The TREE URCHIN

Newsletter of the Maine Chapter of the
American Chestnut Foundation

Volume 13 Number 1

Spring 2010

The Mission of the Maine Chapter of the American Chestnut Foundation:

A. *To protect, conserve, preserve and propagate trees from all-important remaining native Maine American chestnut populations in the state.*
B. *To restore American chestnuts to a place of ecological and economic importance and self-sustainability throughout their original forest range in Maine.*
C. *To make blight-resistant American chestnuts available to the people of Maine as soon as possible.*

President's Letter

This issue of The TREE URCHIN is being dedicated to the late Robert Lindgren and his family. Dr. Bob was a long term member of the Maine chapter and was a friend, mentor, and educator in the finest degree. Leadership is not a given quality, but is something that must be earned, and Bob was the consummate leader. He was the orchard manager at Highmoor Farms where we have a large Clapper grove with many lines, and he was one of our leading pollinators and was able to pass on much of his knowledge to the newer members of the chapter. We extend our condolences to his wife, Nancy, and her family.

As we remember Bob, we want to welcome to the Board of Directors our newest elected member – Dr. Ray "Bucky" Owen. Dr. Owen is the former Commissioner of the Maine Dept. of Inland Fisheries and Wildlife, former Chairman of the Dept. of Wildlife at the Univ. of Maine, Baxter State Park Advisory Commission, and just recently received the prestigious Lee Wulff Conservation Award from the Atlantic Salmon Federation and is committed to the Penobscot River Restoration Project. We look forward to working with Bucky and learning from him.

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Bob BaRoss (left) and Bob Lindgren (right) manning the METACF booth at the Fryeburg Fair October 2000.

Bob Lindgren, long time Maine Chapter director, passed away on January 5. He was much involved with tree scouting in western Maine, and was orchard manager at Highmoor during the first years of that planting. He had a long working career as a chemist in the paper industry, taught chemistry at Husson College, owned a shingle mill for awhile, and had many other activities which made him well known in the state. He is survived by his wife Nancy and several children. (The Maine Chapter has received several memorial gifts in his name.)

submitted by Joseph Conwill

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The American Chestnut Foundation:
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Please send correspondence regarding ME-TACF news, the ME-TACF website, blog or The Tree Urchin to TreeUrchin@gmail.com
Newsletter, Blog and Web Editor, Chuck Marecic

Harold in his breeding orchard located in Hope.

Managing A Chestnut Orchard

by Harold Mosher

In the winter of 2005-06, Eric Evans, his wife Laura, and I went for a walk through the woods on my property in Hope. We had recently met through a mutual friend to whom I had mentioned in passing that I was interested in efforts to reestablish the American chestnut in Eastern forests. She referred me to Eric, the science and breeding coordinator for ME-TACF, who lives only a few miles from me. Our walk prompted a subsequent e-mail from Eric asking if I would be willing to have a breeding orchard on my property. I jumped at the chance, also accepting the job of orchard manager.

In subsequent months I met many more involved with ME-TACF. I was invited to quarterly board meetings and was asked to be a board member, a position to which I was reelected last year. The third week of April 2006, I had the pleasure of joining many volunteers and board members as we cleared and planted a one-acre plot of beech forest.

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Up Coming Events:

May 22, 2010 Saturday, Leonard's Mills in Bradley, Maine
Plan to join us for the first Maine planting of blight-resistant chestnut seedlings from TACF's research farm in Virginia. Come early (10 AM) for a dedication of the new Fish Way on Blackman Stream (http://www.fws.gov/northeast/gulfofmaine/news/Blackman.html), followed by the Chestnut Planting (11:30). While there join a guided tour of the ME-TACF chestnut breeding orchard in the Penobscot Experimental Forest. For more information: http://www.leonardsmills.com

Please check our NEW weblog www.metacf.wordpress.com for news updates, and details. Thanks.

