

Chestnut Mast



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Chinkapin, chestnut's little brother

By Paul Sisco
CC-TACF® Vice-President

This issue of *The Chestnut Mast* features the chinkapin, chestnut's "little brother." The chinkapin (also spelled chinquapin) is a close relative of the American chestnut, but with only a single nut per bur. It commonly has a dwarfed, bush-like stature but attains tree size in the Ozark Mountains of Arkansas, Missouri, Oklahoma and a few other places in the South.

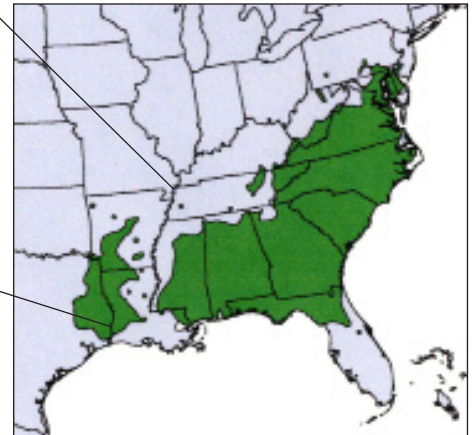
American chinkapins have been divided into as many as seven species, because there is so much variation in leaf shape and plant stature among them. For our purposes, we will include only the two most widely recognized chinkapin

Range map of the Ozark chinkapin, Castanea ozarkensis. Map courtesy of the U.S. Department of Agriculture.



species, Allegheny (*Castanea pumila*) and Ozark chinkapin (*Castanea ozarkensis*). Maps of the range of the two species are shown.

Dr. Joe James of The Carolinas Chapter—The American Chestnut Foundation® and Dr. Hill Craddock of The University of Tennessee at Chattanooga have collected chinkapins from around the South and are trying to breed chinkapins that are resistant



A range map of the Allegheny chinkapin, Castanea pumila. Map courtesy of the U.S. Department of Agriculture.

to both chestnut blight and *Phytophthora* root rot disease. Chinkapins, like their big brothers, the chestnut trees, are susceptible to both chestnut blight and root rot.

Chinkapins are very much part of the culture of the South. The small nuts are said to be sweeter than chestnuts. Cherokees, Choctaws, Creeks and Seminoles, as well as southern white and black kids of later years, munched on them like candy, strung them as beads or used them in games.

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See page 4 for more about chinkapins (left) and chestnuts (right). Photo by Paul Sisco.

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Chestnut restoration



THE AMERICAN CHESTNUT FOUNDATION®

American chestnut trees having been fighting the Battle of the Blight for more than 100 years. Have they surrendered? Have we? No! “Nuts” is the answer. That is B3F3 nuts — now called “restoration chestnuts” — the type that The American Chestnut Foundation® (TACF®) and its state chapters are breeding at Meadowview Research Farms and in chapter orchards.

These nuts are approximately 15/16 American and 1/16 Chinese and resist chestnut blight. An estimated 13,000 nuts were produced at Meadowview last fall with the hope of increased production in 2010. These nuts are used for progeny testing to evaluate the trees and start early restoration efforts.

Pennsylvania will have restoration chestnuts from its chapter orchards in 2013. Other state chapters will produce their own regionally adapted restoration chestnuts within the next five to 15 years.

TACF®, in cooperation with state chapters, is developing a tactical plan with a 25-year horizon to restore American chestnut trees. The draft plan will be presented and discussed further at the board meeting, April 17-18, 2010, at Meadowview Research Farms. TACF® will develop a strategic plan for bringing in partners (federal agencies, state forest agencies, academic partners and non-governmental organizations) to participate in restoration efforts and extend the time horizon beyond 25 years.

Current thinking is that 200 to 500 restoration chestnut seedlings will be planted in plots of one acre or more in areas within restoration cells where chestnut habitat potential is good. Trees planted in each plot will be protected with deer fencing as needed, given soil supplements as necessary and evaluated regularly. Data will be collected and entered into a national database maintained by TACF®. After four to five years of growth, TACF® and state chapters will see how well plantings and plot management are going and make any adjustments.

Although TACF® is still evaluating restoration chestnuts, it is time to start restoration efforts. Actual restoration is a job every bit as large as the breeding program, and there is still much to be learned. Our early “restoration” plantings will focus on testing these

trees for blight resistance and American growth characteristics. If successful, these plantings will represent our early efforts towards restoring the species.

