

THE



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Newsletter of the New York State Chapter of the American Chestnut Foundation, Inc.

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Spring 2004

PRESIDENT'S MESSAGE

With the possibility of the first Bio-tech American chestnut pollen and Bio-tech tissue culture treelets in the very near future from CESF, Syracuse, it will be necessary to provide secure homes for them to grow in. This is necessary to fulfill the USDA permits to raise them. The first secure area to be worked on was Heiberg Forest at Tully, NY, (this permitted area belonging to CESF, Syracuse); a work party of twenty volunteers installed the fencing on Saturday, July 12.

While driving to Heiberg, I noticed large areas of defoliated trees, very near Heiberg, some areas as big as one half-mile long, one-quarter mile wide. This observation reinforces the necessity of having a minimum of four test plantations across-the state to alleviate the risk of disaster at one site.

Lasdon Arboretum in District 3, under Frank Munzer and Craig Hibben would be the number two secure area. Number three would be under Roy Hopke, District 7 Director, and number four would be Zoar Valley under Bill Snyder, District 9 Director. The possibility of getting a plantation in District 1, under District Director Larry Lampel, needs to be looked into as well as the cold area District 6, under T. Urling Walker, to completely cover New York State. Other plantations may be necessary in the future. The USDA permits for these test areas will have to be obtained by CESF, Syracuse.

We have all waited a long time for the opportunity to be able to grow these seedlings mature enough so we can find out how much resistance they will have. Lets hope we will know soon, so plans can be made to start mass producing resistant American chestnut seedlings for reforestation.

LONG LIVE THE AMERICAN CHESTNUT!

Herbert F. Darling, Jr., President

SCIENCE REPORT

PROGRESS IN THE CESF BIOTECHNOLOGY LABS, 2004

By Chuck Maynard, Bill Powell and Danny Fernando

It helps to have funds! Carrying out a vigorous plant molecular biology and tissue culture program is expensive. After several very lean years, we are once again building our way back to a full-scale research program. With a \$50,000 grant from ArborGen, a \$15,000 grant from the Monsanto Fund and a \$70,000 grant from the TACFNY, the American Chestnut Research and Restoration Project is back to nearly full swing. To all of you who contributed to the campaign, we thank you very much for both your support and for the confidence you have shown in our research.

With the renewed funding, and several new people on the project, this has been a very busy year. After a great deal of effort and dozens of experiments stretching back over more than a decade, we can now routinely transform American chestnut cells in tissue culture. The next milestone in the path to a blight-resistant American chestnut tree is regeneration of a whole plant from these transgenic cells. This summer we have a team of one full-time and six part-time researchers focusing on this critical step.

It helps to have the right equipment! The new microscope, purchased with matching funds from the TACFNY and the SUNY College of Environmental Science and Forestry (CESF), has been a tremendous help in identifying transformed cells very early in their development. Since its purchase a year ago, we have logged over 400 hours of use, identified more than 250 transformation events, and taken more than 500 high resolution digital pictures of the chestnut transformation process. This instrument is truly a major enhancement of our research capabilities, and once again, we have TACFNY to thank.

As part of our efforts to enhance transformation efficiency and regenerate whole chestnut plants, we have also entered into collaboration with John Dougherty and Joyce Fry, to be supported by the Monsanto Fund. Joyce is a consultant with extensive experience in transformation and regeneration of highly difficult crop species like rice and wheat. John and Joyce visited the CESF campus in April. After meeting our research team and seeing the labs, Joyce provided some key suggestions for handling chestnut embryos

Science Report (Continued from Pg 1)

and a series of tissue culture media changes that may enhance the embryo-forming capacity of our cell lines. John applied his project management expertise and helped us set up a series of milestones on the way to a field planting of transgenic chestnut trees.

Over the years we have produced several blight resistance gene constructs to test in American chestnut. We are starting with one of our latest constructs that produces a wheat oxalate oxidase (OxO) enzyme. This enzyme can detoxify the oxalic acid produced by the blight fungus. In this gene construct, the OxO gene is regulated by a soybean promoter, which will help limit its expression to stem and wound tissues. This construct also contains a herbicide resistance gene and a green fluorescent protein (GFP) gene to help select and identify the transformed chestnuts. We will be using this construct in both the tissue culture transformations and the pollen transformation experiments.

