

THE CRÊPE MYRTLE
(My species misidentification of a Japanese Zelkova)

StandingNation-Human Alliance Bulletin

Reams of Creativity and Vision

Trees help us manifest and use our intelligence and creativity in several ways:

- 🌳 **TREES help us reason, create, and do productive work by providing us with the pulp-making fibers necessary for making paper.** Cave walls, stone, bone, clay tablets, parchment (made of animal skin), and papyrus (made of reeds by Ancient Egyptians) all preceded paper as the means by which humans have been able to communicate in written form. Compared to these other materials on which one could write, paper was easier to make and to carry, and ultimately, proved less expensive to make.

Paper was first made in China during the Han dynasty by Cai Lun (c.50-121 C.E.), a member of the Chinese court. The story is that he was inspired by wasps and bees to invent papermaking in 105 CE. Some sources say his ingredients were mulberry tree bark, hemp, rags—all three of which provided fibers—and water, and his process involved mashing this mix into pulp, pressing out the liquid, and hanging the resulting thin mat to dry in the sun.

This secret of how to make paper got out and spread slowly. A Buddhist monk from China took the process to Japan in the 6th century. During the 8th century, with either the capture of a Chinese paper mill, or the capture of two

Chinese papermakers, depending on whose account you read, the Chinese secret of papermaking spread to the Arab world. When the Arabs conquered Sicily and Spain in the 11th century, they brought this secret with them. The first paper mill was built in Spain, and within the next four centuries, paper was being produced at mills all across Europe. England began producing large supplies of paper at the very end of the 15th century and supplied its colonies with paper.

In 1690, the first paper mill in North America was built near Philadelphia. At first, American paper mills used the Chinese method of shredding cloth rags into individual fibers to make paper, but as the demand for paper grew, the mills changed over to using fiber acquired from trees because wood was less expensive and more abundant than cloth.

What trees contribute to paper are cellulose fibers. Cellulose fibers can be obtained from the bark, wood, or leaves of trees, but generally, either bark is removed from the trees and the wood of the trunk is used or pulp for papermaking is made from the waste—wood chips and sawdust of other lumber operations that is chipped into pieces the size of cornflakes.¹

Today, more than 36 percent of the fiber used to make new paper products in the United States comes from recycled paper products. Besides using recovered paper, half of the fiber used for paper comes from trees grown in “working forests,” where trees are grown as a sustainable resource specifically to be harvested. The most commonly used softwood trees for papermaking include: spruce, pine, fir, larch and hemlock, and common hardwoods are eucalyptus,

¹ “How Paper is Made,” Idaho Forest Products Commission website, <https://idahoforests.org/content-item/how-paper-is-made-2/> (accessed 2/11/21).

aspen, birch, and poplar. In theory, any tree can be used for pulp making, but coniferous trees are preferred because the cellulose fibers in the pulp of these species are longer, and therefore make stronger paper.²

For almost 2,000 years paper was necessary for written communication until the advent of widespread computer use, less than four decades ago. The first definition of the word “paper” provided by the Italian Treccani children’s encyclopedia (*Enciclopedia Italiana di Scienze, Lettere ed Arti*) is: “A material that is essential for spreading ideas in everyday life. Over the centuries, paper has made an enormous contribution to progress, from enabling citizen participation in democratic life to raising levels of knowledge and education.”³

And, nothing has contributed more to the making of paper than trees.

🌳 **Trees help us be more creative in our work and play, our business and arts, by providing us with the color green of their leaves.** A study posted in the *Personality and Social Psychology Bulletin*, entitled “Fertile Green: Green Facilitates Creative Performance” demonstrated, in four experiments, that a brief glimpse of the color green prior to a task enhances creative performance. This “green effect” was observed both picture-based and word-based assessments of creativity.⁴ The green in the natural world comes from the grass, plants and trees. Taking a break to look at the trees outside your window, or even better yet,

² “Paper,” How Products Are Made, Vol. 2, <http://www.madehow.com/Volume-2/Paper.html> (accessed 2/09/21).

³ Sarah Cantavalle, “The History of Paper: From Its Origins to the Present Day,” *Pixartprinting blog.*, April 5, 2019 <https://www.pixartprinting.co.uk/blog/history-paper/> (Accessed 2/09/21).

⁴ Stephanie Lichtenfeld, Andrew J. Elliot, Markus A. Maier et al., “Fertile Green: Green Facilitates Creative Performance,” March 16, 2012, <https://journals.sagepub.com/doi/10.1177/0146167212436611> (Accessed 2/09/21).

taking a break to walk outside through trees in the middle of your workday naturally boosts creativity and enhances problem-solving skills.

