The Man Who Plants Trees

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Contents

CHAPTER 1

Champion Tree

THE ORIGINAL BOOK TITLED *The Man Who Planted Trees* is a slim volume, just four thousand words; in fact, it was first published as a story in *Vogue* magazine in 1954. That book was written as a fable by a Frenchman named Jean Giono and has tapped a deep well in the human imagination, and since its publication in book form, it has sold close to half a million copies. Speaking in the first person, its unnamed narrator describes hiking through the French Alps in 1910, enjoying the wilderness. As he passes through a desolate, parched mountain valley where crumbling buildings testify to a vanished settlement, he comes across a middle-aged shepherd taking his flock out to pasture. The shepherd has one hundred acorns with him, and he plants them as he cares for his sheep. It turns out that the shepherd

has planted more than a hundred thousand trees on this barren, wind-ravaged landscape.

Six years later, after surviving the front lines of World War I, the narrator returns to the shepherd's hut. He is surprised to see small trees "spread out as far as the eye could reach. Creation seemed to have come about in a sort of chain reaction. . . . I saw water flowing in brooks that had been dry since the memory of man. . . . The wind, too, scattered seeds. As the water reappeared so too there reappeared willows, rushes, meadows, gardens, flowers and a certain purpose in being alive."

As the years go by, the trees grow taller and the forest in the valley grows thicker, and a dying ecosystem is transformed into a thriving one. When the narrator returns for a third time, toward the end of the story, more than ten thousand people are living in the flourishing valley.

> Everything was changed. Even the air. Instead of the harsh dry winds that used to attack me, a gentle breeze was blowing, laden with scents. A sound like water came from the mountains: it was the wind in the forest. Most amazing of all, I saw that a fountain had been built, that it flowed freely and—what touched me most—that someone had planted a linden beside it, a linden that must have been four years old, already in full leaf, the incontestable symbol of resurrection.

Some experts say *The Man Who Planted Trees* is wishful thinking, that reforestation cannot effect the kind of transformation imagined in the book, bringing a barren landscape back to life

and bringing harmony to the people who live there. Planting trees, I myself thought for a long time, was a feel-good thing, a nice but feeble response to our litany of modern-day environmental problems. In the last few years, though, as I have read many dozens of articles and books and interviewed scientists here and abroad, my thinking on the issue has changed. Planting trees may be the single most important ecotechnology that we have to put the broken pieces of our planet back together.

Take the growing number of emerging infectious diseases. Their connection to the natural world is one of the most revelatory things I discovered about how little we understand the role of forests. I learned that there is a surprising single cause that connects a range of viral diseases including hantavirus, HIV, Ebola, SARS, swine flu, and West Nile virus with bacterial diseases including malaria and Lyme disease. Rather than just being a health issue, these deadly diseases are, at root, an ecological problem.

To put it in a nutshell, the teams of scientists researching the origins of disease say that pathogens don't just mysteriously appear and find their way into human populations; they are the direct result of the damage people have done, and continue to do, to the natural world, and they are preventable. "Any emerging disease in the last thirty or forty years has come about as a result of encroachment into forest," says Dr. Peter Daszak, director of EcoHealth Alliance, a New York–based international NGO that is pioneering the field of conservation medicine. "Three hundred and thirty new diseases have emerged since 1940, and it's a big problem." Most of these diseases are zoonotic, which means they originate in wildlife, whether in bats

or deer or ticks, which then infect people who live near the forest. It's believed, for example, that the human immunodeficiency (HIV) virus crossed the species barrier from monkeys to humans when a bushmeat hunter killed a chimpanzee, caught the virus from the animal, and brought the disease out of the jungle and into the world of humans. Fragmenting forests by building subdivisons in the oak forests of Long Island or logging in the mahoghany forests of Brazil degrades the ecosystems and exacerbates disease transmission to humans.

SO THIS BOOK is not just about planting trees. It is about the state and the likely fate of the world's forests as the planet journeys into a possibly disastrous century of soaring temperatures. Precisely what such rapid warming is doing, and will do, to the forests is unknown, but more virulent pests and diseases, drought, climate extremes, high winds, and an increase in solar radiation will likely take a steep toll on the forests.

We are beyond known limits, and traveling farther beyond them every day.

