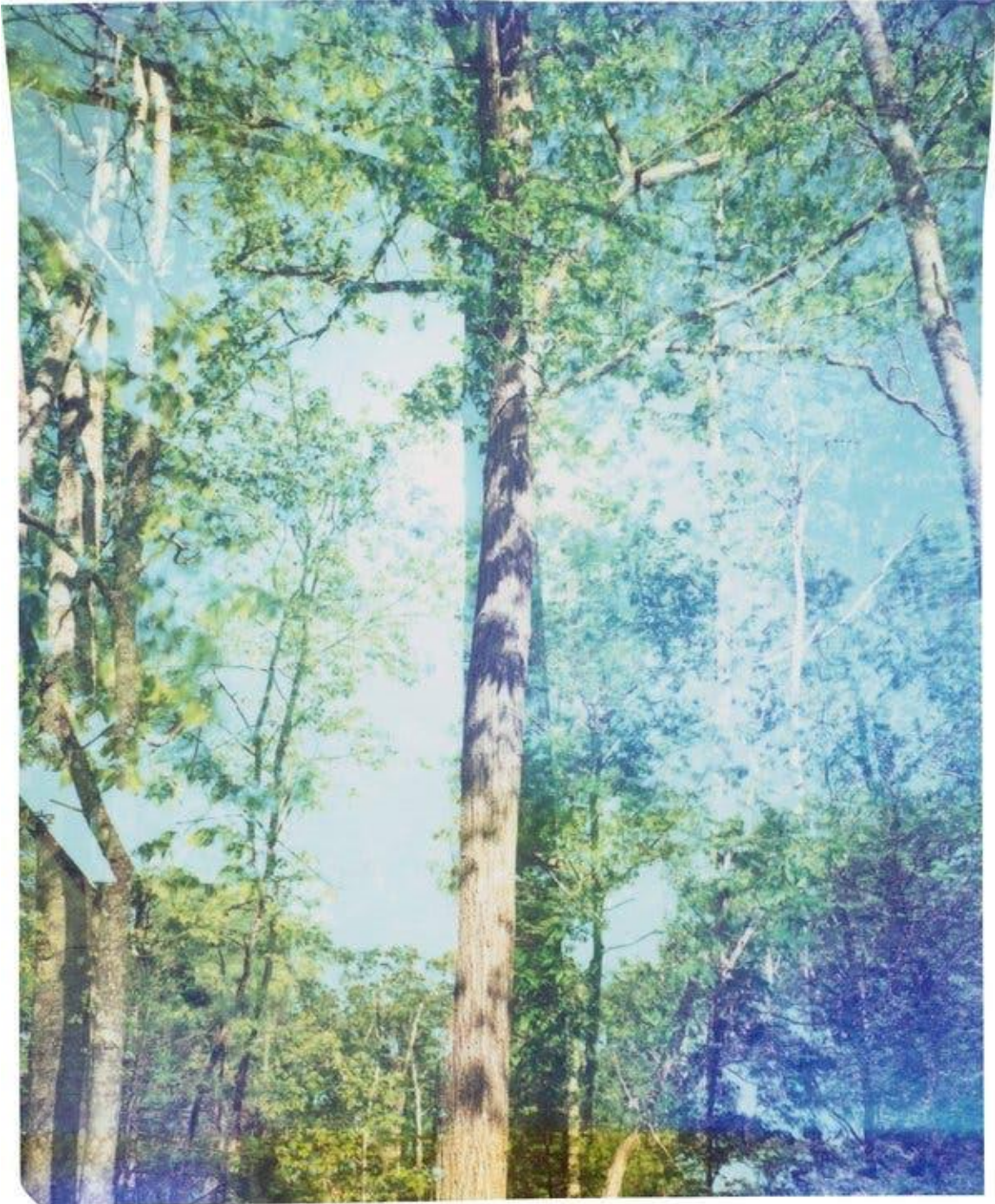


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Can Genetic Engineering Bring Back the American Chestnut?

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An American chestnut near Rockport, Maine.

Sometime in 1989, Herbert Darling got a call: A hunter told him he had come across a tall, straight American chestnut tree on Darling's property in Western New York's Zoar Valley.

Darling knew that chestnuts were once among the area's most important trees. He also knew that a deadly fungus had all but wiped out the species more than a half-century earlier. When he heard the hunter's report of having seen a living chestnut whose trunk was two feet thick and rose to the height of a five-story building, he was skeptical. "I wasn't sure I believed he knew what one was," Darling says.

When Darling found the tree, it was like beholding a mythical creature. "To be so straight and perfect a specimen — it was just outstanding," he says. But Darling also saw that the tree was dying. It had been struck by the same blight that had, starting in the early 1900s, killed an estimated three billion or more of its kind, modern history's first major tree-destroying disease spread by man. If he couldn't save the tree, Darling figured, he would at least save its seeds. There was just one problem: The tree wasn't making any, because there were no other chestnut trees nearby to pollinate it.

Darling was an engineer, with an engineer's approach to solving problems. The following June, when light yellow blossoms spread over the tree's green canopy, Darling filled shotgun shells with pollen taken from the male flowers of another chestnut tree he had learned about, growing an hour and a half's drive to the north. He fired the rounds at his tree from a rented helicopter. (He ran a successful construction business and could afford the extravagance.) The effort failed. The year after that, Darling tried again. This time, he and his son hauled scaffolding up to the chestnut, at the top of a hill, and, over two weeks, pieced together an 80-foot-tall platform. Climbing to the tree's canopy, Darling brushed its blooms with worm-shaped blossoms taken from the other chestnut.

That fall, the branches of Darling's tree produced burrs covered in green spines so thick and sharp they could have been mistaken for cactuses. The harvest was modest, about 100 nuts, but Darling planted some of them and hoped. He and a friend also contacted two tree geneticists, Charles Maynard and William Powell — they go by Chuck and Bill — at the State University of New York College of Environmental Science and Forestry, in Syracuse. They had recently started a low-budget chestnut-research program there. Darling gave them some of his chestnuts and asked if the scientists could use them to bring back the species. "It seemed like something that would be fantastic to do," Darling says. "Something for the entire eastern part of the nation." A few years later, however, his own tree was dead.

Source: <https://www.nytimes.com/2020/04/30/magazine/american-chestnut.html>