



# THE TREE URCHIN

Newsletter of the Maine Chapter of The American Chestnut Foundation™  
231 Buck St., Bangor, ME 04401  
[Mainetacf@gmail.com](mailto:Mainetacf@gmail.com) 207.945.6945

September, 2013  
Volume 16 No. 2

## President's Letter

By Glen Rea

As I was sitting down to write this message, I knew we had experienced a good year in our breeding program and then I checked my email and discovered a new donation of over \$11,000 from a national foundation, the Betterment Fund, which is to be used for our orchards. A great year that just gets better.

We started off the year with a good budget, based on the "zero base budget" approach, and this has led to a greater control and reporting of our expenses and also income. As you will read in our Breeding Program Update on page 5, this spring saw us planting new seed orchards at Searsport, Winthrop, and Stetson; plus a new breeding orchard at Hope, Maine.

The rainfall has been good this year and spaced rather evenly so there was no need to irrigate our orchards. The interns for this summer have been Ethan Burke and Robin McMahan and they have done a good job in assisting us. Ethan is the brother of last year's intern Morgan Burke who returned this past spring to help with the prep work at Stetson.



Summer intern Robin McMahan at Huff Hill



Summer intern Ethan Burke stands beside a two-year-old tree at the Huff Hill seed orchard.

This fall we hope to have a big harvest at Highmoor and this could help fill the Clapper orchards at Stetson (PCCA), Searsport (SWOAM) and Phippsburg (TNC). It is possible that we could be planting as many as 14 different Clapper lines next spring, but we need a very good harvest. We will need a lot of help!

Our finances are in good shape and it is exciting to see how much we have accomplished with volunteers and interns.

Thanks to Roger Willby for his article about the historic range of American chestnuts in Maine. Roger has an extensive list of sources he researched for this article, which you can get from him at [RWiredraw@aol.com](mailto:RWiredraw@aol.com). We also thank Roger for his interview with Doug Stark and Alan Markert for his report on grafting. Thanks also to Jeanne Siviski, to Rob Stenger for his work on our web site, Jim Steadman for building a storage shed, and to everyone else who has contributed to the work of the Maine chapter through their talents, donations, their time, and their hard work. I'm glad you are part of this important process.

Annual Meeting Notice  
November 2 at the Newport (ME)  
Cultural Center.  
See page 9 for details.

## Meet the Board of Directors

By Jeanne Siviski



Eric Evans' first encounter with the American chestnut occurred when breaking the rules by wandering away from the group as a Boy Scout on a Blue Ridge Mountain fieldtrip. Crawling through some rhododendrons, he came out at an eerie field of what appeared to be "telephone poles that were exceedingly tall." After keying out the leaves and reading about the blight, he realized what he had found. Later in life, he went on to help found the Maine Chapter of The American Chestnut Foundation.

An Ohio native, Evans earned a major in biology at what is now known as Case Western Reserve University and a master's, also in biology, from Stanford University. He managed an insulation company from 1978 to 1982 and built energy efficient homes for fourteen years, including a Maine Housing Authority Solar Energy Efficient House Design Winner. While working at his next career, compost testing and research, he ran across an article about American chestnut tree pollination experiments being conducted by Welles Thurber in Camden. He called Thurber up, expressing an interest in American chestnuts, and a collaborative effort between the two began. The Ice Storm of 1998 with its devastating effect on Maine trees convinced Thurber and Evans it was time to form a Maine Chapter.

Now semi-retired, Evans has worked as an Energy Advisor since 2010 at Evergreen Home Performance LLC. He lives in a solar-powered home in Camden with wife Laura and sponsors a 10 member communal garden group. As Vice-President and Breeding Coordinator at ME-TACF, Eric's endless efforts are the backbone of this organization.

By Ann Rea

Board member Peter Kliem was born in Berlin, Germany in 1938 and came to the United States as a teenager. While living in Lewiston, Maine, with an uncle and aunt, Peter attended Bates College and graduated with a BS in chemistry. He became an American citizen and attended Northeastern University, where he received a master's degree in chemistry.

