

Trees Who Remember

by Connie Barlow

Lead-in essay for the 2001 Trees for Life Engagement Calendar, published annually by Trees for Life, The Park, Findhorn Bay, Forres, Scotland, <http://www.treesforlife.org.uk/>

Note: This is a 2010 retyping of that essay by the author, for publication online. It was initially written while Connie was finishing her 2001 book, *The Ghosts of Evolution*, published by Basic Books. Epigraph and photographs added by Connie in 2010.

*"This land is sleeping in a dream of mammoth.
Their heavy tread will sound again."*

— Loren Eiseley, "Dusk Internal" (poem)



I like to be around Trees Who Remember — trees who remember a time I cannot. Thus, it is comforting for me to visit a rare grove of two-hundred-year-old **white pines** in central Michigan (left). These pines were here when my paternal ancestors made the land between the Great Lakes their home. Encircled by a moat of balsam fir and cedar swamp, this little grove survived the conflagration that swept through Michigan more than a hundred years ago, feeding on the slash left behind by the loggers. Fifty years later, this sanctuary of old growth forest became one of my father's favorite spots on the property he purchased before I was born. Now my brother serves as caretaker, and the oldest generation alive to visit the grove is our own.

Aldo Leopold wrote of Trees Who Remember in a speech he delivered at the dedication of a monument in Wisconsin commemorating the extinct **passenger pigeon**, which once swept through the Great Lakes states by the billions in their quest for acorns and beechnuts. The author of the classic book *Sand County Almanac* spoke these words in 1947: "Men still live who, in their youth, remember pigeons. Trees still live who, in their youth, were shaken by a living wind. But a decade hence only the oldest **oaks** will remember, and at long last only the hills will know." Like all inhabitants of the Great Lakes region during the mid 19th century, my great-grandparents probably feasted on passenger pigeon whenever a passing flock touched down for the night or chose to breed in their neighborhood — whenever nearby trees were thus shaken by a living wind.



In 1999 I joined with other wilderness enthusiasts in the dedication of the Aldo Leopold Amphitheater at the U.S. Forest Service visitor center at the edge of the **Gila Wilderness**. The dedication marked the 75th anniversary of governmental protection of the surrounding canyons and mountains in southwestern New Mexico. The event had national significance, too, because the Gila was

the first designated wilderness in my country. Aldo Leopold was at that time the forest ranger for the district, and it was he who conceived of and then pressed for these wildlands to remain unlogged, unmined, undeveloped, roadless forever. Many of the **junipers** and some of the **ponderosa pines** within my gaze as I write were alive when Leopold was human caretaker for their realm. But do they remember his presence? Surely not. Similarly, the **white pines** in Michigan do not remember my father. The only **oaks** who truly remember the passenger pigeon are those still bearing the stubs of branches shorn by the aggregate weight of a thousand birds. "Remembering" is, rather, and imaginative projection by me that enriches my own awareness of the past. Nevertheless, there are trees who do, in fact, truly remember former times.

I know that the **cottonwoods** sprouting in a particular spot along a nearby stretch of the Gila River actually do remember a time before the great flood of 1978. Although I have lived in the Gila watershed for only a dozen years, a pre-flood memory is shared with me whenever I stand in the presence of these special trees. Cottonwood trees can sprout from seed only in a floodplain. Yet along this cliff I find saplings of narrow-leaf cottonwood poking through bedrock two and even four meters above the current level of the river. Although only a few centimeters in diameter, these trees are not as young as they look. They may easily be a hundred, two hundred, even three hundred years old. All are sprouting from the roots of a large cottonwood tree I have never seen, but that I know must have been here before the floods excavated a much lower channel. The tree never died; the roots have been sprouting ever since, although the sprouts have periodically been mowed down by beavers. If the old rootstock has maintained sufficient contact with the waters, these trees may grow beyond the sapling stage, encircled by cloaks of chicken wire I have given them.

