

THE
Journal
OF THE AMERICAN CHESTNUT FOUNDATION

MAY/JUNE 2012 | ISSUE 3 VOL. 26



Chestnuts and Light
The Rise and Fall of Champion Chestnut Extract
2012 American Chestnut Summit

Help TACF Meet the Challenges of 2012



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FOUNDATION®

This year, your gift to TACF is more important than ever.

And this year you can direct your gift into a specific area that you feel is important.

Do you have a favorite goal that you want to help TACF achieve? Just indicate on your response envelope that you want your gift to go toward that program.



1 Expanding our Science

“The new Price Lab at Meadowview Research Farms will allow us to utilize techniques of modern biology to more quickly and accurately identify superior chestnut genotypes. Our research will also help us answer fundamental questions about how the blight fungus attacks and kills chestnuts, as well as offering us a window into how blight resistance functions. Exploring the molecular genetics of the blight fungus and integrating it with similar data on the host can help us to identify the specific genes for resistance, which would represent a huge step forward in our understanding. **Our needs this year include \$107,000 to fund ongoing research.**” – **Dr. Fred Hebard**

Dr. Fred Hebard is TACF’s chief scientist and is responsible for the breeding and science programs carried out at Meadowview Research Farms.



2 Testing and Evaluation of Advanced Trees

“Progeny testing at Meadowview and in forest environments throughout the original range is vital because it helps us to continually improve the blight resistance of our advanced trees. It is also critical to developing our understanding of how resistance is inherited by new generations, and the importance of adaptation to regional climates. **This year our progeny testing and evaluation projects will require \$80,000 for labor and materials.**” – **Dr. John Scrivani**

Dr. John Scrivani is the President of TACF’s Virginia Chapter.



3 Supporting Meadowview Farms

“Meadowview is the heart and soul of TACF’s breeding program. Under the guidance of Dr. Fred Hebard, Meadowview provides the largest single source of chestnut breeding information, and they ensure that regional efforts are backed by the best available science and good management. Meadowview is also the source of pollen and seeds that fuel the “Mother Tree” and “Father Tree” programs that our regional breeding orchards depend on. **This year we need to raise \$158,000 to provide seasonal labor, plant chestnuts and inoculate existing trees at Meadowview.**” – **Dr. Jimmy Maddox**

TACF volunteer Dr. Jimmy Maddox works for a few weeks every year in the Father Tree program at Meadowview Research Farm.



4 Funding Development of Ink Disease-Resistant Trees

“Ink disease is virtually 100% fatal to pure American chestnuts and its presence is severely restricting our restoration efforts in the southern 2/3rds of the tree’s range. Moreover, global warming could expand the disease’s range northward. The good news is that our traditional breeding program has already given us a head start in fighting ink disease by allowing us to select from a backcross population that already contains trace amounts of resistance. The challenge is that this effort requires large quantities of manpower, materials and many, many advanced backcross seeds. **Fighting ink disease this year will require raising \$48,000 for advanced seeds, labor, supplies, and materials.**” – **Dr. Joe James**

Dr. Joe James is on the front lines of the fight against ink disease in American chestnuts

Three easy ways to donate:

- Fill out and mail the reply envelope (see pg. 5)
- Donate online at: www.acf.org
- Call us at (828) 281-0047

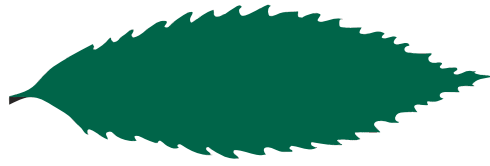


Once Again This Year, Your Gift Will Go Further

Long-time TACF supporters Brad and Shelli Stanback have generously offered again this year to match your contribution to our Spring Appeal. Every dollar you give today will go further and work harder!

Help us meet the challenges of 2012.
Step up to the Stanback Challenge!

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THE
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The Mission of The American Chestnut Foundation

Restore the American chestnut tree to our eastern woodlands to benefit our environment, our wildlife, and our society.

We harvested our first potentially blight-resistant nuts in 2005, and the Foundation is beginning reforestation trials with potentially blight-resistant American-type trees. The return of the American chestnut to its former range in the Appalachian hardwood forest ecosystem is a major restoration project that requires a multi-faceted effort involving 6,000 members and volunteers, research, sustained funding, and most important, a sense of the past and a hope for the future.



About Our Cover Image

Our cover image this issue is by TACF member Vicky Somma. Vicky's beautiful image was the winner of our 2011 photo contest. Vicky offers the following caption:

Two Appalachian Mountain Staples

Two Appalachian mountain staples, Rhododendron (*Rhododendron catawbiense*) and the American chestnut (*Castanea dentata*), grow in the Poverty Creek Recreation Area near Blacksburg, Virginia. Although in harmony here, the dense rhododendron thickets that are present in today's forests may present a challenge as the American chestnut makes its return.

Correction: The March/April cover image included a bird that was correctly identified as an Eastern Towhee, but was given the incorrect Latin name *Pipilo chlorurus*. The correct Latin name is *Pipilo erythrophthalmus*.

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Background photo:
A mild winter and warm spring have brought early flowering to
the chestnuts in Jim Hurst's orchard in Weaverville, NC



Judy Sutton and Judy Coker help to plant a seed orchard near Chimney Rock, North Carolina. In addition to volunteering frequently, “the Judies” as they are known, maintain a high-elevation breeding orchard at Cataloochee Guest Ranch in Maggie Valley, NC.

Get involved!

By Glen Rea, TACF Chairman of the Board, and Bryan Burhans, TACF President and CEO

Spring and early summer are busy times for TACF volunteers. Tree planting, orchard maintenance, and chestnut pollinations are in full swing. During the summer, our volunteers mow and maintain over 300 breeding orchards from Maine to Georgia. Come fall, our volunteers are back out in force collecting the year’s seeds in preparation for the following planting season.