President's Letter (continued from page 1)

This coming year should to be an exciting one that holds much promise for the future of chestnuts in Maine. On May 22, 2010, we will be planting the first B3F3 seedlings at Leonard's Mills in Bradley, ME. The seedlings are a gift from Dr. Garold Thumm who received them for his long-term membership in TACF and he donated them to our chapter. They are from TACF's research farm in Meadowview, VA, are expected to be highly blight-resistant, and spent the past winter in root bags at Eric Evan's house. Leonard's Mills is a living history museum and their Board of Directors has voted to receive these seedlings and I will be serving as the manager of these seedlings after they are planted. Later on this year we hope to have a successful pollination involving our B3F1 orchards to produce B3F2 seeds which will be planted at our first seed orchards in the Penobscot Experimental Forest in Bradley, ME. During the summer months Welles Thurber will be assisting in a cruise of two 5 acre plots in this experimental forest, and the actual boundaries will be established at that time. Later on this fall these two plots will be cleared of existing trees and next spring we establish our first seed orchards. This land is owned by the Univ. of Maine (UMO) and is managed by the US Forest Service. We have received permission from both organizations for these orchards, and UMO will clear the land for us at no charge. If all goes as planned we should have the first B3F3 seeds from Maine trees in about 8 years.

Another project we are working on is updating our "strategic plan" and the major work on this project will take place in early May.

One new B3F1 breeding orchard will be established this year and will have seeds from the Embden grove. On the third attempt at pollinating an Embden tree we were successful last year as over 150 seeds were harvested in a controlled pollination. This area is outside the "normal" range as indicated on most maps and should add extra diversity to the gene pool of our orchards.

Thank you for all your help and if you can volunteer for any project this summer please let us know.

Glen Rea
President, Maine Chapter
The American Chestnut Foundation

ME-TACF President's gavel made from American Chestnut wood (right) in the hand of ME-TACF President Glen Rea (below left).

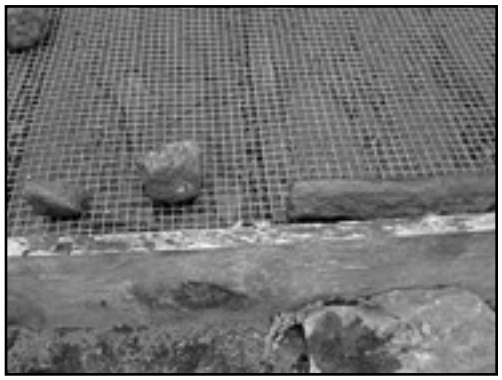
Photos courtesy of Roger Willby

The late Austin Jones and Eric Evans polishing a chestnut "cookie" at Merryspring (left).

Breeding Program Update

We have one new line of third-back-cross chestnut seeds to include in our breeding program. Last summer, Glen Rea pollinated a native American chestnut tree in Embden with pollen from the TACF Research Farms in Meadowview VA, then harvested 150 seeds in October. This is our first mother tree in Somerset County, and the most north-westerly of all our mother trees, so it will be an valuable addition to our genetic diversity. This July we intend to pollinate several more new mother trees -- good possibilities that we will investigate are in Cornville, Vasselboro, Bowdoinham, Fryeburg, and Albion. Do any of our readers know of native American chestnut trees that produce burs and that we have not already pollinated? Check the current list of our mother tree towns on page 6.

We do not have an orchard site prepared for the Embden seeds, so I will grow them for a year in a nursery bed, then we can transplant them next April into a new breeding orchard, along with any other new lines that we make this summer, which we can plant by direct seeding at the same time. Growing chestnut seedlings involves the serious risk of losing the seeds to theft by birds and rodents. The photos here



show the method that has worked well in the past. The half-inch galvanized-steel hardware cloth is snug up against the perimeter boards to exclude thieves, and the landscape fabric minimizes weeds between the rows of chestnut seeds. Next April we will lift off the hardware cloth, then dig up the seedlings for transplanting bare-root into the new orchard.

We have injected live lab-grown blight fungus into the bark of our third-backcross chestnut trees in our Merryspring (Camden), Groce (Hope), and Deer Hill (China) orchards, to evaluate their blight-resistance. We have culled out most of the trees that show no promise, and will complete that process in those orchards this summer. The B3F2 seeds produced by open pollination in these orchards over the next several years will include a small percentage that have all the necessary genes for blight resistance that they have inherited from their Chinese great-great-grandparent. We will need to plant all these seeds in new seed orchards, where we can evaluate their blight-resistance, then let the selected few produce highly-blight-resistant B3F3 American-type chestnuts.