[2010 note: Soon after I wrote this article, I discovered that my beaver-proof tree sprouts all died, owing to their outgrowing access to enough water to support more living tissue. Thus for hundreds, maybe thousands (think aspen) of years, this ancient tree has never manifested above ground as anything more than a dozen or so finger-thin stems, sprouting and withering, sprouting and withering.]

There are trees in my neighbor's horse pasture with far more ancient memories than the cottonwoods. These memories are ten thousand years old. They date back to the Ice Age, when the great mammals of the Pleistocene epoch still roamed this continent. Ten thousand years ago, however, the **mammoths**, **mastodons**, **giant ground sloths** and the big predators and scavengers that fed upon them all became extinct. Thanks to the work of paleontologists, we humans can remember the Pleistocene mammals. But our memories are acquired through cultural teachings; we are not born with them. **Honey locust**, *Gleditsia triacanthos*, is born with the memory. Ten thousand years have passed, yet honey locust still remembers.



Every summer the Tree Who Remembers the Mammoths grows bean-like pods, as long as my lower arm (left) and filled with a mixture of pulp sweet enough to attract, and seeds tough enough to resist, the Ice Age elephants and their grinding molars. Every autumn **honey locust** expects the mammoths to return. She (*Gleditsia* is a dioecious species, with individual trees being either male or female, so a tree with pods rather than pollen truly is "she") expects to feel her pods plucked one by one by a proboscidean trunk slithering through her branches. But the trunk does not come. Months pass. Well into winter, honey locust gives up and drops her fruits. There they lie forlorn, vulnerable to the gnawing teeth of seed predators or the decomposing skills of fungal hyphae.

Ten thousand years have passed and honey locust is still clueless that the mammoths are gone. Until very recently her range had been shrinking, owing to an inability to disperse seeds, as she once had, in the rich dung of hot-blooded beasts. But then industrial humans came on the scene, finding her wood good for making fenceposts and her foliage good fodder, and so she was planted on farms and ranches. Within the past three decades, she's been groomed for a new livelihood — as street tree.

Rather, *he's* been turned into a street tree, because pods are a nuisance in New York City. Both he and she have been stripped of their spines through selective breeding. Three-pronged spines longer than my fingers once defended the trunk and lower branches from bark-stripping tusks, but now all cultivars have been stripped of this fierce memory.

Not long ago, I was thrilled whenever I encountered honey locust along a sidewalk or parking lot. But now the thrill is tempered by sadness, as I realize that the tree is a shell of its former self. Like an old friend with Alzheimer's disease, the honey locusts I encounter in cities throughout the United States are almost always sans memory. Podless and spineless, cultivated honey locusts no longer remember the mammoths.

A few weeks after the Aldo Leopold Amphitheater was dedicated, I travelled to the Black Hills region of South Dakota to present a eulogy at a most unusual memorial service. In my guise as emcee, I began by reading from Leopold's passenger pigeon essay, as his tribute to the bird that had once darkened American skies was the only precedent I could find for our own event. We were conducting a **Mammoth Memorial Service** at the site of the greatest accumulation of intact mammoth bones in the Western Hemisphere. The 'we' included the paleontologist in charge of excavation and the manager and staff [**Larry Agenbroad**] who ensure that the public has a chance to experience the natural wonder without impinging on its scientific value.

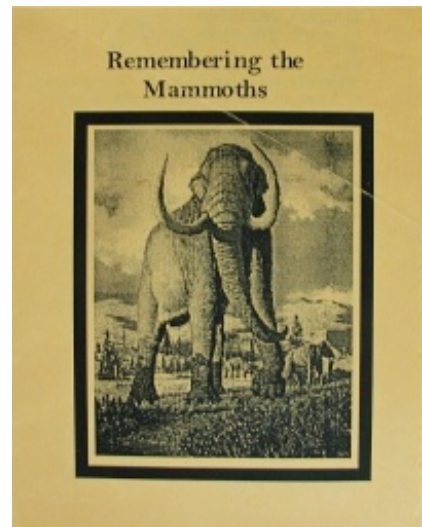
After two eulogists had paid tribute to the mammoths, it was my turn to do the same. Transformed by a headdress of long curly pods, crowned with formidable spines, I began my eulogy, "I am Honey Locust, *Gleditsia*