As you can imagine, TACF often has far more work to do than we have volunteers to do it. Every non-profit organization struggles to find the help it needs to further its work, and TACF is no different. However, becoming involved with TACF is easy, and no green thumb is required. If you are reading this and you have not volunteered with us recently, we can personally attest that there is no better way to make friends among your fellow TACF members, to get a better understanding of our great goal of restoration, and to just plain have a good time! Here are several ways you can become involved:

- Volunteer to work in a breeding orchard** – whether you volunteer for one day, or for several days during the year, our state chapters can use your help. Getting hands-on experience tending an orchard is one of the most satisfying and rewarding activities we know of. And there is often a breeding orchard near you that needs your help!
- Attend a state board meeting** – for volunteers whose talents lean toward organizational skills, our state chapters always need new members to participate in board meetings and, hopefully, to serve on a board. Helping out at the state board of directors level is important and puts you at the heart of the decision-making process.
- Host a Restoration Branch event in your community** – our Restoration Branches have opened up many new doors for the organization not previously available. A TACF Restoration Branch is a local group of individuals who come together at least once a year to host an annual event. These events, usually a dinner, provide TACF the opportunity to build support for our state chapters at the local community level. Organizing an annual event is easy and fun to do, and allows the Restoration Branch to develop chestnut activities in its local area. Activities include recruiting volunteers to support a local orchard, helping to fund and place our TACF Learning Box in local schools, and getting involved in local tree planting projects.

No matter your skills, TACF has a place for you. And we need you. To find out how you can help, contact your local Regional Science Coordinator, listed on page one of this magazine. Or feel free to call our national office at 828.281.0047, or email us at chestnut@acf.org. Getting active in TACF is easy, fun and one of the most rewarding things you’ll do this year.



Brad and Shelli Stanback Receive Outstanding Philanthropists in Conservation Award

Long-term TACF supporters, Brad and Shelli Stanback of Canton, NC, were recently presented the 2012 Outstanding Philanthropist in Conservation Award by Wild South's Roosevelt-Ashe Society. The awards recognize and honor outstanding conservation work in 2011 to protect wild places in the South. The nominees represented six states and exemplify dedication and passion for environmental conservation. The winners were announced and awards presented at the 4th Annual Green Oscars on March 23, 2012, in Asheville, NC.

"Conservation groups know that we cannot realize our vision with staff and volunteers alone," said Tracy Davids, Wild South's Executive Director. "Success requires the support of each citizen who believes in the power of a South with healthy, intact ecosystems." Wild South is a non-profit organization whose mission is to inspire people to enjoy, value, and protect the wild character and natural legacy of the South.

TACF extends our deep thanks to Brad and Shelli for their continued dedication to restoring the American chestnut.

Brad and Shelli Stanback are recognized at a gala dinner at the Carter Center in Atlanta, GA, in February, 2012

First CIG Planting Underway

by Michael French, TACF Forester

On April 27, approximately 45 volunteers, including high school students and representatives from several organizations and agencies, braved a frigid wind to plant, shelter, and record the locations of 625 Restoration Chestnuts 1.0 in Schuylkill County, Pennsylvania. This is the first of 12 mine reclamation plantings funded through a national Conservation Innovation Grant (CIG), awarded to TACF by USDA National Resources Conservation Service (NRCS). NRCS Chief, Dave White is enthusiastic about the project: "As partners with The American Chestnut Foundation, we can develop more and better conservation tools that can expand our conservation portfolio to benefit farmers, ranchers and private forest landowners."

The Appalachian Regional Reforestation Initiative (ARRI) and TACF worked with the mine operator Michael Coal Company, Schuylkill Headwaters Association, Northern Swatara Creek Watershed Association, Schuylkill County Municipal Authority, and PA Department of Environmental Protection to apply the Forestry Reclamation Approach (FRA), a method which breaks up the site's heavily compacted soil so that trees can grow successfully. A central 1-acre plot was planted with 550 Restoration Chestnuts 1.0, while the surrounding 21 acres were planted with a mix of high-value hardwoods and Restoration Chestnuts 1.0. Joe Pizarchik, Director of the Office of Surface Mining Reclamation and Enforcement; Marcilynn Burke, Acting Assistant Secretary for Land and Minerals Management; and Denise Coleman, PA State Conservationist, were among the numerous officials who helped get these CIG plantings off to a good start.



Students Cole Rumpf and Jeff Rumpf work with Northern Swatara Creek Watershed Association volunteer Jack Wolff on the first CIG planting in Schuylkill County, PA.



Tom Baloga, vice president of engineering for BMW North America, plants a tree to honor the victims of Flight 93. Tom was a colleague and friend of BMW employee Linda Gronlund, who was aboard the ill-fated Flight 93.

Restoration Chestnuts 1.0 Planted as Part of Flight 93 National Memorial Reforestation Project

by Mark Banker,
Director of
Development

The first phase of the reforestation project at the Flight 93 National Memorial is now complete. On April 20, 21, 27, and 28, more than 10,000 trees were planted in Stonycreek Township,

Pennsylvania, where United Airlines Flight 93 crashed into a field killing 40 passengers and crew members on September 11, 2001. Because 70 percent of the site was once a surface coal mine, the vision for the park builds upon large-scale reclamation undertaken by mining companies and will include reforestation, pond rehabilitation, and planting of thousands of wildflowers and natural grasses.

The National Park Service and the Appalachian Regional Reforestation Initiative (ARRI) did an outstanding job of organizing hundreds of volunteers into a well-oiled planting machine. There were 160 volunteers on the first day alone, including some friends and family members of the victims of Flight 93.

PA TACF headed up a crew of ten volunteers and donated 75 Restoration Chestnuts 1.0 for the site. Students from Indiana University of Pennsylvania will monitor the seedlings as they grow. Next year TACF will provide an additional 160 Restoration Chestnuts 1.0 for the memorial.

