THE BUR

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

Volume 11, No. 1 Spring/Summer 2001

PRESIDENT'S MESSAGE

As we have been working with the research team at ESF, our thoughts have carried us ahead to the restoration. As they work on the creation of the test plants of possible blight resistant American chestnuts, there are many things that we need to do now to prepare for this tree. The time waiting through the painstaking steps of proof of blight resistance will be productive.

We need at least 50 more parental lines to add to the other 50 lines now growing in our seed orchards. Searchers for new wild parental trees will be needed, and district directors will be coordinating volunteers to work on this.

The "Super Tree" Reward program is now underway which also should bring in some new wild parent trees even if they do not meet the super size criteria. Most of the original mother trees are now dead, so this will be an ongoing activity to stay ahead of the blight. even after we find the destgnated additional 50 lines.

New planting sites, with care available, need to be added, and good sanay loam soil will be targeted to encourage faster blooming. We're going to need every advantage possible to start providing the large seen sources needed lo bring about the millions of treer needed to build forests and meet other demands.

Provenance testing for area adaptability can be done now, and finally a restoration plan will have to be developed which will be able to provide the huge quantities of seedlings needed for a sustained reforestation effort.

These are some of the things we will be working on during the testing period, and your help will be needed. We have come a long way, but we must balance enthusiasm with caution and not declare success too soon. To confirm that the trees coming out of the lab are blight resistant, they will have to be thoroughly tested multiple times with the blight fungus. We need to be rock-solid sure that the trees we declare to be blight reststant are just that.

The reason I am writing this is that the statement was made at the National Board of Directors meeting in April that the backcross seedlings would soon be ready for distribution. It was quickly pointed out that the number of lines of backcross trees needed to be increased for variability, and the tests for timber type and other qualities and characteristics necessary for the restoration will take a long time for both our bioengineering and the backcross programs.

Although we have every right to brag a little about our accomplishments throughout the American Chestnut Foundation, we cannot let the public think that we have the blight resistant tree now and lose interest before a full restoration program is accomplished. This will take years to come and much work on all our parts. And it will be an exciting time for all of us.

LONG LIVE THE AMERICAN CHESTNUT.

Planting in TACFNY seed orchards is vital to the whole restoration program. Now, in 55 orchards across the state there are hundreds of young tress representing 50 genetic lines of American chestnuts. However, 100 lines are necessary to assure enough diversity for the restored species to withstand the future vagaries of the weather and disease.

DISTRICT 3: FRANK MUNZER, DIRECTOR

(Counties of Duchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester)
845-266-5138

Frank and Craig Hibben manned a TACFNY booth at a spring Azalea Festival in the Lasdon Arboretum of Westchester County. Among the people with whom they talked there were several who believed they knew of trees that would qualify for the "Super Tree" reward. Last year District 3 collected over 700 nuts from the trees they have planted in the Lasdon seed orchard.

Frank reports that all the trees in the two District 3 seed plantations are doing well. There is some inevitable loss to blight, but stump shoots reappear to preserve the genetic line.

DISTRICT 4: ALLEN NICHOLS, DIRECTOR

(Counties of Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselear, Schenectady and Schoharie)
607-263-5105

Al has been busy planting nuts and contacting people for a meeting with the purpose of looking for new trees.

Foresters at the local sawmills have been a good source for new tree locations. One that a forester said was 17" DBH, unfortunately, died last year. However, Al received a tip on another 15" DBH that is in good health.

One of the local Boy Scout troops will plant 200 to 300 two-year-old Saratoga State nursery seedlings in a tornado area with the cooperation of the DEC. Also, Al has found a landowner who is having one area logged expressly to allow the native chestnuts to grow. He has collected nuts from small trees in the area. Al also gave the landowner 30 nuts which were started in a neighboring greenhouse.

Al's own plantings are coming along well. Among them are two nuts from a tree pollinated with the pollen from Doc Leahy's tree (Doc Leahy's tree has the blight and will probably be dead in a year or two).

DISTRICT 6: T. URLING WALKER, DIRECTOR

(Counties of Jefferson, Herkimer, Lewis, Oneida, and St. Lawrence)
315-782-3153

Tom's forester contacts have reported a couple of large American chestnut trees, one of which Tom has seen and is a good straight, tall tree about 15" DBH and seems in good health. The other is in the shore area of Lake Ontario. Tom has alerted the forestry group to the "Super Tree" reward program.