The road ahead is a long one to say the least. Many new recruits and additional funding will be needed to carry out restoration. TACF® and its state chapters must partner with agencies and institutions, both public and private, to bring restoration plans to fruition. State chapters were asked to establish restoration branches (a subset of the chapter in a particular locale) and hold meetings that reach local communities to share the TACF® story and mission. Branches will be a means of recruiting new members and volunteers.

What will our chapter do in 2010 to prepare for the planting of restoration chestnuts?

- Advise TACF® of our orchards' status, and indicate when restoration chestnuts will be produced. We expect the first chapter restoration chestnuts to be available by 2020. Those from Meadowview will be available sooner and distributed throughout the chestnuts' native range.
- Identify restoration cells within the Carolinas, and prioritize several sites with good chestnut habitat potential for planting of forest plots with restoration chestnuts.
- Identify land owners, governmental and private, who will make property available for planting the first few sites identified.
- Determine whether state nurseries will help us grow nuts into seedlings. Some plots may be direct-seeded, while others will be established by transplanting seedlings.
- Identify two restoration branch prospects by April 15, 2010, and schedule organizational events with each throughout the year. We have one scheduled in Asheville, N.C., this summer.

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Photos by Paul Sisco, Doug Gillis, Nancy Pryor, Hill Craddock and Hannah Miller

Sir Speedy Printing, Asheville, N.C.

Restoration of the American chestnut will be exciting and provide great opportunities for many people to be involved. How might you help?

Do you know of people, organizations or communities that might want to be part of a restoration branch?

Please let me know. I can be reached at dgillis001@carolina.rr.com or at 704-542-0627.

Doug Gillis
Spring 2010

Back to Sin City, chestnut style

By Scott Pryor
Edneyville, N.C.

As an adult, I have been to Las Vegas three times. Once attending a convention, the second time as a tourist, the last was on a golfing trip with my buddies. Each visit gave me an opportunity to indulge in a few games of chance.

With each visit, I won a few dollars. You can't win or lose much when you are wagering quarters. The eye-opener for me was the excitement and thrill of gambling. Yes, I said it — gambling. Let's back up some 60 years and investigate the origin of these feelings.

In the early and mid-1950s, the blight killed all the chestnut trees, and this same blight was killing the chinquapin bushes. The chinquapins were dying at a slower rate than the chestnuts but were quite prolific at the edge of my grandfather's pastures in northern Henderson County. During September and early October, we younger cousins were allowed to follow our older cousins and hunt chinquapins.

On most hunts, we would gather enough to fill both front pockets and both hip pockets. My memory of the chinquapin was that it was almost sweet to the taste but very difficult to remove the hull. A large chinquapin was almost the size of a large English pea and round in shape. The students at Edneyville Elementary had several uses for this little nut.

Original Sin

During the fall of my third grade, I learned three major uses for a pocketful of chinquapins. First, the small nut was delicious; we ate them one at a time by crushing them between the molars and spitting out the hull.

Secondly, this little delicacy made a great projectile. It was round and could fly through the air with little resistance.

It had enough weight that if hit in the head by this projectile, it would leave a small pump-knot. It also had a very tough exterior, making it reusable for many chinquapin fights.

The third and most morally corrupting was its use in a game of chance, called Jack-in-the-Bush. The game was frowned on by our teachers, because they claimed that it would teach us to gamble. It did.

The game was played like this: Student A, with a closed fistful of chinquapins, approached student B and stated, "Jack-in-the-Bush."

Student B replied by saying, "Cut him down." Student A then replied, "How

many licks?" Student B's goal was to guess the correct number of nuts in Student A's fist.

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*At the right, Scott, his daughter and grandchildren. Photo by Nancy Pryor.
At bottom left, Scott's grandson, Nolan, bravely poking a chestnut bur. Photo by Nancy Pryor.
At bottom right, Scott with his brother, Mick, and his late father, Paul, at Scott's chestnut orchard in Edneyville, N.C. Photo by Paul Sisco.*



Chinkapins vs. chestnuts

By Paul Sisco
CC-TACF® Vice-President

There are three big differences between the American chestnut and the two North American chinkapin species. The first two depend on being able to see the chinkapin bur and nut.

- Chinkapins usually have only one nut per bur, and it is cylindrical in shape (Fig. 1).
- Chinkapin burs divide into two parts when they open. Chestnut burs divide into four parts (Fig. 2).
- The third difference is clear on the leaves. Chinkapin leaves vary a lot in shape, but all of them are hairy on the back, which gives the back of the leaf a whitish appearance (Fig. 3).



Figure 1, above: The Allegheny chinkapin (*C. pumila*), the most common species found from Louisiana to southern Pennsylvania, compared to American and Chinese chestnuts.
Photo by Paul Sisco.