BMW and GenOn Energy were the major sponsors of this year's plantings, but many other partners helped plan and support the project. This multi-year reforestation project will eventually include 150,000 trees planted on more than 200 acres. We tip our hats to everyone who participated in the planting for a job well done.

New TACF Orchard Signs

TACF announces the availability of two new types of informational signs for chestnut orchards, plantings and educational displays.



The first sign is a series of three panels. Each full-color panel is printed on vinyl-coated aluminum similar to that used for road signs. Each panel is 34" high by 22" wide. The first panel tells the story of the American chestnut, and the second tells of the blight and has a space for 100 words of custom text about the planting. The third panel relates the history of TACF and its work to restore the American chestnut. The signs can be mounted on posts or in frames made of lumber with or without a roof structure. The three-panel set is priced at \$340 plus shipping.



The second sign is a single panel orchard sign that features colorful images and tells the story of the American chestnut and TACF in just a few lines of text. It is 36" wide and 24" high. Like the three-panel sign, it is produced on heavy-gauge aluminum and is meant to be mounted to posts or in a frame with or without a roof structure. The final lines of text and bottom images are customizable and can be project-specific. This sign is priced at \$140 plus shipping.

Delivery time on both types of signs is about 30 days. For more information go to www.acf.org/orchardsigns.php. To order, call TACF Director of Communications, Paul Franklin at (828) 281-0047 or email pfranklin@acf.org.

Warm Spring at Meadowview Keeps Staff Busy

by Jeff Donahue, Director of Operations
at Meadowview

Like other regions in the eastern US, spring arrived early this year in southwestern Virginia. At Meadowview Research Farms, staff had five major planting projects at hand for the busy season:

- A progeny test comprised of approximately 3,000 Restoration Chestnut 1.0 seeds was planted on the Wagner Farm.
- Staff continued work in the Legacy Tree Orchard with the planting of 3,000 B3F2 seeds. These will become the parent trees for Restoration Chestnuts 1.0.
- One thousand F1 progeny (American chestnut x Chinese chestnut) were planted to provide test material for a project that rates the pathogenicity of different strains of the chestnut blight fungus. F1 hybrid progeny are useful for this task because within-family variation in blight resistance is considered low. This type and level of uniformity facilitates the separation of pathogenicity classes based on canker sizes.
- As part of the ongoing effort to conserve naturally occurring genes for blight resistance in American chestnut, 500 progeny of large surviving Americans (LSAs) were planted on the Price Farm. In addition to serving as a conservation bank, these plantings facilitate pyramiding of resistance genes.
- Also, 500 backcrosses from new sources of resistance were planted as part of the long-term effort to diversify our sources of blight resistance.

By the end of April, staff planted roughly 8,000 new seeds at the Meadowview Research Farms. The next project at hand is herbicide spraying and mowing, which should keep the team busy through May.



Legacy Tree Orchard additions at the Duncan Research Farm. Robert Scarborough and Louise Cottrell.

In Memory of and In Honor of our TACF Members March-April 2012

In Memory of

Essie Burnworth

*Victoria Jaycox
Carolyn Hill
Kathy and Rob Marmet
Erin Sobotta*

Wallace Bedell

Meredith Gunter

Allen Montgomery

Robert Brunning

James W. Lorenzini

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Greg and Susan Glass
Neelam Henderson
George Martel
Lynn Moore
Don and Margaret Phillips*

In Honor of

Dr. Elizabeth T. Kennan

Northeast Utilities Service Company



Rufin Van Bossuyt and Director of MA Fish and Wildlife, Wayne MacCallum, plant Restoration Chestnuts 1.0 at the MA Fish and Wildlife headquarters in Westborough, MA. Van Bossuyt, whose surname means “from the forest” in Flemish, spends much of his free time working to restore the American chestnut.

Photo by Allan Jung/Courtesy metrowestdailynews.com

TACF Honors Its Volunteers

Member Profile: Rufin Van Bossuyt

By Daniel Hale, TACF Intern

In 2012 Rufin Van Bossuyt will mark his 21st year as a member of TACF. He’s played a pivotal role as a founder and board member of the MA/RI Chapter, and on the TACF Board of Directors, and he helped plant Massachusetts’ first orchard at the Tower Hill Botanic Garden.

Rufin has had a lifelong interest in trees. He grew up as one of six kids on a farm in northern New Jersey. In grade school his nickname was “Bambi” because he spent so much time in the

woods. Rufin first learned about the American chestnut at summer camp in 1948. He enrolled in the forestry program at Rutgers University in 1956, where he wrote a paper about chestnut blight and Dutch elm disease. After college and service in the army, Rufin worked as a forester for the Massachusetts Electric Company until early retirement in 1993. He and his wife have a summer house on Cape Cod, and enjoy travelling to warm places in the winter.

“I’ve always been impressed with Rufin’s quiet, unassuming, sound and practical advice on all issues that our chapter addressed,” said Susan Cormier, a past president of the MA/RI Chapter.

“Rufin is a true gentleman and wonderful to work with,” added Yvonne Federowicz, MA/RI Chapter President. “You can see the work of his hands in many of our chapter orchards and demonstration plots.”

Volunteer Profile: Tracey Coulter

Contributed by Dave Armstrong and Sara Fitzsimmons

The first time Tracey Coulter ate a chestnut was in Switzerland, where she attended high school. But she was not aware of the American variety until her father, L.L. “Bud” Coulter (president of TACF from 1994 to 1998), introduced her to them years later. Occasionally, Tracey would meet up with Bud when he traveled to chestnut meetings. In an interview with Bethany Baxter at the TACF 2008 Annual Meeting, Tracey said, “Just hearing what a tremendous loss this tree represented really got me excited about the possibility of restoration.” And Tracey hasn’t lost that enthusiasm.