For the pollen transformation work, we have developed a simple technique to collect pollen grains from male catkins of American chestnut, which is ideal for studies requiring in vitro culture or germination. This technique involves cutting the ripe catkins into segments and rolling them over a culture plate with pollination medium. The technique results in evenly dispersed, large amounts of pollen with minimal unwanted accessory floral parts. We also have determined the optimum storage conditions to obtain consistent high pollen viability. We found that storage of catkins at 4°C for 2-

3 weeks significantly increased the percent of germination compared to freshly collected pollen. For long-term storage, we keep American chestnut catkins at 4°C for a few weeks and then transfer to a freezer. An optimized protocol to transform American chestnut pollen through biolistics has been established and this includes a bombardment pressure of 1100 psi and a target distance of 11cm. Bombarding ungerminated pollen, compared to bombarding germinated pollen, resulted in greater amounts of transformed pollen. Statistical analysis showed that bombardment of ungerminated pollen at 1100 psi at 11 cm target distance resulted in 4.1% transient GFP expression. The work this summer (2004) will be to isolate transformed pollen and use them to pollinate female flowers.

It helps to have friends! On Saturday, June 12th, a team of 20 TACFNY volunteers helped us build a fence around our 1991 chestnut planting at Heiberg Forest near Tully, NY. After much hard work, (but only one Band-Aid), and great food, arranged by Stan and Arlene Wirsig, the fence was completed. Once again, we couldn't have done it without the TACFNY volunteers. We will be using the fenced trees this summer for field-testing our transformed pollen and the rest of the fenced area in future years for field-testing our transgenic chestnut trees for blight resistance.

With all of the activity in the field and the lab, we expect to have exciting things to report at the annual meeting, so, see you in October.

WHO TO CONTACT! DISTRICT DIRECTORS AND THE COUNTIES THEY SERVE

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Cattaraugus and Chautauqua Counties

**THE HO KOHONGUS COUNCIL TREE,
AN EXTRAORDINARY AMERICAN CHESTNUT TREE**

Excerpts from an article that appeared in the Westchester County Historical Society's "Quarterly Bulletin"

Like a giant sentinel it stood, the last of its kind. For two hundred years before Columbus set sail, it had weathered storms that swept across the Tappan Zee of the Mauritius River and when Hudson sailed up this matchless stream, which now bears his name, the tree witnessed the event and its lofty branches waved a salute. Nearby stood the Indian village of Ho Kohongus.

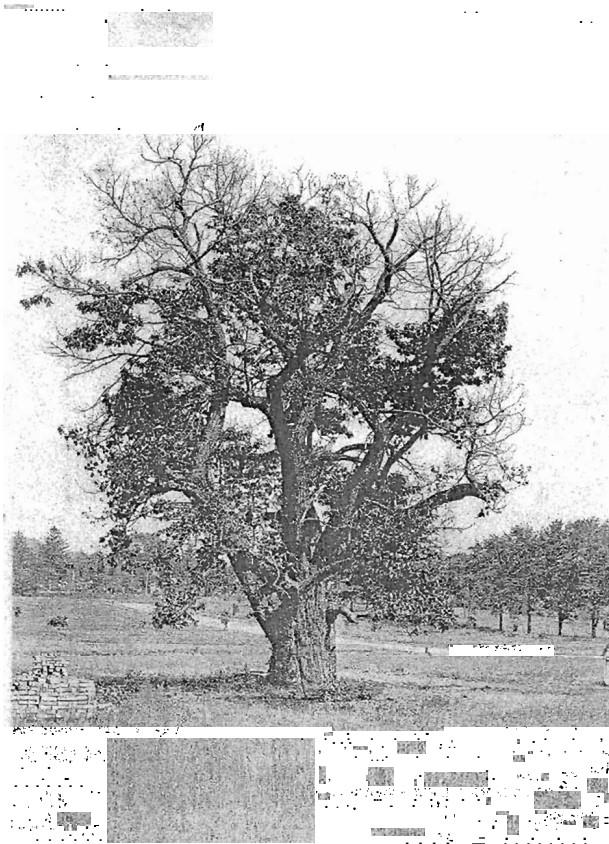
It had seen the powerful Algonkians retreat in terror before the invading Mohawks and had been sold by Ghoharius, the Indian sachem, whom it had sheltered and fed.