Also Tom reports that the American chestnuts planted to celebrate the success of the Tree Watertown planting program are doing well. He adds that the experimental trees planted to test winter hardiness have survived yet another winter. Concerning the Tree Watertown program, Tom says he has been trying to work as many American chestnut trees into the project as possible considering that the program emphasizes a variety of tree species.

The Thompson Park Conservancy (Zoo) demonstration area has had limited success due to construction and other reasons. Tom planned to order a number of trees from the DEC nursery for planting this spring.

DISTRICT 7: ROY D. HOPKE, DIRECTOR

(Counties of Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga and Tompkins)
607-648-5512

Roy's team has been busy with several projects. They have made presentations to several groups including one by Roy to the NY Chapter of the American Turkey Federation at their annual meeting in Auburn, NY. Later. Dick Fox participated in the Schuyler Earth Day with a booth using the chestnut display and informational sheets. Interest was high and Dick answered plenty of questions.

On April 28 members met at the Sherburne plantation and planted 40 trees. They also installed taller tubes, wire mesh and tube extensions on approximately 100 previously planted trees in an effort to prevent deer browsing.

DISTRICT 9: BILL SNYDER, DIRECTOR

(Counties of Allegany, Cattaraugus, Chautauqua, Erie, Niagara and Wyoming)
716-839-5456

District 9 volunteers manned a booth at the Western NY Nurseryman and Landscape Show called "Plantasia" in early spring. Over 12,000 people attended the show and there was considerable interest in the American chestnut story.

Bill reports that 30 people attended the Annual Planting Day on April 28 when 100 new seedlings were planted and the 600 tree plantation maintained.

Bob Nowack of District 7 displays a wire extension to prevent deer browsing of young saplings as they grow taller than the starter tree tubes.

RESEARCH ADDS NEW STRATEGY THAT MAY REDUCE TIME FOR RESTORATION

The research team at ESF (College of Environmental Science and Forestry in Syracuse) has steadily worked out strategies that should be shorter. The one that first produces resistant pollen on a tree in the field is the winner, but it will be much earlier if we can do it as below.

At this point we have added the strategy of transforming pollen and using it immediately on large mothers because pollen had such a large multiplication factor – especially as our seed orchard crowns grow – and they are easier to work with later.

Here is the list of paths that the ESF team has explored: adding genes to young embryos, to sprouting nuts, to stem tips (meristems), and lately pollen. Even "more lately" the team is designing 2 paths even shorter than by transforming pollen.

Dr. Danilo Fernando is working with Dr. Maynard, and with Dr. Powell who is also finishing the plasmid, the tiny circle of resistance genes that is to fit in the cell's long DNA string.

He is developing the pollen transformation protocol. Pollen is a natural vector, or carrier, for delivering genes to the egg. The little plant that grows from this mating is 100% transformed, since every cell in the plant comes from the dividing of the original cell made in the mating.

So far he has succeeded in growing pollen tubes in culture and optimized electroporation (opening the cell wall with an electric shock to let the genes into the nucleus). He will also try microinjection, particle bombardment, (gene gun), and cocultivation with agrobacterium. We are set up to receive and try fresh American chestnut pollen this season.

The DNA to be introduced will be oxalic oxidase. antibacterial peptides and chitinase, developed in the laboratories of Drs. Powell and Maynard. Also reporter genes: Green florescent protein and glucuronidase to detect and guide separation of the transformants from the misses. which saves work.

The field crews will be starting their summer's work soon.

Dr. Maynard has asked for at least 100 cell lines: mother trees now standing in the forest or in our seed orchards. We count 55 seed orchards now, holding over 50 cell lines. These are the numbers you'll see in the database, in the mother tree columns. These number/names recur in many of the seed orchards.

And we have started looking for more trees: Volunteers have offered to search in the Lake Champlain Valley and the south and east shores of Lake Ontario. Also, the current reward program for "Super Trees" will at least bring new mothers.

Besides the seed orchards that are starting to bloom. there are many young new ones that will be ready for pollen when we need them. We will be asking the new planters in the database for reports on their efforts.

We have lists of people who have expressed interest in helping, so we plan to start some steps of the restoration now while we're waiting for more seed orchards to bloom. to start planting the larger "seed sources" that will be needed to make forests and meet public demand. Isn't it exciting that we can be thinking about restoration?