Tracey returned to school in 1999 to pursue her undergraduate and master degrees in forestry at the Pennsylvania State University. In 2003 she interned with Sara Fitzsimmons, TACF Regional Science Coordinator, and now works as a forest program specialist and watershed coordinator for the Pennsylvania Department of Conservation and Natural Resources (PA-DCNR) helping to strengthen the relationships among sustainable agriculture, sustainable forestry, and healthy watersheds.

Since 1993, Tracey has been involved with TACF in many different capacities. She was active in piloting the Appalachian Trail MEGA-Transect project in Pennsylvania. She served as treasurer of PA-TACF for four years and currently aids the PA Chapter Board as the DCNR liaison. She also serves on TACF’s science cabinet. Most recently she helped solidify a Penn Nursery agreement with PA-TACF to grow Restoration Chestnuts 1.0 and establish seed orchards for reforestation efforts on state lands.

“Tracey has been a lifelong, outstanding volunteer for the American chestnut recovery program,” said Dave Armstrong, PA-TACF Board member. “She spreads ‘chestnutting’ wherever she goes,” added Sara Fitzsimmons.



Tracey Coulter with a flowering chinkapin at the Big Flats Plant Material Center in Corning, New York.

Photo Credit: PA-DCNR

Chestnuts and Light

Early Flowering In Chestnut Species Induced Under High-Intensity, High-Dose Light In Growth Chambers

by Kathleen Baier, Dr. Chuck Maynard
and Dr. William Powell

Chestnut trees grown under field conditions typically take several years before they begin to flower. Under optimal conditions some trees form catkins containing pollen as early as their second or third year, with female flowers a year or two later. In native stands of chestnut, one quickly notices that direct sunlight is an important factor in flowering because the catkins typically form only on the sunlight-exposed branches. Could high light levels in a controlled setting help induce flowering earlier than seen under field conditions?

We made a serendipitous discovery while growing chestnut trees in a plant growth chamber. Fifteen transgenic American chestnut trees (event 'Hinchee 1') were grown under high light conditions to speed up growth, which did occur. We also observed that six of the fourteen surviving trees (~43%) formed catkins between nine and eleven months after being placed in the growth chamber. Pollen was collected and tested for germination, found to be viable, and stored for future crosses. From these observations, we hypothesized that continuous high-intensity light (700 to 900 microEinsteins per second per square meter [microE] at the tops of the plants) for 16 hours per day, paired with optimal growth conditions would reduce the time to flower in chestnut.

We also observed that six of the fourteen surviving trees (~43%) formed catkins between nine and eleven months after being placed in the growth chamber.



Kathleen Baier opens the door of the growth chamber showing the intensity of the light.

Flowering in non-transgenic seedlings was subsequently studied. Six Chinese chestnuts (variety 'Qing') and six American chestnuts (Zoar seed source) were grown into seedlings under the same conditions as the 'Hinchee 1' transgenic plantlets. Based on their performance in field trials, we knew that the Zoar trees have a very strong apical dominance, which typically results in delayed flowering, making this a particularly strong test. Catkins developed on four (~67%) of the Chinese chestnut trees and one (17%) of the American chestnut trees within six months of planting. One (~17%) of the Chinese chestnuts also formed female flowers within six months of planting.

The exact cause of this early flowering is yet to be determined. One environmental factor that can have a substantial influence is the amount of sunlight the tree, or even an individual branch receives. In one study of large orchard-grown chestnut trees, the north-facing side received less than 20% of the light that was measured on the south side. This resulted in differences



Example of old catkins, burs, and newly forming catkins on Qing Chinese chestnut (two photos). Four out of six trees that flowered early in this study were Qing Chestnut

in leaf morphology and reduced photosynthetic efficiency, as well as reduced nut size (Gomes-Laranjo et al., 2008).

It has been reported that the light saturation point for photosynthesis in American chestnut is approximately 600 microE (Joesting, 2005). In theory, “full sun” is 1700 to 2000 microE, however this level is observed for only a few hours per day under a cloudless sky on the longest days of the year. It is more relevant to talk about the total “dose” of light that plants growing outside will receive over time. In addition to cloud cover reducing the amount of light received by the canopy during the day, the low sun angle during the hours near sunrise and sunset also reduces the total dose of light received. In contrast, our growth chamber light intensity was approximately 100% of the maximum for 16 hours per day. We can assume, therefore, that the chestnut trees were fully light saturated for virtually the entire “day” for the duration of the study, unlike the varying levels of light during the typical outdoor day cycle or seasonal cycle. The trees were also not allowed to go into winter dormancy. Lastly, there were two types of bulbs used in this growth chamber. The metal halide bulbs emit light on the *blue* side of the spectrum, which encourages vegetative growth. The high-pressure sodium bulbs emit light on the *red* side of the spectrum, which is ideal for fruiting and flowering (Marousky



Example of two Hinchee 1 transgenic events of American chestnut plants with catkins representing the six out of fourteen (43%) that flowered.

and Blondon, 1995; Thomas, 1993). This bulb combination may have contributed to the result of vigorous growth and early maturation. Even though further research needs to be done to determine the exact cause, this method works and could be used to produce pollen (and possibly female flowers) much earlier than traditional methods.



Example of American chestnut (Zoar) seedling forming catkins

These results have significance for both the transgenic and backcross breeding programs as a way to “non-genetically” speed up the generation cycle. In a separate Forest Health Initiative project, we are also studying the use of flowering genes from poplar trees to induce early and heat shock-inducible flowering in American chestnut, with the interesting preliminary result that these genes can induce catkin formation even in tissue culture. But this transgenic method has the drawback of having to breed out the early-flowering gene before moving the trees to the field. This high-light method is physiologically driven, therefore it avoids the additional breeding step to remove a gene. The downside of this high-light method is the specialized equipment needed to provide the enhanced lighting conditions. But for high-value genotypes, this can greatly shorten the time needed for pollen production and in some cases female flower production. Therefore this can be another important tool to help in the restoration of the American chestnut.