Peter worked for the Polaroid Company for 38 years where he became Senior Vice President for New Business Development, Senior Vice President of Electronic Imaging, and Senior Vice President, Research and Development. At Polaroid, he initiated and executed strategic alliances with major corporations in the US, Europe, and Asia. Becoming interested in biotechnology, he left Polaroid to become founding CEO of Enanta Pharmaceuticals, Inc., and SelectX Pharmaceuticals, Inc. For eight years he was chairman of PB Diagnostic Systems, a joint venture company between Polaroid and Hoechst (Behringwerke).

Now retired, Peter lives in Greenville with his wife Ann Wolff Kliem, where he is active in the community and with the woodlands he owns in the area. The possibility of growing chestnuts on that land led him to The American Chestnut Foundation.

### Maine Chapter Directors

Glen Rea, President

Eric Evans, Vice President

Charlie Hudson, Secretary

Joseph Conwill, Treasurer

David Allen

Al Faust

Aaron Grim

Peter Kliem

Jay Lindsay

Alan Markert

Harold Mosher

Ray "Bucky" Owen

Ann Rea

Nick Rockwell

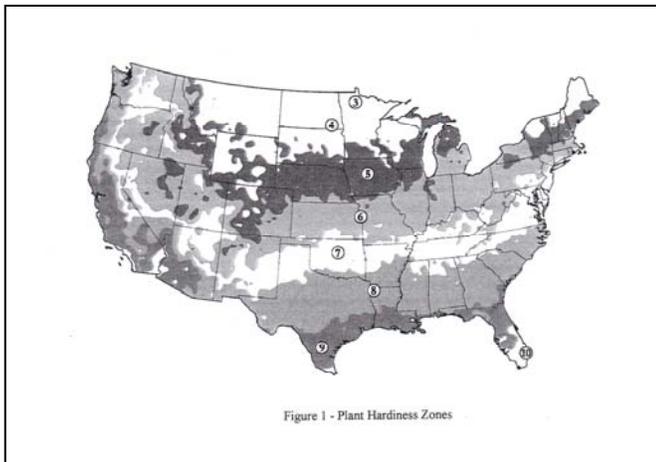
Larry Totten

Roger Willby

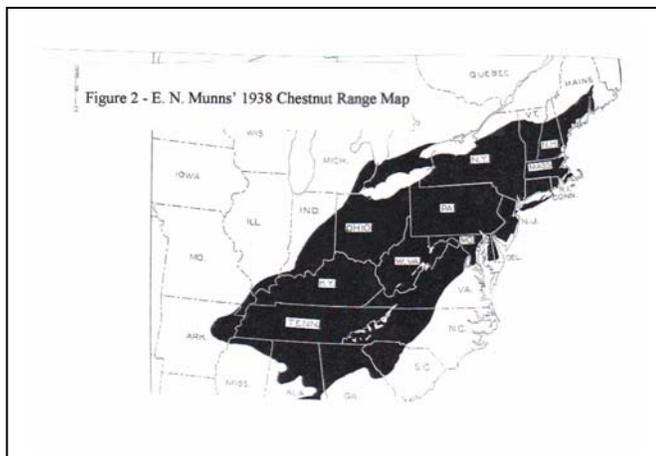
## Where Did American Chestnuts Grow in Maine?

By Roger Willby

Prior to the chestnut blight, American chestnuts grew in southern Maine approximately in Plant Hardiness Zone 5 (see Figure 1, below).

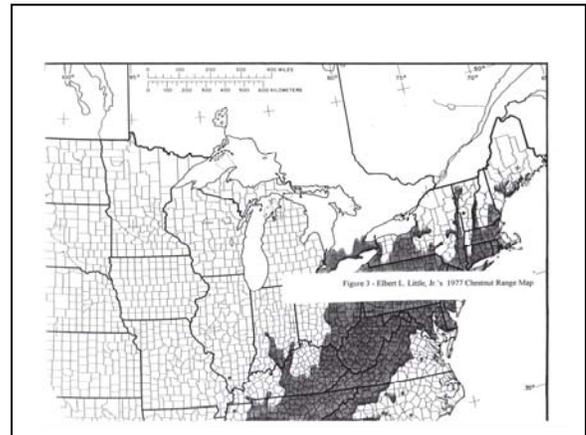


E. N. Munns of USDA mapped the range in 1938 (see Figure 2, below).



The blight, which was introduced into the US in the early 1900s in New York City, moved outward in all directions and probably arrived in Maine in the 1930's. Isolated areas were hit later. By 1977, Elbert L. Little, Jr., of the United States Department of Agriculture published

range maps in his Volume 4 of *Atlas of US Trees, Minor Eastern Hardwoods*. A two-page map of the chestnut range is included (see Figure 3, below).