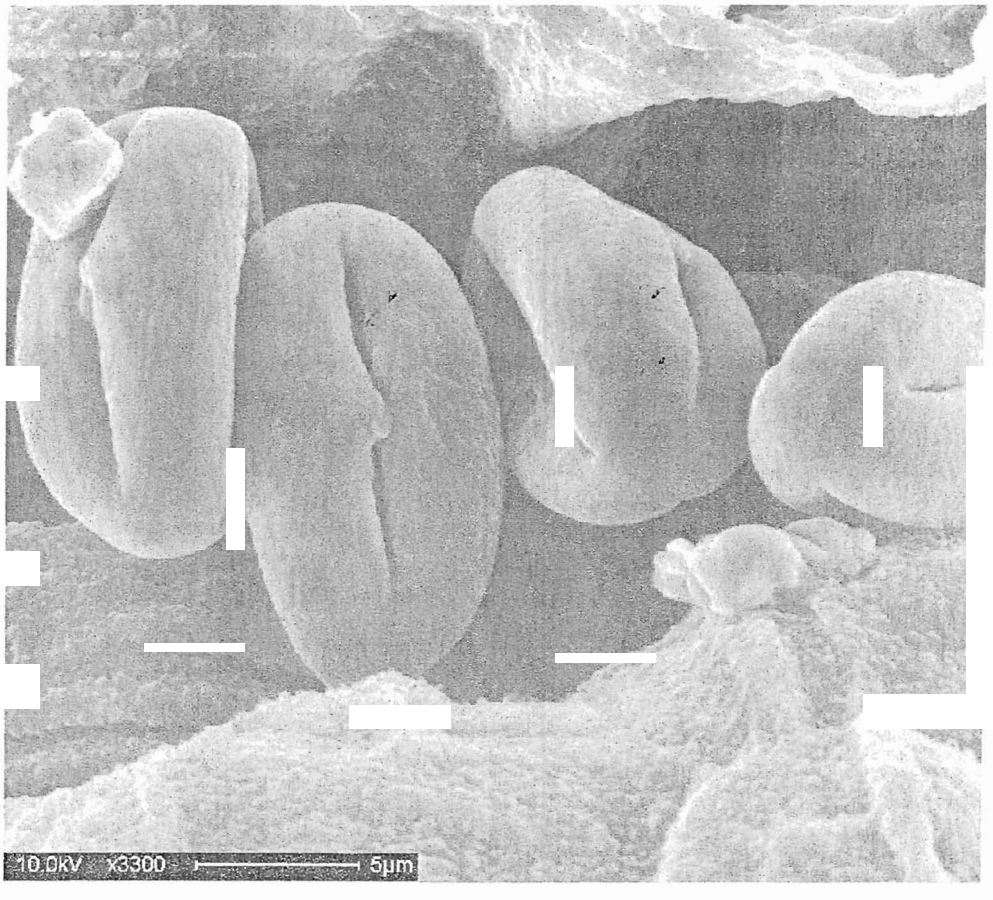
IN MEMORIUM

George Bonenberger

Norbert Jerabek

Alfred Trout

Robert Jean White



The American chestnut pollen shown above has been magnified 3,000 times by a Scanning Electron Microscope in the ESF laboratories. Research is in progress to transform the pollen to resist the deadly blight. If successful it will greatly reduce the time until restoration.

OCTOBER ANNUAL MEETING IN CORNING

DEER SOLUTIONS

In response to the BUR request for new or different ways to prevent deer damage, Jack Denman of Neversink, NY wrote to share his experiences.

Jack has a deer "infested farm with deer delicacies galore: a vegetable garden, fruit orchard and some nut trees. And he has no deer problems.

The Answer: An Electric Fence

Jack writes that the electric fence can be solar powered, battery powered or plug-in. "Mine is plugged-in and will charge miles of wire. The total cost with wire, etc. is under $100."

Jack advises using a single strand about 2 feet high and hung loosely. A good ground is required such as a copper rod driven 2 to 3 feet. into the ground. Jack claims the set-up is simple to install, move around or extend. And, it is easy to mow around.

Jack writes: "A training period is required for the deer and simple repairs are needed when it is first installed – they will knock it down but learn fast and seem to warn their friends of the danger. I have no problems with jump-overs but I would advise that a few strands be run straight through the plot if that happened."

"I have an apple tree near the garden and apples fall and roll around and under the fence –(but) they don't get eaten till I flick them away a bit. Very effective!"

"The deer were eating some of the nice apples or? the lower branches. The cure: run an electric wire to the top of the tree? drape it down and plug a nice juicy apple on the end – problem solved, only fallen apples are eaten."

Jack concludes: "With all the deer that we have these days, it's useless to plant any trees any place without proper protection – it will not flourish."