Methods

Trees, potting, and growth conditions:

Fourteen transgenic American chestnut (*C. dentata*), ‘Hinchee 1’ event, derived from acclimatized tissue culture plantlets, were potted in six-inch RootMaker® pots (Stuewe & Sons, Inc., 31933 Rolland Drive, Tangent, Oregon 97389 USA) with the bottom half filled with SunGro 560 coarse mix and the top half with a 50:50 mix of SunGro 560 coarse mix and Fafard Superfine Germinating Mix.


Nuts of six Chinese chestnut (*Castanea mollissima*), variety ‘Qing’, and six American chestnut (*C. dentata*) from Zoar timber-type seedlot, were potted under similar conditions.

All plants were watered as needed, using tap water containing 300mg/L Miracid ProSelect water-soluble acid-loving plant food (30-10-10).

Light and growth chamber conditions:

The GRC-40 growth chambers (BioChambers, Inc.,

Winnipeg, Manitoba) were programmed for 23°C temperature, 60% relative humidity, 70% fan speed, 16-hour days, full light. The light levels were 335 microEinsteins (micromoles of photons per meter squared per second) at pot height, 700 μ E at the lowest catkins (~77cm), 890 μ E at the highest catkins (87 cm) and 910 μ E at 1 meter. The lamps used were Sylvania 400W High Pressure Sodium (LU400/PLUS/ECO) and 400W Metal Halide (MS400/HOR).

To help the plants acclimatize to the high light levels when first moved into the chamber, they were shaded with a single layer of Garden Quilt shade cloth for one month. 

Kathleen Baier is a technician in Dr. Powell's research lab.

Dr. Maynard and Dr. Powell are the co-directors of the New York State American Chestnut Research and Restoration Program at the SUNY College of Environmental Science & Forestry, Syracuse, NY.

References:

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2012 American Chestnut Summit

OCTOBER 19-21, 2012

PRESENTED BY

THE AMERICAN CHESTNUT FOUNDATION®

AND THE

U.S. FOREST SERVICE

Beautiful Asheville, North Carolina, is the setting for the 2012 American Chestnut Summit, sponsored by The American Chestnut Foundation and the U.S. Forest Service. The event will feature an inspiring array of presentations, workshops and hands-on experiences.

Powerhouse Presentations

Chestnut Restoration, Chestnut Biotechnology, Genetic Research, Phytophthora, Hypovirulence, Chestnuts and Wildlife, Chestnuts in History and Culture, and more...

Hands-On Workshops

Cooking with Chestnuts, Chestnut Identification, Planting Chestnuts, Identifying and Treating Chestnut Pests

Fascinating Field Tour

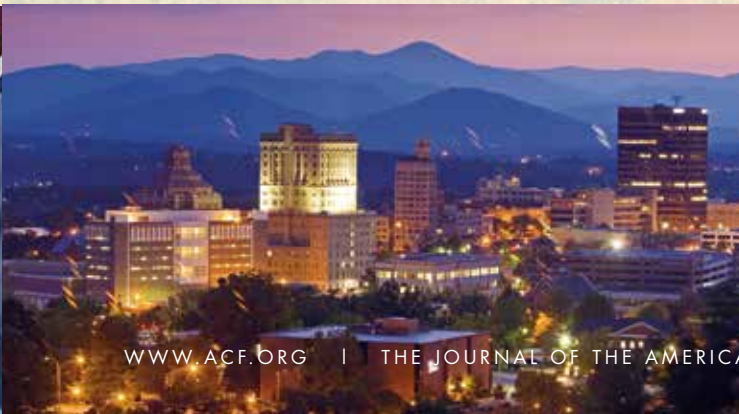
U.S. Forest Service's Bent Creek Experimental Forest — Western North Carolina's Renowned Research Forest

Great Asheville Activities for Guests & Families

Biltmore House Tours, Art Galleries, Gourmet Dining, Thrilling Zip Lines, Hiking, Fly Fishing, Rafting and the Hilarious LaZoom Bus Tour!

The American Chestnut Summit is presented in partnership with:

Southern Group of State Foresters, National Resources Conservation Service, Georgia Pacific, North East Area State Foresters, North Carolina Forest Service, Southern Research Station, Carolina Chapter of TACF®





Join Us This Fall at the Beautiful Crowne Plaza Resort in Exciting Asheville, NC

Friday Evening

Welcome Dinner

Saturday Opening Session

Dr. Patrick McMillan: What is a “Native Species”

Dr. Kim Steiner - The State of Chestnut Restoration

Saturday Afternoon

Concurrent Sessions

Track 1: Chestnut Genetics and Diseases

Track 2: Culture and History of Chestnuts

Track 3: Chestnut Ecology and Silvics

Saturday Evening

Gala Chestnut Dinner/Entertainment/Auction

Gourmet Chestnut Cooking Demonstration

Dr. Hill Craddock to present “Chestnut Culture in Italy and Around the World”

Sunday Morning

Critical Needs Workshop: Planning for the Future

Practical Skills Workshops: Chestnut Identification,

Growing and Caring for

Chestnuts, Chestnut Pests

Bent Creek Research Forest Tour (Box Lunch Provided)

American Chestnut Summit Registration Fees: *(Lodging Not Included)*

Full Registration \$99 per person

Includes:

- Saturday Opening Session
- Saturday Track Workshops/Presentations
- Sunday Workshops/Demonstrations
- Bent Creek Research Forest Tour
- Breakfast, Lunch and Snacks for both days

Day Passes *(Does Not Include Lunch or Dinners)*

- Saturday - \$40 – Opening Session and Workshops (Includes Breakfast, Snacks)
- Sunday - \$25 – Workshops/Demonstrations (Includes Breakfast, Snacks)

Students - \$15 (Each Day with Student ID)

Includes:

- All Workshops
- Breakfast, Snacks

Tickets can be purchased separately for the following:

- Friday Evening Welcome Dinner: \$35 each
- Saturday Evening Dinner and Program: \$50 single \$75 couple
- Bent Creek Research Forest Tour (Box Lunch Provided): \$15 each (Space is Limited – Must Pre-register)

Summit Highlights

Choose From Four Great Program Tracks

Chestnut Genetics and Breeding Track

Welcome to the world of chestnut science! Workshops on chestnut genetics and breeding will explore the history of backcross breeding and look at recent advances in genetic and traditional breeding techniques. Other workshops will highlight the blight fungus, examine the viruses that cause hypovirulence, and present the current research on ink disease. The workshops will be followed by a panel discussion with the presenters.