What will happen to the trees and forests? There is no formal predictive model because trees and forests have been poorly studied; there are no long-term data, and the world's forests are extremely varied and complicated. Despite the lack of data, it doesn't take an ecologist to imagine what could happen. Apparently, though, it takes a journey into another realm to come up with an idea about what might be done to save our oldest trees in the event the changes become catastrophic.

My journey into the world of trees started in 2001, when I

read an article about an organization called the Champion Tree Project. At the time, the group's goal was to clone the champion of each of the 826 species of trees in the United States, make hundreds or thousands of copies, and plant the offspring in "living archival libraries" around the country to preserve the trees' DNA. A "champion" is a tree that has the highest combined score of three measurements: height, crown size, and diameter at breast height. The project's cofounder, David Milarch, a shade tree nurseryman from Copemish, Michigan, a village near Traverse City, said he eventually hoped to both sell and give away the baby trees cloned from the giants. "Clones," in this case, are human-assisted copies of trees made by taking cuttings of a tree and growing them—an old and widely used horticultural technique for growing plants. Unlike a seedling, which may have only 50 percent of the genetics of its parent, a clone of a tree is a 100 percent genetic duplicate of its parent.

I have always been drawn to big old trees, and the idea of making new trees with the genes of champions was compelling. I proposed a story to *The New York Times* science section about the idea, got the assignment, and drove to Big Timber, Montana, not far from my home, to visit Martin Flanagan, a lanky working cowboy and tree lover who helped gather materials for Milarch's Champion Tree Project in the West. On a bluebird day in May, Flanagan drove me down along the Yellowstone River, bank-full and the color of chocolate milk, as the spring sun melted snow in the mountains. He showed me several large trees, including a towering narrow-leaf cottonwood. "This is the one I plan to nominate for state champ," he said excitedly, spanking the tree with his hand. "It's a beauty, isn't it?"

There wasn't much to the Champion Tree organization, I found out. It was mostly a good idea with a tiny budget, with Milarch and occasionally one of his teenage sons working out of his home in Michigan; Flanagan working part time in Montana, driving around in a beat-up pickup truck gathering cuttings; and Terry Mock, from Palm Beach, Florida, who was the director.

Over the next week I interviewed Milarch several times by phone, and he talked to me about the need to clone champion trees. "The genetics of the biggest trees is disappearing. Someone's got to clone them and keep a record. No one knows what they mean. Let's protect them so they can be studied in case they are important. A tree that lives a thousand years might know something about survival." I also interviewed several scientists who agreed that researchers don't know the role that genetics plays in the longevity and survivability of trees; it simply hasn't been assessed. Environmental conditions, including soil and moisture, are obviously critical as well. Two identical clones planted twenty feet apart might grow far differently. Almost all of them said, however, that in the absence of study, it's Botany 101 that genetics is a critical part of what's essential to a long-lived tree. If you want to plant a tree and walk away and have it live, it makes sense to plant a tree that is the genetically fittest you can find. The big old-timers have proven their genetic mettle; they are survivors. Or as General George Cates, former chairman of the National Tree Trust, put it to me, "You can bet Wilt Chamberlain's parents weren't five foot one and five foot two."

Dr. Frank Gouin, a plant physiologist and the retired chairman of the horticulture department at the University of Mary-

land, is a friend of the project and spoke to me in support of the notion of cloning. He had cloned a big tree himself, the legendary 460-year-old Wye Oak on Maryland's eastern shore. "These trees are like people who have smoked all their lives and drank all their lives and are still kicking," Gouin said. "Let's study them." And the way to perpetuate and study them, he said, is just the way Champion Tree proposes.

My story about Champion Tree ran on the front of the *Science Times* section on July 10, 2001, with several color photographs of various champions, and over the next few days other media picked up the story. After a flurry of interviews, including eleven minutes on the *Today* show, Milarch, flabbergasted at the reach of the *Times,* called me. "It put us on the map, big time," he said. "I can't thank you enough." He said he wanted to come to Montana to meet me and give me a gift of a champion green ash tree as a thank-you. Though I loved the idea of a champion of my own, professional ethics prevented me from accepting the gift. "Let's plant one on the Montana capitol grounds instead," he suggested.

Fine, I said, a gift to the state.