In his 5 volumes he made maps of all 758 species of trees in the US. This showed a much reduced area in Maine for chestnuts than Munns' map of 39 years before. He stated that his maps were where a species grows "naturally now", that is in 1977. By 1977 most of the chestnuts were gone due to the blight. Little's maps should be labeled "present range in 1977" rather than "natural range."

The best published map of where the chestnuts originally grew is Munns' 1938 map. But Little's map rather than Munns' is used by TACF and many others to show where chestnuts used to live. Little says he obtained his information primarily from the Forest Service "Station Releases" from local Forest Service personnel who were most familiar with each species. Although he used a wide range of references, he admitted that his maps are not complete and asked for information from the public to update his maps. He did not get his information for his maps from first-hand observation but rather depended on many others for their reports.

*(Continued on p. 4.)*

It is estimated that there were four billion chestnut trees in the eastern US before the blight struck. Today, there may be only one million chestnut trees left in all of the US. That's a reduction of 99.975 %. Chestnuts today really don't have a "range;" only a few remnants of this once important species are left.

No trees in Maine today are of the size found before the blight. The tallest tree we've found is 95 feet tall and is 25 inches in diameter and found in Hebron. The largest diameter tree is 40 inches in diameter and is in Winterport. It's only 55 feet tall. Trees with much larger diameters than that existed before the blight.

Since 1998, when the Maine Chapter of The American Chestnut Foundation (METACF) was founded, we have documented 136 Maine incorporated towns where American chestnuts are growing in Maine. These towns may have only one tree but some have a few dozen. The present trees are contained in a range from Andover to Carrabassett Valley to Sebec to Lincoln and south to Mariaville to Deer Isle and west to Eliot, then along the ME/NH border back to Andover. This is shown in Figure 4, below.

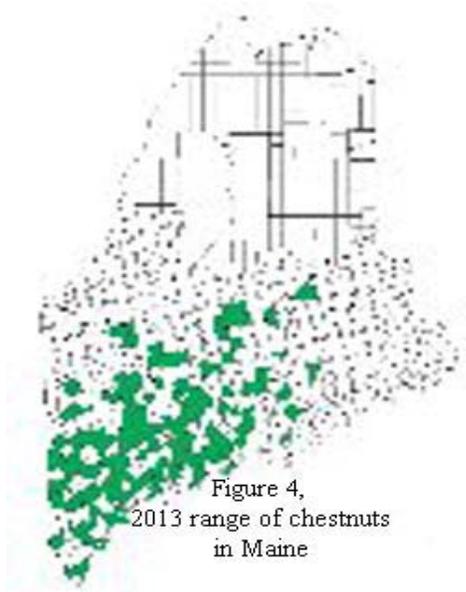


Figure 4,  
2013 range of chestnuts  
in Maine

We have not found trees east of Lincoln and Mariaville. The original range of chestnuts in Maine was at least as large as the range of these few trees that we are now finding.

Since 1998, we have scoured the countryside looking for flowering trees to cross pollinate with the hybrid pollen from TACF's Research Farm in Meadowview, VA. Most of the trees we've found are too young or too inaccessible. But we did find 40 such large trees that we have used as "mother trees" to continue our development of disease resistant chestnut trees. These are from the 136 towns where we found trees.

We were careful not to include other chestnut hybrids and species such as Chinese chestnuts, Dunstan Chestnuts, Lipovsky Chestnuts, Horse Chestnuts and others that were not 100% American Chestnuts.

Throughout this area from Andover to Lincoln to Deer Island to Eliot north along the ME/NH border are a very few scattered trees in almost every town and city in Maine in that area. Many are small and will soon be reduced to stump sprouts or die completely but a few are 30 to 95 feet tall and produce nuts. If there are other flowering trees nearby then they may cross pollinate and then will produce fertile nuts. METACF continues to look for other living chestnut trees before they all permanently die out.