Culture and History of Chestnuts Track

American chestnuts have a rich and detailed history in North America. Our speakers will address the environmental history of the American chestnut over the past 20,000 years and discuss how American chestnut trees and products were intricately woven into the culture of the Southern Appalachians. The workshops will be followed by a panel discussion with the presenters.

Chestnut Ecology and Silvics Track

Curious about what's happening with chestnut restoration? This is your track! Speaker topics include an update on U.S. Forest Service test plantings, utilizing chestnuts to restore damaged mine lands, the historical role and future benefits for wildlife in chestnut reforestation, as well as examining how chestnuts will adapt to climate changes.

Practical Skills Track

Newcomers with a passion for learning about locating, growing, and tending chestnuts will enjoy these hands-on sessions of chestnut identification, identifying and treating common chestnut pests, and a do-it-yourself session on planting chestnuts. Attendees will have an opportunity to learn from chestnut experts.

Look for a Full Summit Schedule in the Next Issue of the Journal

Accommodations

Reserve rooms now by calling Crowne Plaza Resort at 888-233-9527 or visit <https://resweb.passkey.com/go/ACF2012OCT>.

Rooms start at \$139.00 per night. To receive these special room rates, let them know that you are attending the American Chestnut Summit. If you are a Federal employee please contact The American Chestnut Foundation at 828-281-0047 for reservations.



The Rise and Fall of Champion Chestnut Extract



Chestnut cordwood awaits processing at the Champion Chestnut Extract plant in Canton, NC, circa 1920.

In 1905, Peter G. Thompson arrived in Asheville, NC, to visit his son, who was attending boarding school in the area. He had not come to build a commercial empire or to dramatically improve the economy of the then-impooverished heartland of Appalachia, but within a decade he had done both of these things and more.

A successful industrialist, Thompson owned a thriving paper mill in Ohio. Like all paper mills, his mill required a constant supply of high-quality pulp. Thompson knew that the very best pulp came from spruce trees. As he toured Western North Carolina, he learned that the forests contained an abundant supply of spruce. But the woods also contained vast numbers of another prominent tree - American chestnut. In his travels Thompson likely had learned of the small chestnut extract plants located around Western North Carolina that produced tanning products for the leather industry. He also would have learned the tannins were extracted from chestnut wood that had been cut into fine chips, in a process similar to making pulp from spruce trees. Thompson had an epiphany. What if you chipped chestnut, extracted all the tannins, and then used those same chips as pulp for the paper industry? The idea of creating two profitable products from one raw material was too much for the savvy businessman to resist.

In 1908, Thompson began construction on a combination chestnut extract and pulp facility on the banks of the

Pigeon River in Canton, NC. He purchased the rights to a patent for a special method of chipping chestnut which allowed for the tannins to be almost completely removed, leaving clean, white chips that were almost as good as spruce for the manufacture of pulp.

The Champion Chestnut Extract facility in Canton grew to be the largest tannin extract plant in the world. The numbers are staggering. At its peak, the plant consumed thirty railroad carloads of chestnut logs every day. The logs were chipped, then loaded into one of the plant's 32 autoclaves. The chips were heated under vacuum and then the resulting liquid was transferred to additional autoclaves where, utilizing a process similar to making instant coffee, the volume was reduced in stages. The final product, which was either a thick and potent liquid or a powder, was loaded in tank cars, barrels or bags, and packaged and shipped to markets around the world. In 43 years of operation Champion produced over 2.5 *billion* pounds of extract.

Several times over the years, the plant produced photographic reports on their operations. What follows are pages from three of these reports: the first in the early boom years of the 1920s, the second from the peak business year of 1937, and the last from the company magazine in 1951, showing the final day of extract production before the plant closed forever - another victim of chestnut blight.



**Primitive
Transportation
in the Woods.**

Oxen hauling logs through places difficult of access, on the timber lands of the Champion Fibre Company.

No Danger of Blight

The conservation of the wood in this area is a matter of prime importance to the future supply of chestnut wood extract. The blight, which destroyed so many of the chestnut trees in the eastern parts of the country, fortunately never reached this area, and there is no immediate prospect of its doing so. The area, however, is not immune from the ravages of forest fires, but in the timberlands operated by the Champion Fibre Company, and other large lumber companies operating this section, the underbush is always cleared as the first precaution to be taken against fires, and this permits of the development of a second growth, which becomes available for cutting in about twenty-five years.

Two pages from the 1920 edition of Champion's annual brochure show the challenges of harvesting chestnut in the early days and highlight a feeling of optimism, in spite of the specter of blight on the horizon.



Within a radius of one hundred miles from the Champion mills the chestnut trees are cut into logs, barked and split, to be trucked to railroads for shipment to the mills.



Two hundred and seventy-five cords of chestnut from timberlands or woodyard reserve are carried along this ramp into the extract plant each twenty-four hour working day.