If you would like to contact Jack about his electric fence experiences, you may write him: Jack Denman, RR I Box 30. Neversink, NY 12765 or phone (845) 985-2332.

And if you have deer damage solutions or experiences you would like to share with others, send your information to BUR Editor, Jack Mansfield, 349 Roycroft Blvd., Snyder. NY 14226.

The Southern Tier will take its turn as host to the 2001 TACF New York Chapter Annual Meeting October 19, 20, 21. It will be held at the Holiday Inn of Painted Post on the edge of Corning. NY.

Friday evening will be Get-Together T i l e with exhibit set-up, nibbles, catching up with seldom seen friends, and – what else – much chestnut talk. Saturday will bring reports, science updates, presentations and a chestnut luncheon with featured speaker.

The afternoon will include a hands-on workshop plus a tour of the Corning Glass Museum. You may think you have seen it. but the new museum has been open only a few months and is terrific with its magnificent collection of historic and unique glass objects from all over the world. The always fascinating glass blowing of animals is joined with new features such as the Glass Studio where you may try your hand at working with glass and creating a keepsake to take home. Shopping is easily available in a new arrangement of glass boutiques.

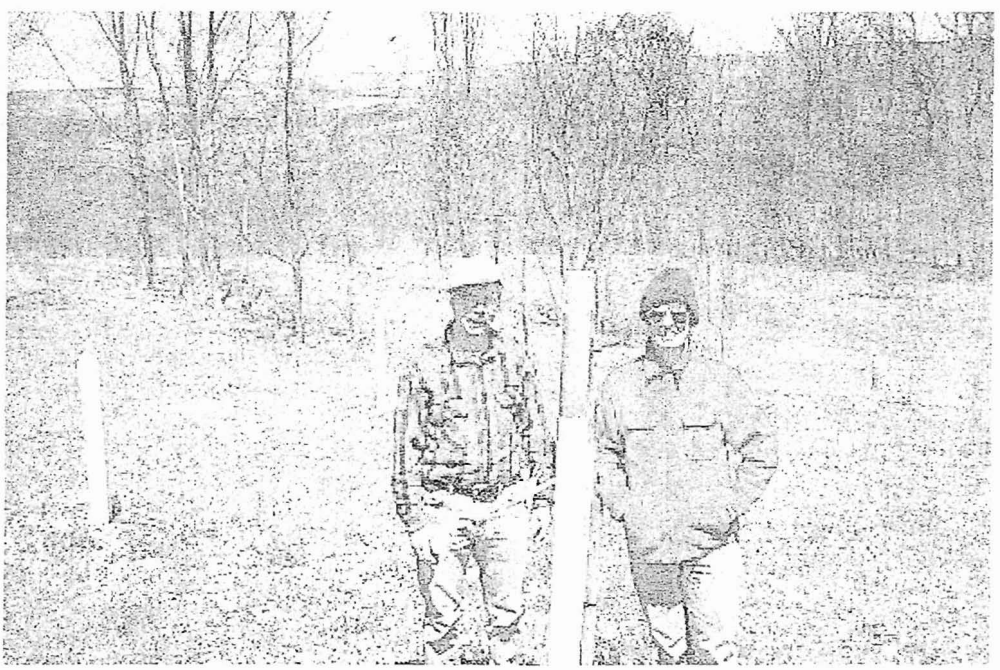
Dinner will be highlighted by Dr. Chestnut. a TACF member magician, doing a show with a chestnut theme. (,Wonderif he can make the blight disappear?) Watch for additional features to be detailed in the meeting brochure. The Harvest Exchange will follow dinner with time for more chestnut talk. Sunday morning3 main event will be the open board meeting and local activities.

Other Attractions

- Take a ride in a B-17 at the National Warplane Museum.
- Check out the antique motorcycles at the Glen Curtis Museum.
- Take the kids to see and feed fish at various stages at the NYS Fish Hatchery.
- Hike Watkins Glen or take a scenic drive around Keuka Lake:
- See the new additions to the largest collection of Western art in the East at the Rockwell Museum.
- Check the map for the most convenient stops on the way home from a galaxy of wineries and antique shops

Put October 19, 20, 21 on your calendar now for a great fall get-away with interesting information, time for your ideas and input, companionslup with other chestnut folks, and relaxing fun.

Watch for your registration brochure in early September.



Tube extensions are another of the novel methods District 7 has created to curtail deer damage to young American chestnut frees Ken and Rose Burdick pose alongside to give an idea of the height necessary to discourage browsing.

AMERICAN CHESTNUT SEED SOLUTIONS

By John Gordon, Director of TACFNY and a commercial nut tree grower.