triacanthos, and I have to tell you that I'm shocked. I'm shocked that the mammoths are no longer with us. Until I received an invitation to present this eulogy, I had no idea the mammoths were gone." Ten minutes of extolling the virtues of mammoths passed, and then Honey Locust concluded, "Let's remember the mammoths together: you humans and us honey locusts. We'd make a good team, don't you think? Rumble on, mighty mammoths, across the grassy plains of our imaginations!"

Honey locust thus remembers the greatest beasts of the Pleistocene. And, knowing her story, we humans can conjure the ghosts of evolution when in her presence. I do that every time I walk to the store during the part of the year that I live in my urban home, **New York City**. Honey locusts — half of which bear pods, as these trees were planted before the spineless cultivar became podless — are everywhere, and so too are the **ghosts of mammoths**. When in the right frame of mind, I can see a Pleistocene giant rear up onto its hind legs and pluck a pod, even as the taxis whiz by, just as modern elephants still do when harvesting pods from legume trees in Africa.

Almost as common as honey locust in New York City is the tree whose memories are the most ancient of all. This is **ginkgo** — the Tree Who Remembers the Dinosaurs. It seems that no animal alive today disperses ginkgo fruit in the wild, and though surely something was dispersing it as least in a haphazard way during most of the last 65 million years, the fruit itself had evolved to attract small,





carrion-feeding dinosaurs. Male ginkgoes are preferred as street trees today because rotting ginkgo fruit smells like vomit (hence the theory that only carrion feeders would find it attractive). Nevertheless, some parks and sidewalks in New York are shaded by females that produce prolific fruit. Only because this **Jurassic-age tree** is virtually indestructible to insects, unappealing to herbivores big and small, and capable (like cottonwood) of sprouting from ancient rootstock again and again, did ginkgo survive for millions of years after its intended seed dispersers had become ghosts. Only because humans in China began to cultivate the tree for medicinal values of its leaves and seeds was ginkgo — once ranging throughout the

temperate climates of the Northern Hemisphere — rescued from oblivion.

We humans are now in partnership with ginkgo, as we are with honey locust and countless other trees. Missing their partners in evolution, these trees now depend on us. This understanding, of the ghosts of evolution and the ecological roles they once fulfilled, is an essential learning in light of the human-caused wave of extinction now taking place. Extinctions not only directly endanger much of Earth's biological richness, but also, through sundering ecological relationships, threaten to leave many trees and other organisms bereft of their evolutionary partners, and therefore consigned to a slower but nonetheless inevitable decline. Let us avert that sad fate. Let us nurture in a thousand ways the passion and resolve necessary to turn around this extinction crisis. Let us begin to tell the stories of the Trees Who Remember.

Connie Barlow is a correspondent for Wild Earth journal in the USA and a founding member of the Epic of Evolution Society.

2010 addendum: For a playful music video I made in 2010 on some of the concepts presented here, visit the theme song of my YouTube site: ghostsofevolution:

<http://www.youtube.com/user/ghostsofevolution#p/u/0/A-kYjjphxJY>

I dedicate this essay to my mentor and friend Paul S. Martin, who taught me to see through “deep-time eyes”. Photos of him (and me) follow:



at Paul's home,
Tucson AZ
ca. 1996



Above: At Paul's home 2006 (with Shasta Ground sloth shit from a cave in the Grand Canyon -- part of Paul's possessions)



At Paul's home in 2008, playing with Paul's cast of a jaw of a giant short-faced bear found at the Mammoth Site in the Black Hills.

Below: Mammoth Memorial Service brochure