🌳 And when our eyes are overworked from reading, particularly on electronic screens? **TREES help humans—particularly in this age of screens—by relieving eyestrain with the green color of their leaves.** Our eyes translate light into color. The color green, which is a mixture of blue and yellow, “is located at about 550 nanometers, making it the easiest for the retina to perceive. Since green is near the middle of the color spectrum, it enhances the blue and red colors at the opposite ends, making them easier to see.”⁵ The result is less eyestrain.

The recommendation is to turn your gaze away from your monitor or piece of paper every 20 minutes and gaze on green—either in the form of a houseplant in your office or trees outside your window. Even a photograph of green trees or plants can help.

In addition, the color green has been shown to relax both mind and body. Signifying health and life, color experts claim is both soothes and refreshes us.⁶

When creativity lags or your eyes are strained from working either on the gift of paper from trees or on screens powered by “fossil fuels—the sunlight that trees and other plants captured millions of year ago—look to the green of trees for both inspiration and clarity of vision!

⁵ “How Plants Can Help Reduce Computer Eye Strain,” Leafscape: Botanical Design and Care, May 3, 2017, <https://leafscapedesigns.com/how-plants-can-help-reduce-computer-eye-strain/> and Robert Jimison, “Why We All Need Green in Our Lives,” *CNN Health*, posted June 5, 2017, <https://www.cnn.com/2017/06/05/health/colorscope-green-environment-calm/index.html> (accessed 2/28/21).

⁶ “4 Reasons why you need the color green,” in *Wellness* by Ameritas Life Insurance Corp., posted September 11, 2017 at <https://www.ameritasinsight.com/wellness/health-and-wellness/color-green-life>

A “Bonus” Diplomatic Relationship with the Crêpe Myrtle (*Lagerstroemia indica*)

You may recall that in “Puzzle Pieces: The Japanese Zelkova,” the last essay of *Divining, A Memoir in Trees*, I originally misidentified the tree under which my grandson Caden slept while I sat and wrote. I mistook a row of Japanese zelkova trees for a row of crêpe myrtle trees. Ultimately, I figured it out, describing my discovery of the misidentification on page 180 of the book.

But had I not kept—and been able to locate—that leaf, those trees would still be crêpe myrtles in my memory of that day. And maybe it was because the discovery of the tree with the puzzle-piece bark was what came right after the scare with my grandson that I did fall a bit in love with my fantasy of this being a southern belle of a tree. And, so here I deviate from the Japanese zelkova and insert a bonus species: the crêpe myrtle.

- ❖ Sap-sucking aphids are attracted to and suck the leaves of the crêpe myrtle for nutrients.
- ❖ Aphids excrete a sticky, sugar-rich “honeydew residue” (AKA “Plant Bug Poo”) as they are digesting leaf nutrients, which in turns attracts ants, honeybees, wasps, and other insects. (Sooty mold, a collective term for different Asocomycete fungi, also eats honeydew, which is what causes the often-seen, black, crusty material on the leaves of crêpe myrtle.)
- ❖ The crêpe myrtle tree is a pollen and nectar source for several native bee species as well as honeybees. In fact, its flowers are specially welcoming for

bees for two reasons—it blooms during the summer months when fewer pollen sources are available, and:

“*Lagerstroemia indica* is heterantheric, its flowers bearing two kinds of stamens: six peripheral stamens with long, curved filaments and large anthers producing blue-green pollen, capable of emitting pollen tubes and fertilizing ovules; or a central tuft of 35 - 40 smaller anthers producing yellow feed pollen that does not germinate and is collected by insects, mainly bees.”⁷

- ✦ Butterflies and hummingbirds are also attracted to the tree’s nectar.
- ✦ As well as ladybugs, birds—particularly finches, mockingbirds, and woodpeckers, but also chickadees, titmice, and warblers⁸ are attracted the aphids, which are attracted to the trees.
- ✦ Birds are attracted to the seeds of the crêpe myrtle, particularly American goldfinches, dark-eyed juncos, house finches, northern cardinals and white-throated sparrows, and house sparrows⁹.
- ✦ Crêpe myrtle trees also provide birds with shelter and nesting habitat.
- ✦ The crêpe myrtle first grew in China thousands of years ago where it came to be known as “*Pai Jih Hung*” which translates into “hundred day red’ aptly named for its beautiful color and long flowering season of 90 to 120 days.
- ✦ The Chinese also called the crêpe myrtle tree the “monkey tree” because monkeys could not climb the smooth, slippery trunks (This past year, my

⁷ Massimo Nepi, Massimo Guarnieri, and Ettore Pacini, “‘Real’ and Feed Pollen of *Lagerstroemia indica*: Ecophysiological Difference” (from the abstract), *Plant Biology*, Vol.5 , p. 311-314, 2008 (accessed at researchgate.net 2/12/21).