The time is coming when we will be planting blight resistant trees in quantity in their original range now that we in METACF know where the chestnuts grew originally.

#### Bibliography:

1. Munns, E. N., 1938. THE DISTRIBUTION OF IMPORTANT TREES OF THE UNITED STATES, US Dept. of Agri. Misc. Publ. 287, 176p., 170 large maps, introduction and index, 9 1/2" x 11 1/2".
2. Little, Elbert L, Jr., 1977, ATLAS OF THE UNITED STATES TREES, MINOR EASTERN HARDWOODS, VOL. 4, US Dept. of Agri. Misc. Publ. 1342, 186p., 166 large maps, references and index, 9 1/2" x 12".
3. TACF Website chestnut range map-about the same as Little's 1977 map
4. Wikipedia chestnut range map is a copy of Little's 1977 map.

## Breeding Program Update – August 2013

By Eric Evans, V.P. and Breeding Coordinator

We are making steady progress in our backcross breeding program to develop blight-resistant American chestnuts for reintroduction into the forests of Maine.

On April 13th of this year we planted our 12th – and final – third- backcross orchard on Mary Bok's farm in Hope. Eight volunteers braved the cold and mud to plant 240 seedlings from Maine mother trees in Augusta, Bowdoinham, and Wytotitlock.

In the following four weeks several dozen volunteers planted 7800 seeds into our seed orchards in Hartland, Stetson, Winthrop, and Searsport. These were seeds that we harvested last fall from our breeding orchards in China, Union, and Camden This brings our total seed orchard tree number to nearly 14,000 representing 11 of our 40 breeding lines. This fall we expect to harvest seeds from 14 more breeding lines at Highmoor Farm in Monmouth for planting up to an additional 19,000 seeds into our Phippsburg, Stetson, and Searsport seed orchards next spring.



*Cub Scout Pack 428 helped plant seeds at Huff Hill in Hartland this spring. Photo courtesy of Mike Brooks.*

In June we inoculated about 120 trees in both the Mosher and Highmoor orchards, to begin the process of evaluating their blight-resistance. The trees that we select from this process will produce seeds for planting in our seed orchards starting in 2015.

We started a new orchard management feature this year – electric fences. In spite of a combination of deer repellents, dogs, hunting, and hope, deer have browsed our chestnut seedlings in nearly all our orchards, so we installed solar-powered electric fences around our three youngest backcross orchards (all in Hope) and our seed orchards in Winthrop and Stetson.

### Volunteers Needed

We will need big work parties to plant and tend our new seed orchards during the next year. Please consider volunteering, and contact Glen Rea in Bangor at 945-6945 or Eric Evans in Camden at 236-9635, for the following work:

- Harvesting chestnuts from our orchards in Monmouth and Camden, last week of September.
- Planting the seed orchards in Phippsburg, Stetson, and Searsport in late April and early May.
- Orchard maintenance throughout the summer at all of these sites – weeding, watering, feeding, and record-keeping.

You need not be a chapter member to volunteer, but membership helps to support our work. Please consider joining the Maine Chapter of TACF.

### Wild Chestnut Seeds and Seedlings for Sale

Each year we collect seeds from several of the few remaining native American chestnut trees in Maine. We have many uses for these seeds, including donating to chestnut research, classroom and outreach projects, forest plantings, rewards to our volunteers, and sales to support our breeding program. We start seedlings in March in 1-quart pots for sale throughout the summer, and as rewards for our volunteers. Please contact Eric Evans if you want to buy native chestnut seeds and seedlings.

## VISITING DOUG STARK

By Roger Willby

On June 17, I visited Doug Stark, whose knowledge of American chestnuts in Maine was crucial to the work of the Maine chapter. It took quite a bit of detective work to find him but after much searching and talking to many of his friends and relatives I found him at Maine Veteran's Home on 310 Cony Rd. in Augusta.