With the attacks of 9/11, the tree planting wouldn't come until the following year. On a warm, sunny June day, David Milarch came to my office in downtown Helena and introduced himself with a big hand. He is a jovial bear of a man, six foot three with broad shoulders and big arms. He looks like a lumberjack and was dressed like a farmer, in a short-sleeved snap-button shirt, jeans, and a plastic foam farm cap that said OLYMPICS 2002, and he carried a hard-shelled briefcase. There is a bit of Viking in him, not only in his outgoing personality and swagger but in his

ruddy complexion, though the hair that is left is white. A small strip of wispy white beard didn't cover his ample chin. A belly spilled over his belt.

Milarch has the charm gene, and I liked him right away. A born storyteller, he laughs loudly and frequently, and he has a flair for the dramatic and a fondness for announcing things rather than just saying them. He is an expert in the use of compliments, but pours it on a little too thick sometimes. As we talked he flipped open his briefcase and pulled out a crumpled pack of Marlboro Lights, put one in his mouth, and, in a practiced move, lit a cigarette with one hand by leaving the match attached to the book, folding it over, and lighting it with his thumb.

Over lunch, I expected a chat about the science of big tree genetics. I was wrong. As we sat down at a local restaurant, Milarch began a story. In 1991, he told me, he died and went to heaven. Literally. A serious drinker, he had quit cold turkey. The sudden withdrawal of alcohol caused kidney and liver failure, and a friend had to carry him to the emergency room, where a doctor managed to stabilize him. The next night, his wife and his mother beside him, he felt himself rise. Not his body, he said, but his awareness—he could look down from the top of the room and see himself lying there. It was a full-blown near-death experience, a phenomenon also known as disambiguation, something, at the time, I'd never heard of. His consciousness, he said, left the room and soon passed through brilliant white light—"It was like a goddamn blowtorch!" he told me. On the "other side" he was told it wasn't his time, that he still had work to do on earth, and he needed to go back. When his awareness

returned to his body, he sat up in bed, shocking his wife and mother, who thought he was dead.

The experience changed him—afterward he felt more alive and more present—and he understood, for the first time, he said, the importance of unconditional love. He appreciated his children and family more, and had a deeper connection to music and art. He felt more intuitive and more spiritual, even more electric, so charged that he couldn't wear a wristwatch or use a computer—they were affected by his body's electrical properties, which had been enhanced somehow. He wasn't perfect; there was still some of the old David there. But it existed along with this new part of him.

Months later, still adjusting to this new life, he was visited in the early morning hours by light beings, who roused him. The big trees were dying, they told him, it was going to get much worse, and they had an assignment for him.

In the morning he told his kids that the family had a mission—to begin a project to clone the champion of every tree species in the country and plant them far and wide. They were a farm family in the middle of what many call nowhere, a world away from environmental groups and fund-raising and politics and science. But the Milarchs were hopeful, naïvely so, and unaware of the obstacles that confronted them.

Lunch came and I was quietly incredulous. Was I really hearing this? I thought he was joking or spinning a yarn, but he said it all with a straight face. It was, to say the least, the most unusual origin of a science story I'd ever heard. I'd had no inkling of any of it during phone interviews. It didn't diminish the science, as far as I was concerned, because all the scientists I'd interviewed

for the story said cloning trees to save genetics is a scientifically sound idea. Where people sourced their inspiration didn't matter if the science passed the test. Still, it was curious. And this chain-smoking tree farmer who liberally deployed the F-bomb didn't fit the mold of the typical New Ager.

During his visit over the next couple of days, Milarch laid out his take on what humans have done to the world's forests, based on his peculiar blend of science and intuition, and how the Champion Tree Project wanted to change that. "People should be awestruck, outraged, overwhelmed," he said. "A tree that is five, six, eight, or fifteen feet across, the champions we are cloning, is what the size of all the trees in our forests once was, that all of America was covered with, not just one lone, last soldier standing. When we look at the trees around us, we're looking at the runts, the leftovers. The whole country should be forested coast to coast with these giants, not with the puny, scraggly, miserable mess we call our forests. We don't realize what we've lost."

"The champions are in harm's way," he told me. "They do their best in communities that are hundreds or thousands of acres. They're struggling in little pockets to hang on. We either get on it and get it done, or in twenty years they'll be gone. If man doesn't take them out, Mother Nature will. We're in the fifty-ninth minute of the last hour."

"Why do these light beings care about trees?" I asked.

"They are concerned about the survival of the planet. Call them light beings, plant *devas,* earth spirits, or angels, they are real, and there are some in charge of the trees. Americans are about the only ones who don't believe in such things, but they