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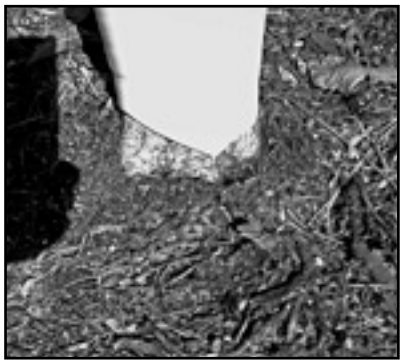
Managing a Chestnut Orchard (continued from page 2)

We planted seedlings that had been started from seed that February, the results of crossing pollen from Meadowview in Virginia with "mother trees," some of the very few native Maine chestnuts that were lucky enough to escape blight infection. The trees in this orchard are third-backcross, 15/16 American and 1/16 Chinese chestnut. Each generation is selected with respect to degree of Chinese resistance and characteristics that are otherwise American. There are nine other such orchards in Maine.

This plot started with 89 trees in nine rows, including 80 third-backcrosses, as wells some pure American, pure Chinese, and Chinese-American hybrid controls. It soon became apparent that these trees were growing with vigor not found in the other Maine orchards. The difference, it seems, is due to the fact that the other orchards were grown in fields rather than cleared forest. The forest soil has fungi and bacteria that are conducive to tree growth. Beech is closely related to chestnut, so the organisms in this soil were particularly well suited to chestnut growth. There is another Maine orchard in Bradley that was planted a year later, also on a patch of cleared forest. It, too, is doing exceptionally well.

There seems to be a "down side" to planting in cleared forest, however. Last summer nine of the trees in plot #1 died back for no reason that was immediately apparent. Late in the season fruiting bodies of a fungus, *Armillaria sp.,* appeared. Clark Granger, a retired plant pathologist who is one of ME-TACF's directors, had cautioned us about this organism, saying that it causes a condition called "shoestring root rot" in many species including chestnuts. He added that it is a particular problem in clear-cut areas where the stumps remain, as in the orchard I manage. The board voted to have the stumps removed last fall; we hope this will mitigate the problem. We have noted that, in the cases where the main stem of a tree has apparently been killed by *Armillaria,* shoots have sprouted. Since *Armillaria* is supposed to kill the root of a tree as well, we wonder if this could be due to partially resistant trees, a less virulent strain of the fungus, or other reasons.

While *Cryphonectria parasitica,* the blight organism that all but wiped out the American chestnut completely, and *Armillaria sp.* are problems, the challenges to managing a successful breeding orchard are not limited to fungi; the animal kingdom has its share of threats. Japanese beetles do not restrict themselves to roses. They selectively skeletonize chestnut leaves but have not been a major problem here. Deer, of course, enjoy browsing on tender young shoots and are a particular threat to trees that are still becoming established. A mixture of egg, urine, and water, sprayed on the trees has helped fend off deer. There has been a minor porcupine problem here; they ate some bark while snapping off a few branches.



Far more serious is the ubiquitous vole. These rodents do not limit themselves to very young trees but will also attack more substantial ones, stripping the bark off so eagerly that trees are sometimes girdled and killed. This activity is largely limited to the winter months when snow provides the voles with cover from predators. There is a long, low spot in plot #2, established in 2008, where we piled brush. Recently we noticed severe vole damage in trees planted adjacent to this pile, apparently because voles find it to be a comfortable home. Multiple preventative measures must be used to mitigate the vole problem including plastic collars, keeping the orchard closely mowed, painting the trees with something distasteful, and encouraging predators. So far, all that has been used in this orchard have been collars and mowing; we will be trying paint in the coming season.

Adequate water is necessary, particularly while young trees are establishing themselves. However, not since the first year (2006) have I found myself hauling water in 5-gallon buckets from the nearby brook. Other years have had enough rainfall and lack of water was certainly no worry in the summer of 2009. Chestnuts do not appreciate wet feet, though, which is why we stacked brush in the low area of plot #2; we could not plant there anyway, since there was standing water not far below the surface. I apply 10-10-10 soluble fertilizer to each tree in the spring. This is to assure fast growth needed for the trees to achieve sufficient girth for inoculation after 6-8 years. This does not come without a price; branches frequently break off because of wind or snow load and a couple of fairly large trees broke off at the base. It seems fast-growing wood is weaker than that which takes a more natural pace.

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THE ME-TACF ORCHARDS

ME-TACF Orchard (Town)	Line	Date Planted	Inoculated
Merryspring (Camden)	Clapper	1999, 2002	yes
Groce (Union)	Clapper	1999	yes
Highmoor (Winthrop)	Clapper	2002, 03, 04	
Mosher (South Hope)	Clapper	2006, 2008	
Deer Hill Farm (Weeks Mills)	Graves	2002	yes
Korth (Center Lovell)	Graves	2004	
Reed (Unity)	Graves	2004	
Dutton (Morrill)	Graves	2005, 2006	
Veazie (Veazie)	Graves	2005	
Penobscot Exp. Forest (Bradley)	Graves	2006	

Know your Mother (Tree)!