Later, to the east of the tree were the Old Dutch Church, Sleepy Hollow, and the Headless Horseman's Bridge made famous by Irving. It is a region full of romance and history and may well be called sacred ground.

To the Indians, trees were spiritual beings and what wonder then that this monarch of them all should be an object of their special veneration and a favorite meeting place for their councils.

This tree, *Castanea Dentata*, reached a height of more than one hundred feet, while the trunk was about thirty feet in circumference, and its spread covered about four city lots.

Here was one of the giants, and before its destruction it was not only the largest tree in Westchester County but was rated as the largest in the state.



Many residents still recall the fine quality of the sweet nuts from this monarch but

to the rising generation it is only a tradition and not an experience, for all the human skill has not been able to combat the fatal fungus disease that has placed this species in the category with the auroch and mastodon.

The open field (where the tree once flourished) has long since given place to the Philips Manor Development of the Terrytowns and one more landmark has disappeared.

This magnificent American tree, named Ho Kohongus by Indians who lived nearby, was believed to be a supernatural being and was the site of the Indians' yearly wheat ceremony. In later years this 100-foot tall tree was an awesome sight just across Broadway from the Old Dutch

Church of Sleepy Hollow in North Terrytown. It died in the early part of the twentieth century.

Photo and excerpts courtesy of Westchester County Historical Society.

IN MEMORIUM

WILLIAM W. WHITE

February, 2004



For over ten years, Bill White was an active member of TACFNY's Board of Directors. He had a keen interest in seeing the

American chestnut return to its natural landscape. It was an interest learned from his father who often told young Bill of his experiences harvesting chestnuts when he was a lad. For Bill, no task was too small. He collected pollen in its due period for the anti-blight research program at CESF. He coordinated with

a forestry-consulting firm, to locate pockets of American chestnut stump sprouts returning in clear-cut forest areas. He coordinated with them in gathering hundreds of burs and seeds for planting in several of TACFNY's seed orchards.

Bill loved the out-of-doors being an avid fisherman, hunter and camper. He always participated in the Planting Day at the Zoar Valley Seed Orchard. At the most recent meeting of TACFNY's Executive Committee, the following resolution was passed; RESOLVED: In honor of Charter Member and Board Member William W. White's contributions and service to the New York Chapter of the American Chestnut Foundation, the Zoar Valley Plantation will henceforth be known as THE WILLIAM W. WHITE AMERICAN CHESTNUT PLANTATION. May Bill's memory live on as this plantation continues to grow.

Memorials remembering Bill White were received from:

Carmine and Mary Polo, Richard Johnson and Anne Comstock, Donald and JoLinda Harbst, Paul F. Dudden, Dr. & Mrs Joseph R. Bohan, The Jamestown Rifle Club, John and Denise Schiener, Mr. & Mrs. David A. Trost, Kenneth W. Widener, Virginia Saylor, Mrs. Jane W. Waterhouse, Thais Tepper and Sanford Simmons, Alan P. Danforth, Herbert Darling, Mr. William Fredericks, Red House Brook Chapter (0601), Trout Unlimited, Inc., Richard and Eleanor Whitaker, Larry and Karen Dash, NYS Association for Solid Waste Management, Stanley and Arlene Wirsig, John Ellis, and Jim Donowick.

2004 TACFNY ANNUAL MEETING

TACFNY ANNUAL MEETING,
OCTOBER 16 & 17, 2004

This year our annual get-together will be in the famous Cooperstown area per several member recommendations. However, the meeting place has been changed an earlier announcement of a lakeside site to a mountain-view site, the Oneonta/Cooperstown Holiday Inn, a few miles south of Cooperstown on Rt. 23. It has a fitness exercise room (open 24 hours), Jacuzzi, handicap access, playground, soccer field, game room and complimentary coffee. Pull up their website, www.hioneonta.com and take a tour.