Doug was the Forest Pathologist at the Maine Forest Service in Augusta from about 1958 till about 1988 when he retired and Clark Granger took over the position. Doug had a strong interest in American chestnuts and beeches. He compiled a list of 130 American chestnut trees with location in Maine and description that he gave to Well Thurber in the 1990s. That list was the foundation for ME-TACF's search in the early 1990s for mother trees. This put us on the fast track for getting started in the TACF Restoration Program.

I was particularly interested in finding out if Doug was the person in Maine who submitted the information on the range of the chestnut as shown in Elbert L. Little's 1977 book of maps of tree ranges published by USDA that included in volume 4 the American chestnut's national range. That map is used by TACF and many others and is called the "natural range" for the tree. That map shows chestnuts in about 1/6th of the area in Maine that we are finding trees today in Maine. Doug said that he made many submittals to Washington but couldn't remember if his information was used in that book. Doug probably had more information on Maine chestnuts than anyone else in Maine

Have you seen our new website?  
It is available at:  
<http://www.me-acf.org>

Thanks to Rob Stenger for all he has done to develop it!

Doug seemed to enjoy talking about chestnuts and the people he worked with on the chestnut problem including: Clark Granger, Wells Thurber, Neil Nash and Louis Lipovsky. He particularly remembered trying to find a large chestnut tree in the Town of China. He seemed to enjoy talking about Wells' effort to save the trees at Harkness Preserve in Camden and two large trees at Auburn he located.

I called Clark the next day and posed to him my question of the Little map. He didn't know where the information came from but recommended I visit the Entomology Lab Library of the Maine Forest Service (207-287-2431) at 50 Hospital St. in Augusta and look at the "Forest Commissioner's Reports" for the years 1900 to 1971.

Doug is 86 and suffering from Parkinson's Disease but is still able to carry on a conversation. I'm sure that he'd appreciate hearing from METACF people and talking about chestnuts (1-888-694-4664)

## For Your Bookshelf

Rutkow, Eric. *American Canopy: Trees, Forests, and the Making of a Nation*. New York: Scribner, 2012. The remarkable story of the relationship between Americans and trees across the entire span of our nation's history.

Freinkel, Susan. *American Chestnut: The Life, Death, and Rebirth of a Perfect Tree*. Berkeley: University of California Press, 2007. The dramatic story of the stubborn optimists who refused to let the American chestnut go. A compelling weave of history, science, and personal observation.

Barton, Andrew M., et al. *The Changing Nature of the Maine Woods*. Durham: University of New Hampshire Press, 2012. A natural history of Maine's forests, how and why they vary in different parts of the state, and the ecological forces that have affected them over the years.

## Membership Form Maine Chapter of The American Chestnut Foundation™

### WHERE DOES YOUR FINANCIAL SUPPORT GO?

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 Restoration chestnut trees most adaptable to Maine's forests by selecting a Maine Chapter Sponsorship Level in the right-hand column below. Thank you.

Membership in TACF includes a subscription to The Journal of The American Chestnut Foundation and enrollment in the Maine Chapter.

TACF and ME-TACF are 501©3 non-profit organizations. Except for the member services (valued at \$15) of your membership dues, your gifts are tax deductible.

Send these forms and your check(s) to: ME-TACF, 231 Buck Street, Bangor, ME 04401. For additional information, you may contact us at [Mainetacf@gmail.com](mailto:Mainetacf@gmail.com) or 207.945.6945.

Your name \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City/State/ZIP \_\_\_\_\_

Telephone \_\_\_\_\_

E-Mail \_\_\_\_\_

<p><b>JOIN The American Chestnut Foundation</b></p> <p><i>Enclosed is my membership support of:</i></p> <p>_____ Silver Leaf, \$1,000</p> <p>_____ Bronze Leaf, \$500</p> <p>_____ Chestnut Leaf, \$300</p> <p>_____ 3-year \$120</p> <p>_____ Regular, \$40</p> <p>_____ Student, \$15</p> <p>_____ Other, \$ _____</p> <p>Make membership check to: TACF</p>
--

<p><b>Maine Chapter Sponsorship Levels</b></p> <p><i>Enclosed is my contribution to the Maine Chapter of TACF:</i></p> <p>_____ Sapling, \$5,000+</p> <p>_____ Seed, \$1,000-\$4999</p> <p>_____ Blossom, \$101-\$999</p> <p>_____ Leaf, \$10-\$100</p> <p>_____ I want my contribution to Be used for seed orchards</p> <p>Make Maine sponsorship check to: Maine Chapter -- TACF</p>
--

## Maine Chapter, The American Chestnut Foundation™

### Volunteer Form

We need your help! As our program grows and our activities expand, we very much need the assistance of our members and friends. Whether or not you have a particular talent or skill, we would like to hear from you. We will provide training!