In case you were wondering where our Maine mother trees are located:

Rockport	Orono
Camden	Wilton
Yarmouth	Belfast
Jay	Frankfort
Buxton	Sunset
Atkinson	Paris
Dixfield	Temple
Dover-Foxcroft	Pownal
Topsham	Limerick
Dexter	Nobleboro
Leeds	Winthrop
Sebec	Mariaville
Freedom	Albion
Morrill	Montville
Exeter	South Bristol
Bradford	
Center Lovell	

Our **American Chestnut Tree Inventory** for Maine is continuing. If you have, think you have, or know of any American chestnut trees on your property or in your area, please let us know. We are trying to document the current American chestnut range. You can contact us at:

Glen Rea 207 945-6945 glenrea42@msn.com
Eric Evans 207 236-9635 belevans@roadrunner.com
Jay Lindsey 207 377-6174 jlindsey@fairpoint.net

We are also online at:

ME-TACF website: www.me-acf.org
ME-TACF blog: www.metacf.wordpress.com
ME-TACF newsletter: TreeUrchin@gmail.com

Bob BaRoss and Jeff Leach recording data on Jeff's tree in Fryeburg July 2009. It is 65' tall and has a dba of 18". Biggest in western Maine! (RWillby photo)

ME-TACF Multi-Purpose Form
Maine Chapter of The American Chestnut Foundation

VOLUNTEERING We need your help! As our ME-TACF Chestnut breeding and education program grows and our activities expand, we very much need the assistance of our volunteers. Whether or not you have a particular talent or skill, we would like to hear from you. We will provide training!

I like the following kinds of tasks (check all that apply):

___Outdoor work ___Work at events such as fairs ___Give formal presentations ___Telephoning

___Work with children ___Help with mailings ___Writing ___Fundraising ___Library Research

___Organizing ___Other (please specify)_____

I am available (check all that apply): ___Weekdays ___Weekday evenings ___Weekends ___On short notice

I have experience/expertise in: _____

MEMBERSHIP Your membership is important to The American Chestnut Foundation. When you join, you express your commitment to our mission of restoring chestnuts to Maine forests. Membership in TACF includes subscriptions to its six issues per year Journal of The American Chestnut Foundation, and membership in the Maine Chapter. Other membership benefits include discounts on Maine-native American chestnut seeds and seedlings and the opportunity to purchase blight-resistant seeds and seedlings when they become available. We offer three Maine-native seedlings with each new membership.

Your membership in TACF supports all the Foundation's breeding, research, education, and publicity projects. For TACF membership support levels of $40 or more, $15 is forwarded to the Maine Chapter. Please consider making an additional contribution to the Maine Chapter to support our mission to produce blight-resistant American chestnut trees most adaptable to Maine's forests by selecting a ME Chapter Sponsorship Level in the right-hand column below. Thank you.

TACF Membership Support Levels

Enclosed is my TACF membership support of:

___Gold Leaf, $1000
___Silver Leaf, $500
___Bronze Leaf, $250
___Green Leaf, $100
___Regular, $40
___Other, $_____

Make **TACF Membership** check to: ***TACF***

TACF Membership Total $_____

Maine Chapter Sponsorship Levels

My contribution to the Maine Chapter :

___Breeding Orchard, $1000
___Mother Tree, $500
___Seedling, $100
___Seed, (other) $_____

Make **Maine Sponsorship** check to:
Maine Chapter -TACF

Chapter Sponsorship Total $_____

Total Amount Enclosed $_____

CHESTNUT SEEDS AND TREES FOR SALE

Indicate your interest in buying the following native-Maine American chestnuts by checking your selection(s). We will contact you for payment later. We offer a 30% member discount. (All shipping costs are extra).

___$20 for ten Seeds ___$10 per Seedling in pot ___$40-80 for 4-8 ft. tree in root-bags

Name: _____
Address: _____
City/State/Zip: _____
Telephone: _____Email address: _____

Please return this form to: ME-TACF; c/o Glen Rea; 231 Buck St.; Bangor, ME 04401 THANKS!

To return this form, please fold and tape closed. If you are sending a check, please use an envelope. Thanks!