Registration will be at 8:00 am on Saturday, October 16th with roasting chestnuts, Harvest Exchange and browsing the exhibits. The meeting will follow and start promptly at 9:00 am. The research team at CESF, Syracuse, is excited by some new experiments and is looking forward to telling us about their progress. (See Science article).

There also will be some interesting workshops and a luncheon speaker followed by a field trip to see some remaining local American chestnuts or time for exploring Cooperstown and some of the many fascinating attractions. For instance, the National Baseball Hall of Fame, the Soccer Hall of Fame, a cider mill, Cooperstown Bat Co., Iroquois Indian Museum, the Farmers Museum (a working farm with animals and an 1850's village with interpreters that day and gifts

for children), and the Fennimore Art Museum across the street. The Howe Caverns and Herkimer Diamond Mine, where you can go dig to see what you can find (they even provide the hammer), are nearby.

Our dinner foliage viewing train excursion at sunset will feature a

Down Home Barbeque and live interactive theater. The actors intermingle with the guests, the plot evolves, and who knows what will happen. Member sharing and discussion will follow back at the Holiday Inn after the dinner trip.

An open Board Meeting will be held on Sunday morning, October 17th, 8:30 to 11:30 am. Details will be sent in late August. The early registration fee of \$50 (before 9130104) will cover coffee breaks, the luncheon, train and dinner. (The registration fee after 9130 will be \$55.)

Accommodations at the Holiday Inn will be \$99/room/night (2 double beds or a king). PO Box 634, Rt. 23 Southside, Oneonta, NY 13820-0634. Reservations may be made by calling 1-800-465-4329 or 1-607-433-2250. Be sure to mention TACFNY to get the group rate.

This is a great place for a family get-away in addition to being a great time to be with other chestnut enthusiasts. Share ideas and experiences and enjoy learning and being brought up to date.

See you in October.

TACFNY 2004 OFFICERS AND DIRECTORS

OFFICERS 2004

H.F. Darling, Jr., President
Stanley Wirsig, Vice President
Arlene Wirsig, Treasurer and Secretary

DIRECTORS, CLASS OF 2004

Jim Donawick	Dr. Charles Lamb
John Ellis	Leonard Lampel
Adrien Gaudreau	Robert Nowack
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John Gordon	Stanley Wirsig
Jack Mansfield	

NOMINATING COMMITTEE

H.F. Darling, Jr.
Jack Mansfield, Chairman
Frank Munzer

NOMINATIONS FOR BOARD OF DIRECTORS NOW OPEN

New members of the Board will be elected at the next Annual Meeting. Some will be District Directors and others general directors.

If you know of a qualified person whom you would like to nominate, please send his/her name with a short resume to Jack Mansfield, Chairman, Nominating Committee, 349 Roycroft Blvd., Buffalo, NY 14226.

VOLUNTEERNEEDEDTOTAKE OVER DUTIES AS BUR EDITOR

You'll have plenty of help gathering news from Committee Chairmen and District Directors. The Bur is the semi-annual newsletter for TACFNY.

IN MEMORIUM
GORDON A. ANDERSON
- May, 2004

EMPTY BURS ON THE GROUND
COULD
SIGNAL THE PRESENCE OF A
SUPERTREE

TACFNY is constantly on the lookout for new American chestnut family lines to add to the genetic mix in its seed orchards. The broader genetic background means future trees which have been bred with blight resistant pollen, now in research, will more easily adapt to the vagaries of nature when on their own. To encourage the finding of existing large American chestnut trees TACFNY continues its Reward Program of offering annually \$50 for the first 10 American chestnut trees of at least 14" DBH and \$100 for the first 10 of at least 18". For full details please ask for the "Supertree Wanted" flyer by writing to H.F. Darling, TACFNY, 131 California Dr., Williamsville, NY 14221 or phone (716) 632-1125, or E-mail Herb Darling at hdarling@hfdarling.com.



