a 400-year family history—four generations back; hopefully four generations forward. Which thread of family lore from past generations should I preserve and pass on? And, save for the dates on my tombstone, what will future generations know about me? How can I leave a legacy that connects my ancestors who arrived in America in 1830 with our descendants two hundred years hence?

I am of yeoman roots on the German side and of urban roots on the Irish side. I am Restorationist with dirt under my nails. I plant trees, but not just any trees. I plant trees like those that once towered on the family farm in Lancaster County Pennsylvania–like the hulking, stately trees with massive branches that grew in Philadelphia Parks. I plant the Mighty Giant of the East—the American Chestnut.

I will plant them among my family roots in the Keystone state. I will plant them as far north as Maine. I will plant them in the hills of Mississippi. They will be almost identical to the trees my Irish great, great grandfather saw when he disembarked in Philadelphia or what my Swiss- German great, great grandfather homesteaded among in Lancaster County. But unlike the American chestnut trees that my grandfather or father planted…my tree will live. My American chestnut tree will not die from the Asian chestnut blight.

Why will it live? It will live because my scientific friends have added one new gene, a gene taken from wheat, to 36,000 ancient genes of the pure American chestnut. Two hundred years from now, my great, great, grandchildren will walk under a two-hundred-year-old American chestnut tree—my blight-resistant tree—and its majesty will rival the trees my immigrant ancestors walked beneath.

I am a Restorationist with a capital R. Because of the advances of plant science and plant disease knowledge, I have a chance to do what the last two generations failed to do—restore the American chestnut tree to its native ecology. Imagine planting a chestnut tree on a street named Chestnut Street that has not been shaded by a chestnut tree for 100 years! Imagine hiking the ridgeline of the Appalachian Trail, watching deer, turkey, and migrating birds forage once again on their nutritious nuts.

Like my early ancestors, I am an American pioneer. When I plant a resistant American chestnut tree, I create the possibility of restoring all the interrelated flora and fauna that depended on this keystone tree species. I restore the possibilities of all the chestnut wood-based industries that thrived 100 years ago. To the east coast, I restore the best carbon sequestering tree species to a warming planet. I restore a tree that thrived on steep slopes and shaded the upland streams and rivers that flow to the Chesapeake and Delaware Bay. Tree by tree, we will restore the ecology of the east.

There is much to be done to advance the science and the public knowledge that will make living legacy a reality for our children, our grandchildren, and our great grandchildren. Please help support science and plant a blight resistant American chestnut tree.

Mark Your Calendar!

The annual TACF-NY chapter meeting is scheduled for October 21, 2017 in Syracuse, NY. (Details to Follow in the Fall Issue of *The Bur*)

Looking for Assistant District Directors and Other Volunteers

Our chapter is organized into nine districts that cover the entire state of New York. This is where most of our members volunteer. It is easier to get involved in planting, caring for, and promoting the American chestnut when the activity is nearby rather than driving clear across the state. Each district has a director but they each could use the help of an assistant or two, as well as other volunteers. If you would like to help out, contact your District Director (see page 3) or contact our chapter president, Allen Nichols email: fajknichols.75@gmail.com or phone: 607-263-5105 Thank you.

Articles Wanted

If you have an article you'd like to contribute to The Bur Newsletter, please send it to lpolin@esf.edu or mail it to: Linda McGuigan, 1 Forestry Drive, 217 Marshall Hall, Syracuse, NY 13210

The American Chestnut Research and Restoration Program at SUNY-ESF

Allison Oakes is currently a postdoctoral research associate and lab manager of the off campus Plant Production Laboratory at the Biotechnology Accelerator in Syracuse, NY. She maintains the production of micropropagated American chestnut shoots of over one hundred and twenty transgenic event lines, twenty four wild-type lines, and six hybrid lines, along with Chinese and European chestnuts. She is also investigating the effect of different growth regulator concentrations on shoot development, and is continuing her dissertation research focus on improving rooting and acclimatization of American chestnut shoots. In addition, she has initiated, multiplied, and rooted Ozark chinqapin (*Castanea pumila*), a related North American species which is also killed by *Cryphonectria parasitica*. Allison has experiments underway to generate Dutch Elm disease-resistant elms using genes found during the search for disease resistance in chestnut.

For the past school term, **Dakota Matthews** has finished quantifying oxalate oxidase in our transgenic American chestnut tissues as well as wheat products. He has also recently been awarded a Zabel grant to continue his research with oxalate oxidase in transgenic tissues and

natural sources. These funds will go toward purchasing transmission electron microscope equipment that will be used to locate oxalate oxidase in various tissues on the cellular level. This equipment will also facilitate a more precise quantification of oxalate oxidase. This research will help our project move forward through the federal regulatory approval process, allowing resistant American chestnut trees to get to the public sooner.

Linda McGuigan is working with undergrad Hannah Pilkey, to transform Ozark chinquapin. They are using the same Oxalate Oxadase gene that was used in American chestnut to transform two lines of the Ozark chinquapin. In addition, Linda is transferring the planting maps to an online database. Having this information online will ease the mapping process.

For the past year, **Tyler Desmarias** has been hard at work pursuing his goal of improving plant health and survival at all phases of the American chestnut clonal production cycle. He has focused on improving the quality of tissue culture plantlets with emphasis on three aspects of the process: the effects of growing chestnuts under different spectrums of LED lighting; a double-elongation "finishing" phase to improve shoot size and quality; and finally, determining the best *ex-vitro* substrate to use for rooting shoots.

In addition to tissue culture optimization, Tyler has continued to make greenhouse and field improvements. In the greenhouse, he has enhanced the supplemental lighting and fertilization regiment. He has also implemented a thorough pest management program. Furthermore, with Tyler's assistance, we have acquired and renovated a new greenhouse as well as designed a shade-house for field acclimatization purposes. He continues to educate the public with presentations on our American chestnut project, guest lectures in the Plant Tissue Culture course taught at SUNY-ESF, and works on field production projects such as our Tully Seed Production Orchard, Diversity Plot Orchard, and BRAG Research Plot.

THE BUR
The American Chestnut Foundation
New York State Chapter
C/O Fran Nichols
302 Bateman Road, Laurens, NY 13796

Cut here ✂

Become a member of The New York State Chapter of The American Chestnut Foundation at
http://acf.donorshops.com/products/joinnow.php
or fill out the following Membership Application and return to:

The American Chestnut Foundation Inc.
50 North Merrimon Avenue, Suite 115, Asheville, NC 28804

Enclosed please find my $40 membership in support of TACF-NY. I would like to make an additional $_____ gift to the New York State Chapter. Total amount enclosed: $_____

All memberships to TACF include TACF publications, a car decal, membership to one of the state chapters as well as opportunities to participate in local chestnut activities. Visit www.acf.org or call (828) 281-0047 for more information.

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NY Chapter membership includes the Newsletter *The Bur*. The NY Chapter helps guide research at SUNY-ESF and maintains plantings to keep the American Chestnut gene pool. TACF & TACF- NY Chapter are 501 (c) (3) non-profit organizations. Except for the membership services portion of your contribution (valued at $15) your gift is tax deductible to the full extent allowed by law.