IndependentMail.com
ANDERSON, SOUTH CAROLINA

Printer friendly story
Read more at independentmail.com

Reviving the chestnut

Retired Seneca doctor works to restore majestic trees

David Williams

Saturday, July 9, 2011

Joe James has turned from putting his healing hands on broken bones to digging his fingers in the dirt in search of a way to revive the American chestnut.

The retired orthopedic surgeon was captivated by the plight of the American chestnut more than a decade ago when he planted several trees on his 250-acre farm near Seneca.

The young trees died. And the next ones he planted also died.

Dr.James, 64, now toils tirelessly at a task that has only gained regional attention in the last two dozen years.

The American chestnut all but disappeared from the lower Appalachian region at the start of the 1900s, and today is found only in plots in higher mountain elevations and northern sections of the nation.

James' passion for the American icon not only includes its near-demise and restoration, but its place in history.

"The American chestnut is the best tasting of all the chestnut varieties, and it is why the furniture industry moved from the north to North Carolina," James said." Everything eats chestnuts. A hunter once counted 47 chestnuts in the craw of a wild turkey that he had killed."

James, a wide-brim hat shading his face, peers over the glasses that have slipped down his nose. He can talk about chestnuts as easily as most folks discuss the weather.

The American chestnut is no longer the great provider it was when the region was being settled by the country's first colonists.

The magnificent trees that became known as the Redwoods of the East were also providers for Native Americans who lived in the woodlands thousands of years before the arrival of foreign settlers.

"It is a great tree," James said as he conducted a tour of his farm for a group of retirees now living around Lake Keowee in northern Oconee County. His farm, Chestnut Return Farm, is home to his research to create a disease-resistant tree.

The chestnut tree that once dominated the woodlands of the Upstate grew to 17 feet in diameter. "Twelve feet was not uncommon and it grew very tall," James said.

By the late 1700s and early 1800s, the American chestnut had an unprecedented place in the country's culture.

"Fifty-two percent of all lumber board feet at one time were chestnut," James said.

The wood was used to make everything from split-rail fences, bridges and railroad ties to furniture and caskets.

The majority of tannin used worldwide in the leather industry at the turn of the century was from the American chestnut tree.

"People don't realize that the mass exodus from the mountains in the first part of the 1900s was due in a large part to the loss of the American chestnut," James said.

"A woman once said the chestnut tree was a better provider than any man and didn't talk back," said Paul Sisco, a retired geneticist and former regional science coordinator for The American Chestnut Foundation.

Sisco knows first hand of James' desire to find the roots to a problem and fix it.

Sisco is in line for the top position with the Asheville, N.C., based chestnut foundation. "Joe was not going to take the loss of his trees lying down," he said.

In the last years of being a full-time surgeon and part-time chestnut researcher, James met Pat Layton, who in 2001 was the chairwoman of the Clemson University forestry department.

While James tended to Layton's ailments he described to her his efforts to plant chestnut trees at Chestnut Return Farm.

"She had a background in plant pathology and said the reason the trees were dying sounded like phytophthora," he said.

James said he had to ask Layton how to spell phytophtora (phy-toph-tho-ra, pronounced fi-top-thor-ahh).

Also known as root rot, phytophtora was introduced to the state's soil from imported plants for Low Country plantations around Charleston. The plants and the dirt were shipped from Southeast Asia and were used in landscaping and gardens in the late 1700s or early 1800s.

As phytophthora spread, it was not recognized as the prime killer of chestnuts as the disease rapidly killed off chestnuts in the Piedmont and lower elevations of the mountains.

Phytphotera extended to Pennsylvania and lower portions of Kentucky and Ohio, claiming nearly two-thirds of the native range of the American chestnut.

About a century after phytophera arrived chestnuts were becoming victims of another attack, the Chestnut Blight, which soon took center stage for destroying vast forests of the trees, particularly in the lower elevations of southeastern states.

"Blight is spread by wind and not sensitive to cold and virtually covered the entire range of the chestnuts," James said.

The American Chestnut Foundation, founded in 1983, had taken on the mission of restoring the American chestnut tree to its native range in the woodlands of the eastern United States, but concentrated on the blight as the main culprit.

In 1989, a breeding program using a backcross method with Chinese chestnuts and American chestnuts was started by the foundation at the Wagner Research Farm in Meadowview, Va.

But there was more to producing a new American chestnut tree than finding a tree that was just resistant to blight.

James confirmed in 2003 that phytophthora also had to be confronted.

His nearly decade of questioning and testing began with two large tubs for planting seedlings.

In three years James' work grew from 360 seedlings to more than 735 in 2006. From a total of 1,693 seedlings, 1,262 died in the first years of James' research.

But from the survivors, 189 were planted in an orchard and 77 of those have survived.

"Record keeping is the most important thing," James said of his research.

James has often turned to nearby Clemson University for guidance in his quest for a stronger chestnut tree and the American Chestnut Foundation.

James and Sisco have developed a hybrid seedling that is a cross of the Chinese chestnut and the American variety, and it is getting stronger with each new cross.

The Chinese version has certain immunities to phytophthora, but "the Chinese is not the answer, it is not the quality," James said.

A federal grant for nearly $10,500 last year helped fund the latest steps forward in Dr. James' work, the creation of a seed bed in a farm field.

However, the field work is labor intensive and more money from the federal government has not been forthcoming.

James' mission is to create a resistant population of trees for future breeding efforts.

His work has gone from a couple of large tubs, which James' wife, Sandy, had him move from a front yard flower bed to a patch of land beyond the back yard gate.

Now numerous tubs contain the seedlings for cross-breeding purposes, and James hopes the survivors are another step toward bringing the chestnut tree back to prominence in America.

James also realizes his work will not bring the American chestnut back to the level it was more than 100 years ago, but it will benefit his grandchildren — he will soon have 11.

"It's a real treasure," James said of the trees that now are the patients that take his patience.