With its early spring and exceptionally heavy rain last year – 2000 – sorely tested our ability to germinate American chestnuts. At this writing spring 2001 has just started, but whatever, we will not have success unless we observe the following fundamentals.

Seed Storage and Planting

Seeds should be stored after gathering in one part air-dried peat moss plus one part wrung-out peat moss (wet it, let it set, then wring out all excess moisture). The quantity should be enough to separate single layers of seed so that spoiled nuts do not touch good nuts, conveying mold.

The nuts are then placed in trays or plastic bags and held throughout the winter at F35 to F30 until April. (F30, and a bit lower, is nature's on-the-ground low temperature storage for high moisture nuts. Nut moisture naturally decreases as peak winter approaches. so nuts can stand even lower temperatures. If you use a basement refrigerator for storage, as the basement cools in winter the seed temperature may dip below F30. No temperature resetting should be necessary since, as we have seen, lower moisture content seeds can withstand temperatures below F30.)

By late April nuts should be planted in the driest part of the garden, one inch down with the rapidly extending root pointing down. Squirrels plant in the fall with the top of the nut exposed to sun-warm the nuts, thus germinating extra early. This flags them for a meal. Our nuts will be up weeks later, more toward last frost, that is, if the rabbits, squirrels, and raccoons which can smell them underground have not been digging.

Lake-Plain American Chestnuts

The above method works well with lake-plain Americans found in the level lands along Lakes Erie and Ontario which have adapted to pH 6.4 to 6.8, tlie typical garden soil pH. If any yellowing of leaves is seen it can be rectified by a two cup vinegar to five gallon water drench, unless the yellowing was caused by water logged soil, or soil cold and wet due to mulch piled near the seedlings. These healthy lake plain chestnuts have their natural home in garden soil, and would need transplanting only to space them farther apart.

Blue-Berry Ridge Americans

Success is not so easy for ridge American chestnuts which are the focus of NYACF's gene banking and reforestation. Ridge chestnuts have three problems:

- Poor nuts. dead internally
- Weevils
- Stunting and yellowing in garden soil.

Let's take them one at a time:

Poor Nuts, Dead Internally

This often is caused by the tree running out of calcium at the end of a cool season, and sucking it out of the nuts, causing internal breakdown. In native chestnut seeds from the wild we have to live with calcium deficiency except we should try extra sorting out of blackened nuts before they become balls of mold, and drier than normal storage to halt mold spread. However, in our seed plantings like Zoar we may amend the site soil with calcium sulfate treatments also used by ginseng and apple growers. (It is interesting to note that lake-plain chestnuts are three and more times the weight of ridge chestnuts due to richer calcium soil.)

Weevils

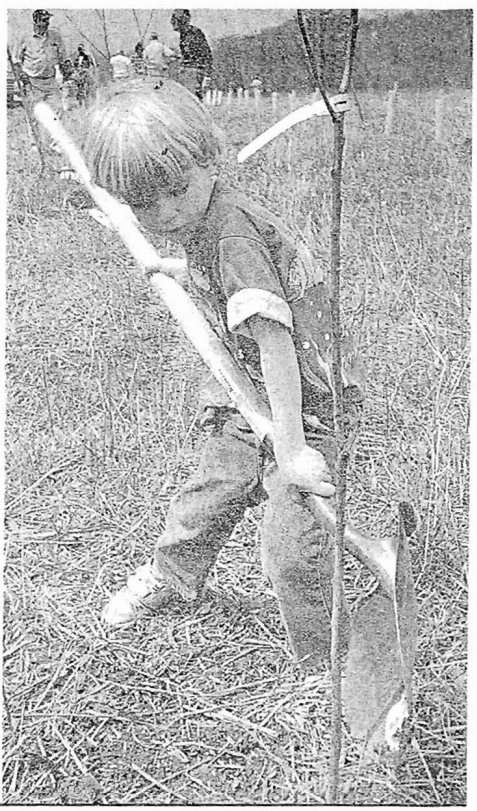
Weevils moved in upon us in 2000 due to the extra early spring and plenty of rain at bloom time. The curculios emerge from the loosened soil to scout out blooming chestnuts and lie in wait for the ripening nuts at which time they drill an imperceptible hole and deposit several eggs. The grubs emerge through a 3/32 inch hole in two weeks to try to get back into the ground under the tree but, unfortunately, we find them in our nut harvest. A weevil may eat only part of the food sack in the nut and the nut may go on to produce a seedling. You can treat the seed like a calcium deficient seed and plant extra early. It would be wise to remove all weevil damaged seeds at harvest and store them in double bags with dry peat moss and seed in the inner bag and wet newspaper in the outer. Oxygen migrates easily through polyethylene to satisfy nut respiration so tiny holes can be added toward spring to relieve condensation or there will be too much moisture.

