

# Planting chestnuts on mine land fights blight

By **KENT JACKSON**  
Staff Writer

Abandoned strip mines are a blight on Pennsylvania's landscape, but another type of blight stripped the landscape of chestnut trees.

The trees that once grew on rocky ridge tops throughout the Appalachians succumbed to a fungus, probably imported with exotic plants in Asia.

Researchers first identified the fungus, *Cryphonectria parasitica*, at the Bronx Zoological Garden in 1904. Within 50 years, the chestnuts virtually vanished from the United States.

Now an effort is under way to restore them and mine land simultaneously.

A retired professor and a representative of the federal Office of Surface Mining will explain the idea to Society of Mining Engineers on Thursday in the Hazleton area. The lecture, open to the public, is scheduled for 7:30 p.m. at the Top of the 80s restaurant.

"Surface coal mining in the Appalachian Region very nicely overlays the historical range of the American chestnut trees," David Hamilton of OSM's Harrisburg office wrote in an e-mail when asked about the lecture he will give with Blair Carbaugh of The American Chestnut Foundation.

Carbaugh, a retired biologist from Lock Haven University, said mine lands provide a place for experimenting with American and Chinese chestnut trees that scientists have been crossbreeding.

Their goal is to create a tree that can resist the fungus yet retain characteristics of the American tree, famed in Longfellow's poem about the village blacksmith, beneficial for wildlife and prized by carpenters for its straight grain, height and durability against weather.

The breeding, however, hasn't produced a blight-resistant tree yet.

"That takes about six generations to get to the point where you have a possibility," Carbaugh said.

For now, researchers plant vul-

nerable American chestnut trees on mine land.

They will grow a few years and die, but in the process they will teach horticulturists whether chestnuts can grow on mine land and culm banks — information they will need to know in the future when they have blight-resistant seedlings.

"There's still a lot of trial and error to find out what planting techniques and situations work," Carbaugh said. No two mine lands are alike, so researchers want to know under what conditions the chestnut trees can sprout and where they won't.

Even by dying, the trees help further the effort to save the species.

"It isn't a lost cause even if the tree you planted doesn't survive. It will continue to push up sprouts for years and years, keeping the American chestnut germplasm alive," he said.

Some of the sprouts produce nuts, too, which arborists can use to continue crossbreeding at the foundation's research farm in Meadowview, Va.

Hamilton said thousands of pure American chestnut seedlings have been planted across Appalachia.

"The effort is just getting started in Pennsylvania," he said.

At Tuscarora State Park, Eugene Dougherty of the Little Schuylkill Conservation Club planted chestnut trees as a demonstration project.

"It was vandalized. It wore me out," Dougherty, a Delano resident, said.

Joseph Lankalis, a retired science teacher, took over the plantation at Tuscarora and planted chestnut trees on his land in the New England Valley of Walker Township.

Lankalis said Dougherty planted 106 trees; six of them were first-generation backcrosses, a term for a hybrid of Chinese and American chestnut trees.

Back crossing might develop chestnut trees resistant to the fungus that retain the traits of the American version.



JAMIE PESOTINE/Standard-Speaker

**Joseph Lankalis** shows a hybrid chestnut tree that has grown 30 feet tall at Tuscarora State Park. Planners are testing whether American chestnut trees, wiped out by a blight, can be bred with Chinese chestnut trees to help restore mine land.

"The Chinese produce orchard trees 20 to 25 feet tall, where the Americans grew 150 feet and grew trunks 5 to 8 feet wide," Lankalis said.

One of the trees at Tuscarora is 30 feet tall and shows partial resistance to the fungus.

Growers at first pollinated Chinese and American chestnut trees by covering the female flowers with plastic bags before they bloomed, removing the bags long enough to dab on pollen and then replacing the plastic.

The effort was painstaking.

But they've discovered the crosses produce sterile male trees that still will yield nuts so growers don't have to mask flowers in plastic to protect them from being contaminated by other trees.

Perhaps one in 70 hybrid seedlings will have the trio of genes necessary to resist the fungus, Lankalis said. Growers find resistant trees by inoculating the young trees with the fungus and watching which ones survive the cankers that doom the American chestnuts.

"You plant the nut and wait five

to eight years until it gets big enough that you can inoculate it," Lankalis said.

A demonstration of chestnut tree planting is planned for May 7 at 10 a.m. on mine land near the Schuylkill County Airport.

In Lancaster County, meanwhile, the National Wild Turkey Federation helped pay to plant chestnut trees at Rock House Preserve.

Before the blight, turkeys would fly into trees to eat chestnuts before they fell to the ground. Chestnuts flower later in May than oak trees so they produce nuts even in years when late frosts limit the acorn crop.

"Restoring blight-resistant American chestnuts to the eastern United States would increase forest tree species diversity and supplement the available food items for wild turkeys, white-tailed deer, black bears, ruffed grouse, squirrels and a host of other species," Bob Eriksen, a regional biologist for the turkey federation in Phillipsburg, N.J., wrote in an e-mail.

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