Figure 2, top left: Chinkapin burs next to a larger chestnut bur.
Photo by Paul Sisco.

Figure 3, bottom left: Leaves of the Allegheny chinkapin.
Photo by Doug Gillis.

Nothing could be finer

Than a picnic & orchard tour in Carolina



Paul Sisco led the tour of the chestnut orchard that Louis Acker and Allie Funk maintain. Trees within the orchard were used in 2009 to produce the chapter's first BC3F2 nuts. Photo by Doug Gillis.

By Doug Gillis **CC-TACF® President**

On a crisp fall day and under clear blue skies, the Carolinas Chapter—The American Chestnut Foundation® held its annual orchard tour and picnic on Nov. 7, 2009, at Louis Acker and Allie Funk's farm in Ashe County.

Louis and Allie made sure folks attending were warmly welcomed. Alfred and Amy Michaels, local musicians, played old time mountain music and sang ballads as people gathered. The music continued during lunch, which was prepared by two local women and served with the help of several people attending the event. The extra help was needed as 45 people came.

Later, Dr. Paul Sisco led a tour of Louis and Allie's chestnut orchard. The older trees were inoculated in the summer of 2008. The results were rated in the fall of 2008 and again in the spring of 2009. The more blight resistant trees with good American characteristics were retained in the orchard for further breeding. Trees with low resistance were culled from the orchard.

Last spring, the chapter used trees in the orchard to produce its first BC3F2 nuts. The BC3F2 nuts are the product of intercrossing two BC3F1 trees (third backcross chestnut trees which carry genes from a Chinese grandparent). It is expected that the intercrossing will strengthen the moderately blight resistant characteristics of the BC3F1 parents.

An article about the production of the BC3F2 nuts appears in the fall 2009 *Chestnut Mast* newsletter, available online at www.carolinas-tacf.org under the "resources" tab.

Forty people, including several youth, attended the orchard tour. Paul selected a tree and pointed out the inoculation areas — two points low on the trunk where the more virulent form of the blight fungus was inserted into the bark and two points higher up where the less virulent form was inserted. Paul pointed out the initial damage caused by the inoculated blight and how the tree grew cancerous material under the bark to contain the spread of the blight.

Paul recognized several chapter growers, including Louis and Allie, as well as Ted Farmer of Ashe County. Ted supplies pollen from large American chestnut trees growing on his property to backcross pollinate trees in chapter orchards.

Judy Coker, co-owner of Cataloochee Ranch in Maggie Valley, N.C., described the orchard she maintains with Judy Sutton, her daughter, and Matthew, her grandson. Visitors learn about restoring the American chestnut through tours and hearing about the family's work.

Scott Pryor described the chestnut orchard growing on property he and Nancy, his wife, own near Edneyville, N.C. Seven of their grandchildren helped plant it.

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CHINKAPIN

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Smaller animals, such as turkeys, prefer chinkapins to chestnuts because they are easier to swallow whole. Storytellers from the Gullah tradition of coastal Georgia and South Carolina wove chinkapin into their tales, and in the famous Tar-Baby Story of Joel Chandler Harris, Brer Rabbit winds up sassing Brer Fox from the safety of a chinkapin log while combing the tar out of his fur.

The only other chinkapin species in the world is in China, the Henry chinkapin (*Castanea henryi*). It also has one nut per bur, but DNA evidence shows it is more closely related to the two Chinese chestnut species, *Castanea mollissima* and *Castanea seguinii*, than it is to either the Allegheny or Ozark chinkapins.

Thus, the distinctive features of chinkapins, one nut per bur and a bur that divides into two parts rather than four, seem to have evolved at least twice, once in China and once in North America.

Dr. Fenny Dane of Auburn University and Dr. Joey Shaw of the University of Tennessee at Chattanooga are analyzing the DNA of chinkapins from all over the South. They have a good collection from the southern mountains, but they are looking for more specimens from the Piedmont and Coastal Plain.

If you know of chinkapin bushes or trees in these areas, please let me know by emailing me at phsisco@gmail.com.



The Henry Chinkapin of China (C. henryi). In typical chinkapin fashion, it has only one nut per bur, and the bur opens into only two sections. Photo by Hill Craddock.

TOUR

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Marsha Gillis, Louis Acker, Doug Gillis and Allie Funk at the orchard tour. Photo by Paul Sisco.

Scott explained the 8-foot high fence installed around the orchard to keep deer away from the chestnut trees.