Weevils can be destroyed without harming the nuts if their temperature at drop time is precisely regulated. According to Greg Miller, Ohio commercial grower, temperature should be held at F120 for 15 to 20 minutes. It takes a double water bath to achieve this because below F118 the weevils are not killed, or above F122 the chestnuts are killed. Time is not as critical as is temperature, except use a longer time with larger nuts.

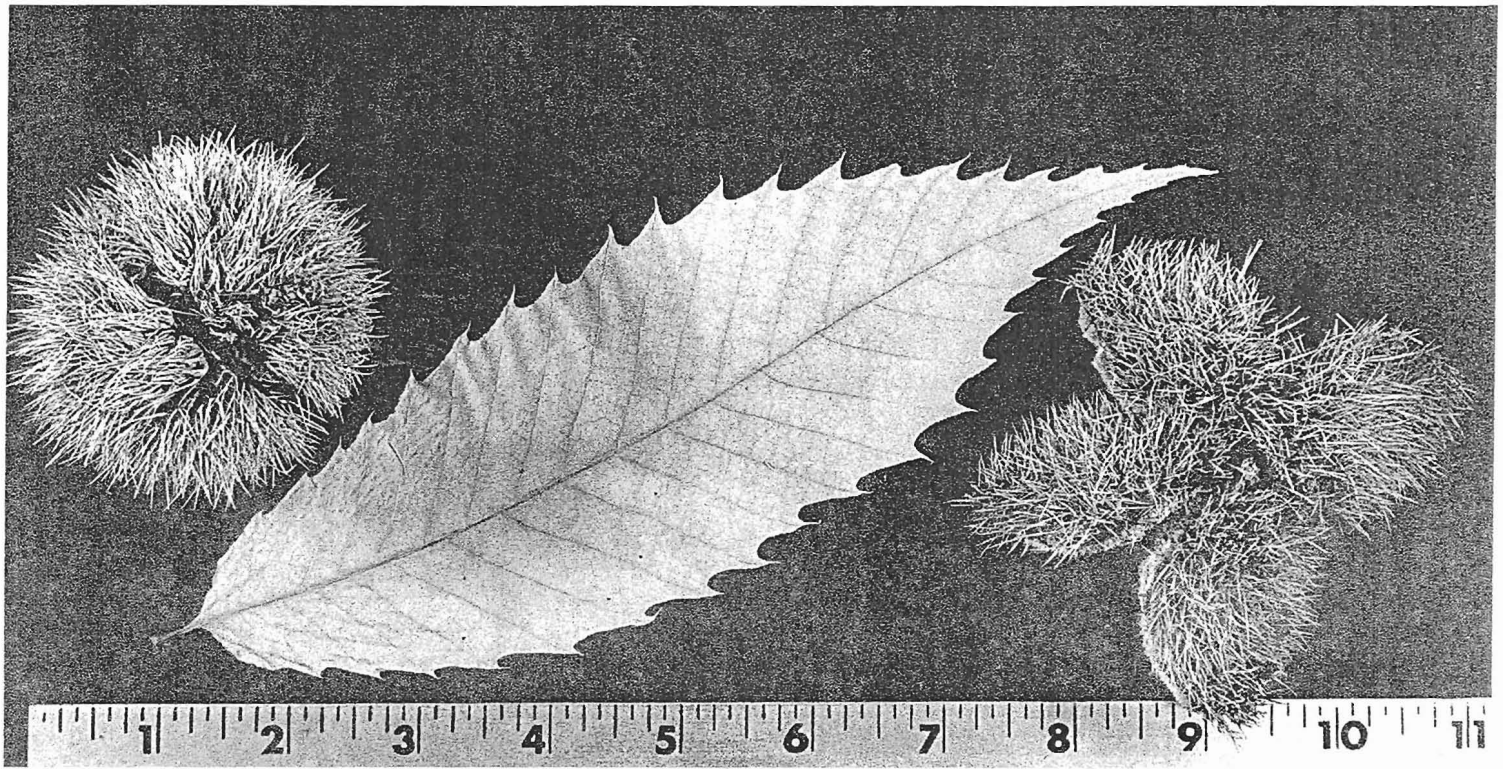
Stunting and Yellowing In Garden Soil

Ridge chestnuts grow in about pH 5.5 acid soil so garden soil needs much acidification to temporarily lower it to this pH. Make believe you are to plant a blueberry or rhododendron, and ask for recommendations at your local Cornell Extension or a garden store dealing with these items. Take along a soil sample. I would listen for: sulfur to be mixed into the soil a year prior to lower your pH 5.6 and early spring dressing with ammonium sulfate followed by azalea liquid drench throughout the season. I would not expect much to be said about leaf mold, humus, fish emulsion fertilizer nor green manure, iron and manganese deficiencies, nor other technical discussions.