Name \_\_\_\_\_

Address \_\_\_\_\_  
 Street City State Zip Code

Telephone number \_\_\_\_\_  
 Home Work or Cell

E-mail address \_\_\_\_\_

I am available (check all that apply):

- Weekdays
- Weekday evenings
- Weekends
- On short notice (For some tasks, such as pollination and harvesting, we are at the mercy of Mother Nature and therefore cannot plan very far ahead.)

I would like to help at the following orchard(s):

- Basin Preserve seed orchard, Phippsburg
- Bok breeding orchard, Hope
- Highmoor breeding orchard, Monmouth
- Huff Hill seed orchard, Hartland
- Korth orchard, Lovell
- Mosher breeding orchard, Hope
- Merryspring breeding orchard, Camden
- Rowe breeding orchard, Hope
- Dutton breeding orchard, Morrill
- Reed breeding orchard, Unity
- PCCA seed orchards, Stetson
- Bradley breeding orchard
- Veazie breeding orchard
- SWOAM seed orchard, Searsport
- SWOAM orchard, Winthrop

I would like to help by:

- Working at events such as fairs and garden shows
- Giving formal presentations
- Fundraising
- providing secure storage for equipment/supplies near an orchard

I would especially like to do:

- planting seeds/seedlings (spring)
- orchard maintenance
- testing for blight in orchards (summer)
- collecting seeds (autumn)

Please return this form to Glen Rea, 231 Buck Street, Bangor, ME 04401

## NOTICE OF ANNUAL MEETING

The Maine Chapter of The American Chestnut Foundation™  
Will have its Annual Meeting at the Newport Cultural Center\*  
154 Main Street, Newport, Maine

9:30 a.m. November 2, 2013.

### Agenda

9:00 to 9:30 Meet and greet

9:30 Call to order

Minutes of the Last Annual Meeting

Treasurer's Report

President's Report

Breeding Coordinator's Report

Election of Officers and Board of Directors (see page 10)

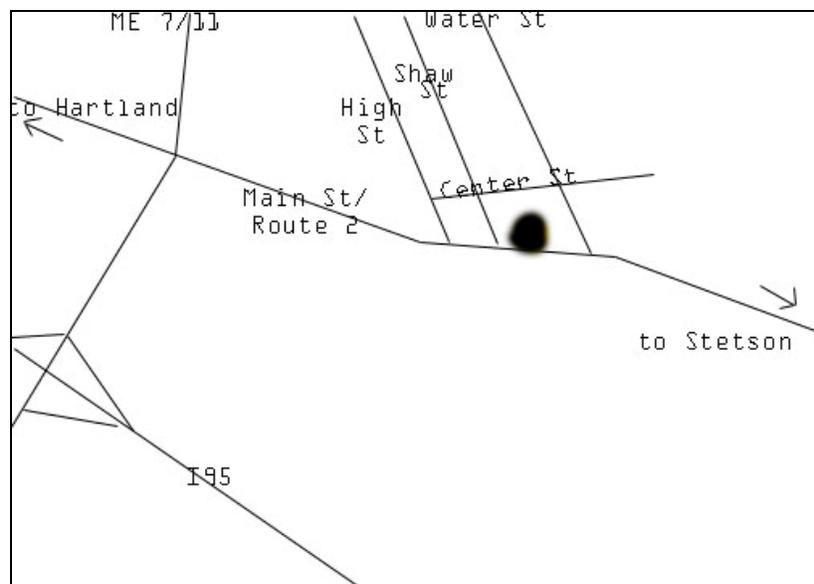
By-Laws change (see page 10)

Other Business

Adjournment

10:30 Program: "Environmental Restoration in Maine: Three Examples"  
Presented by Ray "Bucky" Owen.