Don Surrette, who grows a chestnut orchard on his property in Pisgah Forest, N.C., was also recognized. Each year, he helps harvest the American chestnuts along the Blue Ridge Parkway by permit. Some of the nuts are used to grow control trees in orchards which indicate the effect of inoculated blight on pure American chestnut trees.

Russell Regnery explained how he grows hybrid chestnut trees in wooded areas on his property near Highlands, N.C., to test how well BC3F1 seedlings do in a natural environment.

After the orchard tour, Louis and Allie opened their home, which began as a one-room log cabin constructed in 1870 of American chestnut and poplar logs. It was expanded over the next 20 years to include numerous rooms. The walls and ceilings are paneled with American chestnut wood.

To see the home and other pictures from the event, visit our Web site under "photos."



Reminder

Full-color copies of the newsletter will be available online at www.carolinas-tacf.org/resources2.php.



Correction

Pictures of Louis Acker and Allie Funk's farm in last fall's *Chestnut Mast* were taken by Louis Acker. The photos were incorrectly attributed on pages 5 and 8.

Culinary Corner

Chestnuts roasting ... and otherwise

Basic chestnut stuffing

The basic ingredients haven't changed much over the years, but do allow for plenty of creativity, like special touches of ground sausage, veal or pork.

Based on a recipe from Countryside magazine, Dec. 1991.

Ingredients

- 1 to 1 ½ cups butter or margarine (2 to 3 sticks)
- 2 cups finely chopped onions
- 2 cups thinly sliced celery
- 9 cups fine dry bread crumbs, white or whole wheat (about 18 slices)
- 2 teaspoons salt
- 1 teaspoon dried thyme
- 1 teaspoon dried marjoram
- 1 teaspoon dried savory
- 3 tablespoons chopped fresh parsley
- 2 pounds boiled chestnuts, peeled and coarsely chopped

Makes enough for a 12- to 15-pound turkey.

Hungry for more?

For more recipes and nutrition facts, be sure to catch the *Chestnut Mast's* fall edition.

Directions

Melt butter in a large saucepan. Add onions and celery and sauté until limp. Place bread crumbs in a large bowl. Add onion mixture and mix thoroughly. Add salt, thyme, marjoram, savory and parsley, and mix again. Add chestnuts and cognac; mix well.

Lightly stuff mixture into cavity of turkey. Roast at 325° F until stuffing reaches 165° F on an instant-read thermometer.

Note: To boil chestnuts, cut an "X" in each chestnut. Place the nuts in boiling water for 15 to 25 minutes or until tender. Chestnuts are done when the shell starts to peel back and the thin brown seed coat between the shell and the meat rubs off easily. If the seed coat sticks, cook the nuts a little longer and try again.

SIN CITY

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If the guess was correct, Student B won all the chinquapins held in the fist of Student A. If the guess was incorrect, Student A would win the difference between the guess and the actual number in the closed fist.

To guess the correct number, for this little mountain boy, became more exciting and thrilling with each game and each passing year.

Game Over

On the first chinquapin hunt in September of 1957, we found 95 percent of the bushes dead or dying. My grandfather explained to his grandchildren that the blight had killed the chinquapin, just as it had the chestnut tree several years earlier. More than half a century has passed since the last time I played the game.

New Hope

I did experience the excitement and thrill of winning at the quarter slot machines in Las Vegas.

With the progress we're making to develop a blight resistant chestnut tree and chinquapin, you can imagine the excitement and thrill that I will feel when I teach my grandchildren a new game called Jack-in-the-Bush!



Scott Pryor's first gamble was with a pocketful of chinquapins in a game called Jack-in-the-Bush. The goal was to guess the number of nuts in the opponent's hand; the winner took all. Photo by Doug Gillis.



Carolinas Chapter Endowment Fund

Donations can be made at any time.
Make checks payable to "CC-TACF"
and note on check: "For CC-TACF
Endowment Fund."

Mail to: CC-TACF Endowment
Fund, c/o Steve Barilovits
2009 Belvedere Ave.
Charlotte, NC 28205



Above left: For nearly 50 years, Dewey Mahala, 80, has worked on the Ashe County farm where Louis Acker raises sheep and experimental chestnut trees. The blight raged in the 1930s, when Mahala crushed remaining chestnut burs with his bare feet. The nuts inside the burs were so tasty, he said, that "I got up early to pick 'em before the turkeys got 'em."

Above right: Louis Acker on his farm in Creston, Ashe County.

Content and photos by Hannah Miller from her article "The Return of the Chestnut Tree" in Carolina Country, Dec. 2009.



THE AMERICAN CHESTNUT FOUNDATION®

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