If you are having problems for which the above doesn't seem to be the solution, you may contact me by E-mail at NuttreeGordon@hotmaiI.com or by writing me at 1385 Campbell Blvd., Amherst, NY 14228-1404.



REWARD



$50 OR $100 REWARD FOR "SUPERTREES"

Seeds from mature American chestnut trees that still exist in our forests are needed for planting to preserve genetic lines adapted to the NY State environment and to broaden the genetic lines in our seed orchards to 100.

TACFNY is now offering $100 for the first 10 trees found over 18" DBH (Diameter at Breast Height) and $50 for the first 10 trees over 14" DBH. They must be found in NY State through 2001, and not previously recorded by TACFNY. It is necessary also that the property owner allow accessibility for identification, pollination, and/or seed collection.

Of course, since our goal is to add new genetic lines to our seed orchards, we wish to reward those who locate trees from all corners of the state rather than more than one reward for one single person who is lucky enough to discover more than one tree in close proximity to each other and, likely, the same genetic source.

The first indication that a chestnut tree is in the vicinity usually is the finding of open, prickly burs on the ground. If closed, these burs would measure about 3" across. The leaves usually measure 6 to 9 inches long with pinpointed teeth. Note the "basel" angle at the basé of the leaf is quite acute whereas the Chinese, European and Japanese chestnut angles are less so. For further information, write for TACFNY's "Identification Bulletin" or see web pages on the next page.

To claim your reward, send a twig with a few leaves and, if possible. several leaves from different areas of the tree to: Dr. Richard Zander, TACFNY. c/o Buffalo Museum of Science, 1020 Humboldt Parkway, Buffalo, 14211. If you have questions, please contact Herb Darling, TACFNY President, 131 California Dr., Williamsville, NY 14221. Or call (716) 632-1125.

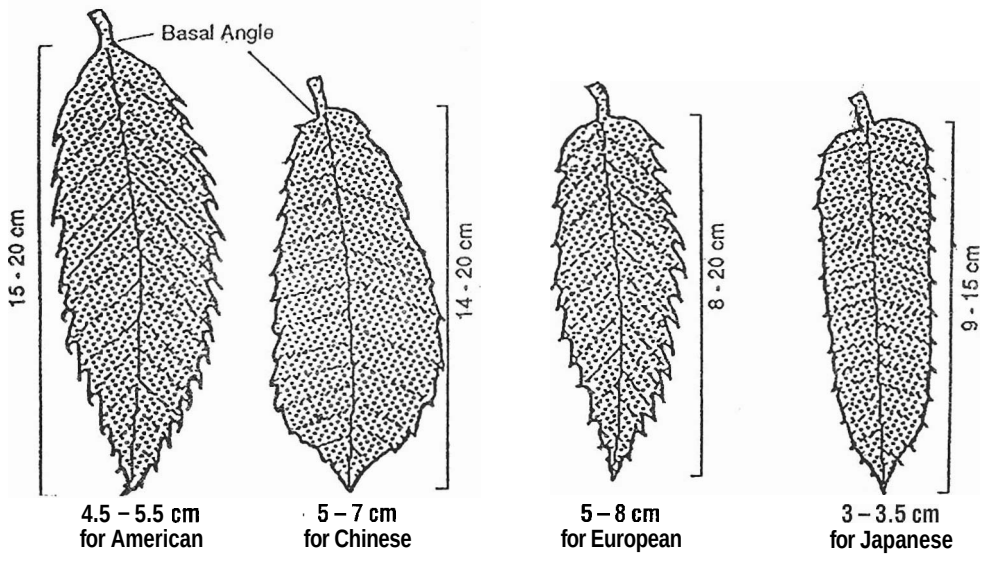
THIS IS 'BUCKEYE', NOT an AMERICAN CHESTNUT

When American chestnut is mentioned. many people think first of the conunon "Buckeye" shown above or its close relative. the "Horse Chestnut?