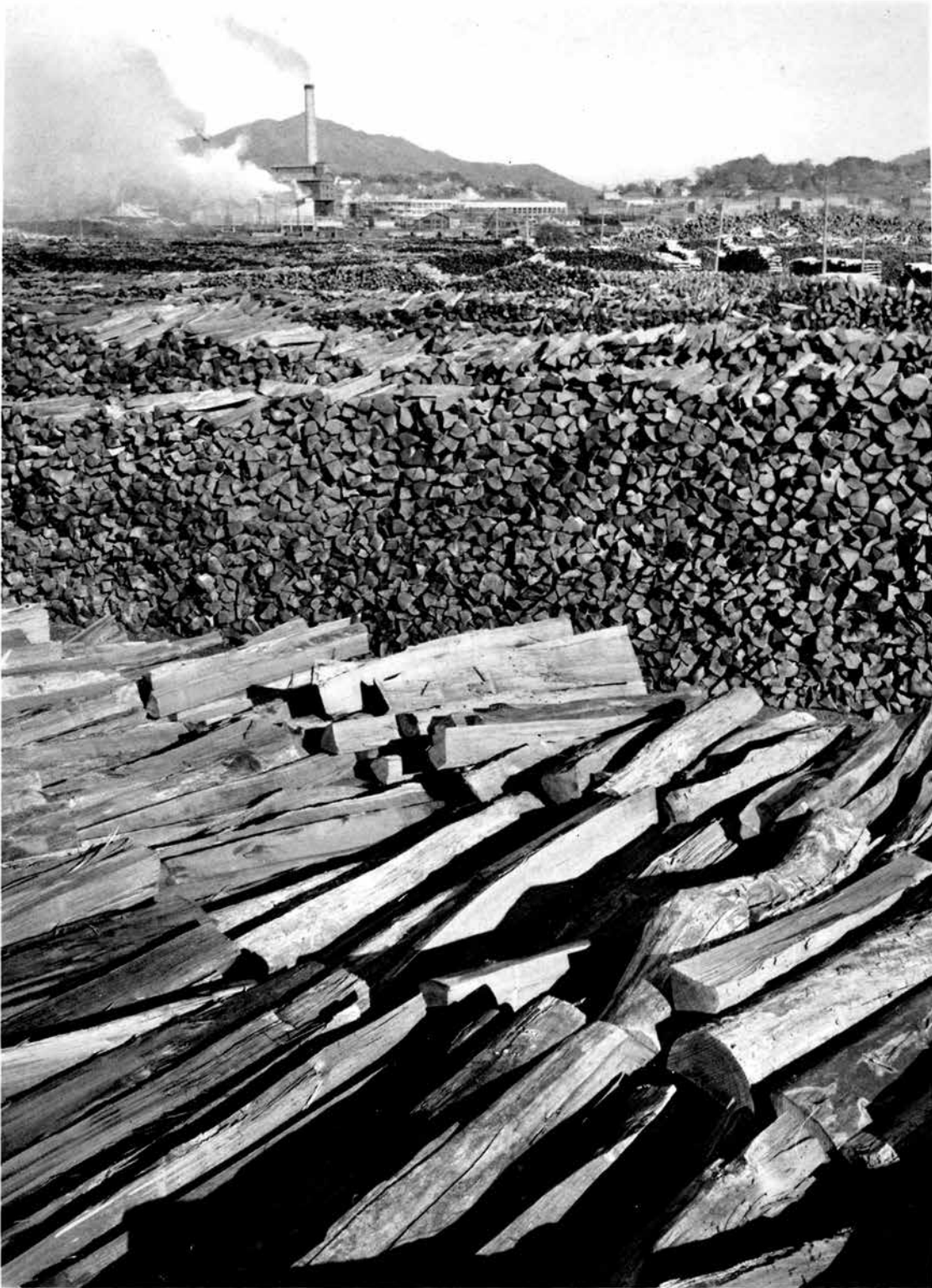


A gate opens and a deluge of chips falls from bins above. Nearly five-hundred cubic feet fill each autoclave with a fresh loading approximately every forty minutes.



In clean, leak-proof, labeled barrels, sealed against evaporation, large quantities of Champion chestnut extract are shipped to tanners in domestic and foreign markets.

These four pages from Champion's 1937 brochure show steps in the manufacturing process: harvesting the chestnut, transporting it, rendering it into extract and packing the extract for world markets. On an average day the plant would convert 30 train carloads of chestnut logs into 250 barrels of chestnut extract.



Piled high in the seventy-acre woodyard at the Champion mills, are fifteen thousand cords of reserve chestnut, two months' supply, a protection against delays in production.



Vast stacks of chestnut wood awaited processing into extract and pulp. Although the 1937 caption refers to 15,000 cords of wood, at its peak the plant stored over 60,000 cords in its yards. Much of this chestnut wood came from the 300,000 acres of woodlands they controlled. At full production the plant used 8,000 cords or over a million cubic feet of chestnut wood per month.



LAST PRODUCTION report (right) is made out by W. V. "Vent" Haynes, assistant superintendent of Extract Department, on the morning of June 11, 1951.



LAST BARRELS of chestnut extract produced at Canton (left) are being rolled into box car by Buster Wood, son of Old Timer S. C. Wood. Jim Medford, Champion Old Timer, stands in storage room doorway.

Chestnut Extract

... a Champion Milestone

LAST TANK CAR of liquid extract is loaded (right). Jim Medford, Canton Old Timer, handles the hose atop car.

Canton ends extract production, revising hardwood pulp system



THE CLOSING CHAPTER was written June 11 in the epic story of one of the most colorful phases of the 43-year operation of Champion's Canton Division.

The Extract Department, which has played an important role not only in the development of Champion but also in the progress of the nation and the world for almost half a century, was closed down for the first time since the combination of Western North Carolina men and Western North Carolina chestnut wood began supplying the world with a high grade of chestnut extract in 1908.

The end of the story has been written not by choice, but through necessity. More than a decade ago a blight

attacked and killed the chestnut trees. Since then Champion's Extract unit has continued to utilize the dead trunks that stood throughout the mountains like so many monuments to the past glory of the chestnut.

Now the supply is so nearly depleted and so difficult to reach that to continue the Extract processes is neither possible nor consistent with Champion's policy of sound operations for the security of all concerned.