After the meeting, there will be a tour of the Huff Hill orchard in Hartland.  
(If you plan to do the tour, bring 2 items of blaze orange clothing per person.)



## Nominating Committee Report

The following Chapter members are nominated for one-year terms as officers of the Maine Chapter:

President: Al Faust  
 Vice President: Larry Totten  
 Secretary: Charlie Hudson  
 Treasurer: Joseph Conwill

These Chapter members are being nominated for three-year terms as members of the Maine Chapter Board of Directors:

Peter Kliem  
 Natalie G. Norton  
 Brian Roth

Jay Lindsay and Nick Rockwell are departing the Board of Directors. We thank them for all their contributions and hope they remain active in the Chapter.

Respectfully submitted,  
 Bucky Owen, Ann Rea, and Larry Totten

## By-Laws Change

At the August 14, 2013 meeting of the Maine Chapter Board of Directors, the Board unanimously agreed to submit to the membership the following changes for the Chapter by-laws:

At annual meetings, a quorum shall be 5% of the current membership.

Presently, 10% of the membership is required for a quorum, but annual meetings are not always attended by that many members since our membership has grown in recent years.

## Adventures with Chestnut Grafting

By Alan Markert

*(Note: Last year, the Journal of TACF published a report by Alan about his work with grafting chestnuts. Happily, he continues to explore grafting. Here are some of this year's activities.)*

Of the numerous chip bud grafts made last summer, such as the one from the Embden grove shown below, roughly 85% survived the winter and sprouted this spring.



The photo below, taken on May 7, shows a sprouting chip bud graft from the largest and now blighted Embden tree.



*(Continued on page 11)*

The next photo, taken on June 23, shows the bud graft above, now grown out into a healthy branch (it is the green branch that exits through the upper left corner of the photo). In effect this is a branch of the big Embden tree, but much more youthful and vigorous than any branch of the original tree.



Some people are surprised to learn that bud grafting is best done in mid-summer, but there are several reasons why this is so. Most important, the bud is already effectively dormant, as it won't sprout until the following spring, but the rootstock is in metabolic high gear. Healing of the graft union will be very fast because of the warm temperatures and the vigor of the rootstock, while nutritional demands from the bud will be minimal because the bud won't begin to grow out for many months.

The chip bud method of grafting is so simple and reliable it would seem to be the method of choice for capturing the genetics of our best forest trees. If only it were that simple! In one growing season a typical bud on a tree in my yard will become a straight new branch 2 or 3 feet long bearing widely

spaced leaves with plump healthy buds in the axils of the leaves. The big forest trees, in contrast, produce new growth that is extremely short and congested, even in favored sunny exposures. The half inch or so of new growth may bear a half dozen leaves and buds in a crooked tangle in which only the terminal bud is plump and well-formed. Fortunately there is a related method that seems to work very well—the prong graft.

The photo below shows a prong graft, still wrapped in polyvinyl tape, from the state champion tree in Atkinson.



When the graft was made 18 days earlier, the leaf at the base of each bud had been trimmed off, leaving about ½ inch of the petiole still attached to the scion. The fact that the petioles have fallen off but the buds are still green and healthy is a strong indication that the graft has taken. The buds should sprout normally next spring, giving rise to branches genetically identical to the Atkinson tree. These new branches, unlike branches of the mother tree, will be easy to access and will have recovered much of their juvenile vigor and form, growing long and straight with widely spaced leaves and buds.

### Coming soon

September 27–29 Seed harvest at Highmoor Farm in Monmouth. All hands on deck! We need many helpers; contact Eric Evans.

October 18–20 TACF annual national meeting, Herndon, Virginia.

November 2 Maine TACF annual meeting, Newport, ME. Business meeting at 9:30 a.m., followed by a guest speaker. All members and friends are invited.

December 7 Northern New England regional meeting, Urban Forestry Center, Portsmouth, NH. Contact [Kendra@acf.org](mailto:Kendra@acf.org) for more information.

Maine Chapter, TACF™  
231 Buck Street  
Bangor, ME 04401

Return Service Requested