NEITHER RESEMBLES THE AMERICAN CHESTNUT

The common "chestnuts" usually have 5 or 7 palmated leaves radiating from a common point. Their flowers form a conical. Christmas tree shape. And the spines on their burs are less dense and not quite as prickly as the American chestnut.

AMERICAN CHESTNUT IDENTIFICATION



It is easy to be confused about identification of the various chestnut pieces. When looking at leaves, inspect older leaves from the base of a branch as well as new leaves from the tip. Generally, if a tree has leaves or twigs with noticeable hair, it is not pure American, which is essentially hairless. And, if the leaves do not usually have large, regular teeth, it is not pure American. The size of leaf varies and is not critical in identification.

AMERICAN. Leaf with distinct teeth. Apex and basal angle generally acute compared with Asiatic species. Essentially hairless. Buds pointed.

CHINESE. Leaf is broad, heavy textured and hairy underneath when young. Winter twig color is yellowish-buff and simple hairs are present near tip.

EUROPEAN. Leaf teeth may be rounded as shown above on left or sharper as shown on right. Leaves, usually hairy, feel fuzzy. Twigs and buds typically fatter than other species.

JAPANESE. Leaf is narrow, margin bristle tipped and base of leaf is blunt. Twig color is purplish brown. Buds are rounded.

How to determine DBH. DBH (Diameter at Breast Height) is about 4½ feet above the ground. To estimate, you can use a belt or string to measure the circumference which when divided by 3.2 will give the diameter.

A LETTER

The following is a portion of a letter sent to Herb Darling from 85-year-old Frank O'Brian who lives near Scio, NY.

"I was reading an old farm diary of a local person and he told about picking up chestnuts in the fall by the bushels and selling nuts for a good price – that was about a hundred years ago. But when the blight hit, that killed most of the trees in a few years.

"When I was young, in the 1940s we had quite a chestnut stand in our woods, but they are all dead. As I understand it the cambium would rot out and the bark would fall off so the tree would stand for years, dead as a doormouse, as the saying goes, but the lumber would stay sound for many years and as these were mostly six to eight inch poles we used to love to cut them for fence posts as they split so easily and didn't rot in the ground for many years.

"Once in a while a clump of stumps would send up live saplings and I found some empty burs once but after a few years the same blight would catch up to the sapling and it would die. It was such a valuable lumber for building purposes and resisted rot so well that a good many of the early telephone poles were cut from chestnut trees before the blight hit."

THE AMERICAN CHESTNUT

In times past, forests grew tall and true
fir and pine, oak and maple.
Some say, though, that the proudest of all
was the American Chestnut.

Today, though, they are hard to find,
prized by many for its beauty and strength,
almost gone, but not forgotten.
Some work to return it to former glory.

Planting. nurturing, spreading the word.
maybe someday we'll all be in tune.
Conservationists all, we'll treasure the gift,
and "Under the Spreading Chestnut Tree"
will be our hopeful song.

By Joyce Hagen

MORE IDENTIFICATION INFORMATION

For more in-depth information on how to identify the American chestnut you may refer to the Botany section of the Buffalo Museum of Science web page:
www.buffalomuseumofscience.org/botchestnut.htmr/chkey.htm

Another source is the national TCAF web site **www.acf.org.**

Nominations for the Board of Directors

New York State is divided into nine Districts. A director from each District will be sought as well as general board members. Their duties will include attendance at annual meetings, help in developing membership in their District, and seeking interested leaders. Please send nominations with a brief resume to:

Nominating Committee
TACFNY
C/O The **Buffalo Museum** of Science
1020 Humboldt Parkway
Buffalo, NY **14211**

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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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BUFFALO, NY
Permit No. 2964

THE BUR

IF YOU HAVE FRIENDS WHO ARE INTERESTED IN OUR GOAL OF RESTORING THE AMERICAN CHESTNUT, PLEASE GIVE THEM THIS APPLICATION.

Membership Application

Enclosed is my membership support of:

- ___ Gold Leaf, $1,000
- ___ Silver Leaf, $500
- ___ Bronze Leaf, $250
- ___ Green Leaf, $100
- ___ Regular, $40
- ___ Student, $15
- ___ Other $_____
- ___ Special Gift to NY State Chapter $_____

Total Amount $_____

Enclosed is an additional contribution in the amount of $_____ in support of the New York State chapter's activities.

Name: _____

Address: _____

City/State/Zip: _____

Telephone: _____ E-mail: _____

❑ This is a gift membership from: _____

Address: _____

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, P.O. 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.