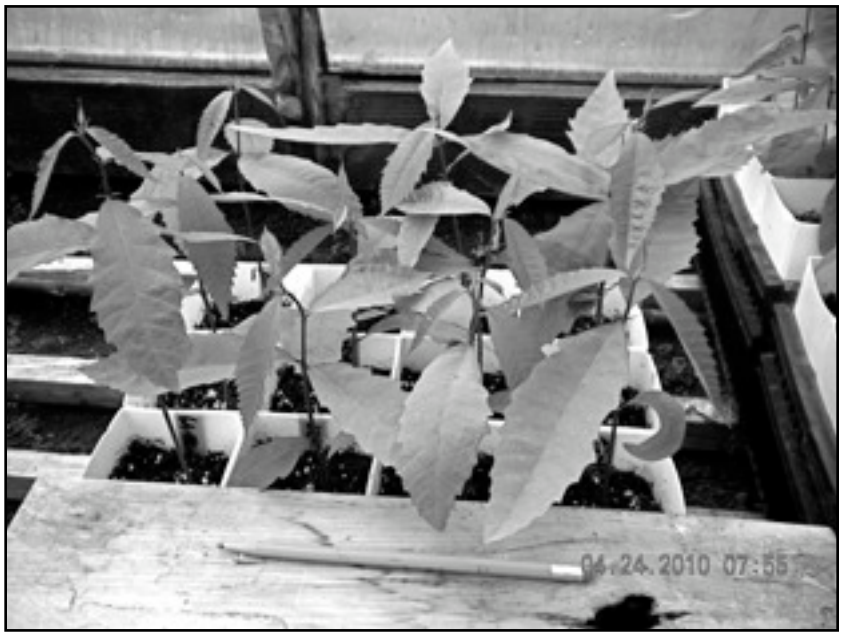
Place
Stamp
Here

Maine-TACF Membership
c/o Glen Rea
231 Buck Street
Bangor, ME 04401

Managing a Chestnut Orchard (continued from page 5)

We are looking forward to inoculating plot # 1 in another 2-3, after the trees are of sufficient size. That is, we will be challenging them with the blight fungus, waiting to see how they react, and culling out those with insufficient resistance. We expect to keep roughly 10% of the third backcross trees so they will breed with each other and provide seed for seed orchards. A few of those trees will be fully blight-resistant and will provide seed for the restoration project, where TACF's ultimate goal of restoring the American chestnut to its natural range will be realized.

text by Harold Mosher
photos by Eric Evans



Spring 2010 American chestnut seedlings ready to go! (EEvans photo)

Maine American Trees and Seedlings for Sale!

We have a small number of 5-7 foot tall chestnut trees in 12" root bags, for $10 per foot of height. Get them now before the price goes up as they grow this spring and summer to 8-12 ft. tall**!**

We also have:

New seedlings in 1-qt. pots for $10 apiece.

10% discount for two or more of any size, and 30% additional discount for members. As always, we offer three new seedlings free with new or re-joining memberships.

Shipping or delivery is extra cost.
Contact Eric Evans for purchase.

Finance And PEM Committees Reports

The weak economy has affected Maine in many ways since two of the largest industries in the state are tourism and forest products. This means that fewer people are employed and consequently must reduce personal expenses. This is reflected in our membership and our membership has decreased over the past two years. When we contact people as to why they are not renewing their membership, the answer is almost always the same: "we really support the efforts toward restoring the American chestnut to the woods of Maine, but can't afford the extra expense at this time." We encourage you to maintain your membership if at all possible but are realistic about the economic conditions. A possible way of maintaining your membership is when people ask you what you would like as a gift for a special event such as birthdays or Christmas, you could mention a renewal of membership in TACF. Also when you are thinking of a gift for someone, a $40 membership in TACF could be a nice gift for some people.

The Maine Chapter is on solid financial ground, but some members have expressed concern that the increasing number of orchards will require unknown additional expenses in future years. Orchard expenses have varied from place to place. To address these concerns, a budget planning session is scheduled for May 8. Due to the recession, we had some concern last year about declining membership, but so far this year things look better.