THE FLYING DIRECTOR

District 4 Director, Al Nichols, plans to take to the air to locate large American chestnuts.

If the weather cooperates, Al will fly over the Cooperstown Lake area in an attempt to locate large American chestnuts when in blossom. He already knows of several in the area, two of which are over 12" in diameter. (Cooperstown will be the site of TACFNY's fall 2004 Annual Meeting.)

Recently Al found a tree of 7" diameter, which unfortunately was dead. However, the wood had been put to good use being made into hope chests. Al reports that nuts sent to Iceland have germinated and await the effects of erratic weather for their future. His experiment with diseased Filbert trees to protect local American chestnuts continues.

Charlie Chestnut and his educational program have been at work with the 3rd grade class of Al's wife, Fran. Ten American chestnuts were started and will be planted in Al's seed orchard.

80 WIRE DEER PROTECTORS
NOW AT SHERBURNE

Braving cool and damp weather, twenty five stalwart members pitched in to help at District 7's annual Planting and Maintenance Day in early April. After persistent deer damage, District 7 decided to install wire cages around some of their younger and more vulnerable trees. Earlier tests showed that protected trees exhibited excellent growth because they were no longer inhibited by tube shelters or damaged by foraging deer. Each wire "cage" measures 5 feet high and is 3 feet in diameter. District 7 members not only helped in the installation, but Roy Hopke, District Director, said they donated for the purchase of materials.



It takes many hands to maintain the seed orchards across the state. The photos above show part of the volunteer crew of District 7 members who assembled for the annual maintenance and planting day at the Sherburne Seed Orchard.

LONG ISLAND CHESTNUT
SEEDS
PLANTED BY PACE STUDENTS

As an Earth Day project, students from the Program of Alternative Comprehensive Education (PACE) planted three American chestnut seeds in the Brookville Outdoor Education Center. The rare seeds were harvested last fall from a tree in Stonybrook (Suffolk County), and are of true Long Island stock. They were presented to Mr. Steibel's science class, by Lenny Lampel, TACFNY District 1 Director.

This past spring several young, but diseased American chestnut trees from 10 to 20 feet tall were discovered in a remote section of Blydenburgh County Park, Smithtown (Suffolk County). Standing among them were several larger trees measuring 40 to 50 feet tall, but all killed by the deadly blight. Larry has organized a Volunteer Day in mid July to help prolong the life of some of the infected trees by mud packing blight cankers on some of the diseased trees. It seems that soil from the forest floor contains beneficial fungi, which will attack and kill the blight fungus when applied to the canker.

For more information or how you can help mud packing, call Lenny Lampel at the Seatuck Environmental Association at (631) 581-6908.

THE SQUIRRELS WIN!

Through last winter Tom Walker, Director of District 6, did everything right to sprout a collection of American chestnut nuts he acquired at the previous Harvest Exchange. After planting them in the spring in a special backyard plot, Tom found that foraging squirrels consumed each and every one. Nevertheless, in the same area he has more mature trees measuring up to 7 feet. He also reports he will soon be checking suspected American chestnut trees, for the rewards program, reported by foresters north of Lake Oneida.

Check the "Bark" for the National TACF Annual Meeting October 23-24, 2004.

The BUR
The New York State Chapter of the
American Chestnut Foundation Inc.
c/o Buffalo Museum of Science
1020 Humboldt Parkway
Buffalo, NY 14211

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Membership Application

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Enclosed is an additional contribution in the amount of
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Membership includes subscriptions to The Bark and Journal of the American Chestnut Foundation and enrollment in the New York State Chapter. The Chapter publishes the BUR, helps guide research at CESF, and includes nine Districts for local involvement in maintaining the American chestnut gene pool. Please make check payable to The American Chestnut Foundation, PO Box 4044, Bennington, VT 05201-4044. TACF is a 501(c) (3) non-profit organization. Except for the member services portion of your contribution (valued at \$15), your gift is tax deductible to the full extent allowed by law.

The American Chestnut Foundation, 469 Main Street, PO Box 4044, Bennington, Vermont 05201-4044