This development had been foreseen for some time. As a result, the Canton Division already has under way a multi-million dollar project, involving extensive revisions in the hardwood pulp system.

This page from a 1951 edition of *The Log*, Champion's in-house magazine, recounts the melancholy events of June 11th, 1951, when the plant produced its last run of chestnut extract. The chestnut blight had rendered silent this once dynamic production plant.



Albie Snedaker is the proud owner of the quilt made by the P.B. Smith Elementary School's Fifth Grade Ecology Club
Photo by Chrissy Snedaker

A Quilt for the American Chestnut

Fifth Grade Ecology Club Quilt Project Yields Generous Donation to American Chestnut Restoration

by Kathy Marmet

A recent mail delivery to the Virginia Chapter of TACF contained a delightful surprise in the form of a \$100 donation from P.B. Smith Elementary School's Fifth Grade Ecology Club. The accompanying letter from Barbara Dennee, teacher and club advisor, explained that the club had created a beautiful hand printed quilt as part of its celebration of the International Year of the Forest.

Mrs. Dennee, a member of the Old Rag Master Naturalist Chapter, learned about the American chestnut from a presentation to that group by fellow Master Naturalist and Virginia Chapter Board Chair Cathy Mayes. She then shared the story with her students. "What shocked them," said Mrs. Dennee, "was the tragedy of this magnificent tree. They couldn't believe that nearly all the American chestnut trees died from a deadly blight within just 50 years." When students learned about the work of TACF, they wanted to help support the vision to restore the American chestnut to its native habitat in the eastern forests of the U.S.

P.B. Smith Elementary School is in Warrenton, VA. The approximately forty members of its Fifth Grade Ecology Club meet twice a month year round to participate in activities that teach the importance of taking care of the earth.

To make the quilt, the students worked together in pairs to make a painted handprint tree. Members of the Warrenton Quilting Guild helped bring the prints together to form a quilt. The quilt blocks are made up of multiple windows looking out into a forest of trees. Once completed, the quilt was put on display in the school's lobby along with information about The American Chestnut Foundation.

"During the project," said Mrs. Dennee, "teachers, students and parents learned that there were about four billion American chestnut trees living in the eastern forests before the deadly blight came to our country. However, thanks to the hard work of The American Chestnut Foundation there is a future for this 'King of the Forest.'"

The quilt was raffled off to raise money for TACF. The proud new owner is Albie Snedaker, a student at P.B. Smith and an enthusiastic member of the Ecology Club. Albie, who has now graduated to middle school, is described by his former teacher as "a dedicated steward of the Earth." His mother, Chrissy Snedaker, says: "This quilt has touched many people in so many different ways. How amazing!"

P.B. Smith's Ecology Club's Mission Statement:

P.B. Smith's Ecology Club works hard to be actively involved with nature in order to:

- help protect and preserve wildlife
- improve the natural environment
- teach others what we have learned
- provide a service to our community



Chestnut Chocolate Chip Cookies (gluten-free)

Certified chef and food writer, Valentina Kenney Wein spends her weekends in her “kitchen retreat” creating delicious, hearty, comforting food to nourish her family and share with her readers. You can follow her blog at <http://cookingontheweekends.com>.

Ingredients

6 tablespoons unsalted butter, softened
 1/4 cup granulated sugar
 1/2 cup golden brown sugar
 1-1/2 teaspoons vanilla extract
 1/2 teaspoon sea salt
 3/4 teaspoon ground cinnamon
 1 egg
 1 cup chestnut flour*
 3/4 teaspoon baking soda
 1-1/4 cups semi-sweet chocolate chips
 About 3 whole roasted and peeled chestnuts

Directions

Preheat the oven to 350°F and line baking sheets with parchment paper. Set aside.

In a medium-sized mixing bowl, cream the butter with the sugars, vanilla, salt and cinnamon. Add the egg and mix on low for one minute.

Sift the chestnut flour into the batter with the baking soda. Mix just until the flour is fully incorporated.

Fold in the chocolate chips and use a 1-inch ice-cream scoop to shape your cookies, placing them on the parchment-lined baking sheets about two inches apart.

Slice the roasted chestnuts thinly and put a half of a slice on top of each ball of cookie dough. (Only add this step if you plan to eat the cookies the day you bake them -- the texture of the nut isn't as good the next day.)

Bake in the preheated oven until the cookies are golden brown, about 9 minutes.

Let them sit for a minute on the baking sheet, and then carefully use a flat-bottomed, metal spatula to move them to a cooling rack. Serve at room temperature.

Makes 3-1/2 dozen

***Chestnut flour** has a shelf life of about one month. Store it in an airtight container in a cool place. You can buy chestnut flour at specialty stores or online (www.nuts.com).



Chestnut Moments

The Chestnut stands unnoticed in the forest until midsummer when, all at once, after the other trees have blossomed and some of them fruited, after the elm has scattered her samaras, the red maple dropped her keys, when cherries are ripe and apples half grown, the Chestnut flings out her creamy tinted catkins in a wealth of bloom and proclaims that she, too, belongs to the fruit-bearing race and though late she is not belated. Though she blooms in midsummer, her nuts are ripe in autumn, and the first frost opens the prickly burs and scatter (sic) the shining contents at the feet of any passer-by.

From *Our Native Trees*
by Harriet Keeler


Image: Chestnut Catkin,
Meadowview Research
Farms, Meadowview, VA


Join the thousands of individuals who play a part
in helping to care for your National Forests everyday.
If you're one of the millions who love to camp, hike, ski, hunt,
fish, or paddle, we invite you to stay informed and get involved.



These forests belong to each of us. With use comes a responsibility
to care for your National Forests. How will you exercise that
responsibility? As a *Friend of the Forest*[®], we'll show you how.
Become a *Friend of the Forest*[®] at www.nationalforests.org.

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