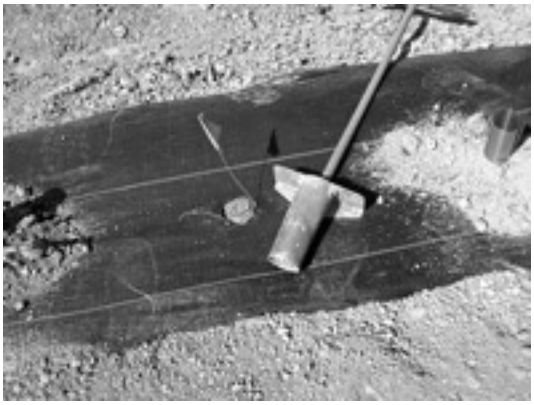
We welcome Ray "Bucky" Owen to our Board of Directors and he has indicated he would be willing to serve on this committee. Thank you "Bucky" and we look forward to working with you.

PEM and Finance Reports
submitted by Joseph Conwill and Glen Rea

Some Photos from the Meadowview Method

Left: A planted orchard

Right: A seeded and marked planting with hole-making tool.



Photos courtesy of Eric Evans

Left: Seeds, marker flag, aluminum rodent guard flashing.

Right: A completed and protected Chestnut seed planting.

Science Report (continued from page 4)

We depend on our members and other volunteers to accomplish all the jobs that I have described. So, we are asking everyone reading this to picture a future with thriving American chestnuts regaining their place in Maine's forests. Then fill out and return the volunteer-membership form (page 7) so that we know how and when to call on you to help with this exciting work. If you are already on our volunteer list, please pass this on to a friend with whom you want to share this work. Here is a list of the major jobs for next coming year. Exact dates depend on Mother Nature. If you send in a volunteer form on page 7, you can simply refer to the following letters:

A. Inoculate trees in Monmouth orchards with live fungus to test for blight resistance: 10-15 people one day in June.

B. In Merryspring orchard in Camden and Deer Hill orchard in Weeks Mills: rogue trees, cut and haul to burn piles — 5-10 people one day in June.

C. Manually pollinate several native American chestnut trees: teams of 2-3 people one or two half-days in July in each location to be announced.

D. Routine tree care and measurements in 10 breeding orchards in Monmouth, Camden, Hope, Union, Unity, China, Lovell, Veazie, Morrill, and Bradley: 4-6 people one day in June and October in each location.

E. At the Common Ground Country Fair (MOFGA, Unity) at our booth, spread the word to fair-goers about the return of American chestnuts: 18 people in 3-hour shifts, September 24-26.

F. Harvest BC3-F2 seeds in Camden and China orchards: 5 people one half day in October.

G. Publicity committee chair: one person to take responsibility for press releases, media articles, presentation coordination, etc.

H. Volunteer coordinator: one or two people to maintain volunteer lists and assist work team leaders in staffing work parties

I. Other publicity and education-related activities year-round: volunteer-coordination, chapter annual meeting production in October, regional meetings, presentations at fairs and club meetings, chestnut growing and demonstrations for school groups, upgrade slide shows and booth displays, etc.

Restoration Plans

Now that the TACF research orchards in VA and PA are beginning to produce highly-blight-resistant chestnuts, and Maine and several other state chapters will be following suit in the next 10 years, the Foundation is developing plans to re-introduce chestnuts back into the forests throughout their original range from Maine to Mississippi. Each year TACF will plant increasing numbers of strictly controlled and monitored 1-acre forest test plots, each with 200 B3F3 seedlings to begin evaluating how well they grow and withstand the threat of blight in the wild. In the next several years, the annual B3F3 seed production in VA and PA will climb into the 100,000s--way more than is needed for the formal testing. In the next 10-20 years there could be enough B3F3 seeds to make a one-acre planting in every town in the chestnut range. In Maine we could start with B3F3 seeds from VA, then PA as they become available, then the B3F3 seeds from our own seed orchards starting about 8 years from now. The logistical challenges and ecological complexities of this project are staggering, to say the least. It is certainly the largest restoration ever attempted--nothing less than the reversal of the worst ecological disaster in the history of our country. The TACF Board and Science Cabinet discussed some draft plans at our meetings in Virginia last month. It is important to understand that the B3F3 seeds that will be available in the first years of restoration are the product of only the first of several lines of research and breeding by TACF, and that the success of restoration will depend on continued research and breeding concurrent with thousands of forest test plantings. As the breeding program and restoration plans continue to evolve, I will post the news here and on our website (www.me-acf.org) and blog (www.metacf.wordpress.com). Are you interested in learning more about how you can participate? Contact me or any of the board members in the list on page 2 of this issue.

text and photos submitted by Eric Evans

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Bob Lindgren (left) discussing chestnuts with a visitor to the ME-TACF booth at the Fryeburg Fair October 2000.