⁸ Teo Spengler, “Birds Attracted to Crepe Myrtle Trees,” *eHow Garden > Plants, Flowers & Herbs > Trees* https://www.ehow.com/info_12264982_birds-attracted-crepe-myrtle-trees.html (accessed 2/14/21)/

⁹ John Barrat, “Crape myrtle trees aren’t native to the US, but hungry native birds still find them tasty,” *Smithsonian Insider*, September 26, 2018. <https://insider.si.edu/2018/09/crape-myrtle-trees-arent-native-to-the-us-but-hungry-native-birds-still-find-them-tasty/> (accessed 2/14/21).

young grandchildren have been experimenting climbing the crepe myrtle trees on their daily walk on the Woodcroft Trail. Judging from the photographs I've received, rubber-soled shoes and a wider arm span help. They appear to be better monkeys than actual monkeys when it comes to climbing this species of tree.)

✠ “The common cr[ê]pe myrtle (*L. indica*) from China and Korea was introduced circa 1786 to Charleston, South Carolina, in the United States by the French botanist André Michaux,”¹⁰ who was employed by King Louis XVI. He had first transplanted “the tree from China to England, where the tree failed due to the climate. However, when the tree was introduced to the Deep South, it flourished.”¹¹

✠ The crêpe myrtle is considered the most popular ornamental tree in the American South.

✠ “Crêpe *Murder*” refers to extreme pruning—pollarding—that some gardeners and city forestry departments do in late winter and early spring, where the tree is cut down to just where its multiple stumps remain. While this type of pruning may result in larger blooms, the flowers will be growing on thinner, weaker branches that may droop and break. The crepe myrtle trees along Woodcroft Trail have been pollarded since I was there in December. My daughter sent me a photograph of a clump of 11 stumps chopped, sometime

¹⁰ “*Lagerstroemia*,” *Wikipedia*, <https://en.wikipedia.org/wiki/Lagerstroemia> (accessed 2/06/21)/

¹¹ “Crepe myrtle pruning time in the fall” posted by Clemson University Cooperative Extension in *PS WalterboroLive* on November 4, 2020 (accessed 2/12/21).

between the beginning of December and mid-February, down to the height of Caden, my two-and-a-half-year-old grandson.

- ✘ All crêpe myrtles do well on the West coast, as far north as northwestern Washington. Some species of crêpe myrtle can be planted as far north as New York, and, yes, *even Michigan*.

Tourists' Testimonials

*“ . . . I love to think of nature as unlimited broadcasting stations, through which God speaks to us every day, every hour and every moment of our lives, if we will only tune in . . . ”*¹²

—George Washington Carver (1864 – 1943)

*“Look deep into nature, you will understand everything better.”*¹³

—Albert Einstein (1879 – 1955)

Tree-Tripping

- What friends and family members are associated with a specific species of tree or a particular tree in your mind?
- If you are a Northerner, do you have a connection to a Southern tree species? If you're a Southerner, do you have a connection to a Northern tree species?

¹² George Washington Carver, from his essay “How to Search for the Truth” in a letter to Hubert W. Pelt of the Phelps Stokes Fund on February 24, 1930.

¹³ Albert Einstein to Margot Einstein, his stepdaughter, after his younger sister's Maria “Maja” Einstein's death in 1951 (quoted by Hanna Loewy in *A&E Television Einstein Biography*, VPI International, 1991).

- What species of trees seem to project the most “tree-ness” to you? Can you figure out why? What memories do you have of individual members of this/these species?

Tree Dreams

- 🔗 To what trees in your life do you “listen”?
- 🔗 If you don’t listen to a tree, if you were to listen, to what tree *might* you listen?
- 🔗 What might you imagine this tree saying to you?

Tree’s Big Idea: INTELLIGENCE

Within the last decade, at least five books have been written for the general public that share with us what scientists have recently learned about plant communication, perception, and intelligence:

The Hidden Life of Trees: What They Feel, How They Communicate (2015) by German author and forester Peter Wohlleben is perhaps the best known. The English translation of the book reached Number 5 on the *New York Times* bestseller list for hardcover nonfiction and was Number 7 on the British newspaper, *The Sunday Times* list.

But several other books, as well, have caused cracks in the paradigm of how we think about trees:

- *Brilliant Green: The Surprising History and Science of Plant Intelligence* by Stefano Mancuso and Alessandra Viola (also translated, from Italian) with a forward by American author and journalist Michael Pollan (2015)

- *What a Plant Knows: A Field Guide to the Senses* (2012) by Daniel Chamovitz, PhD, Director of the Manna Center for Plant Biosciences at Tel Aviv University.
- *Thus Spoke the Plant: A Remarkable Journey of Groundbreaking Scientific Discoveries and Personal Encounters with Plants* (2018) by scientist Monica Gagliano, PhD
- *The Revolutionary Genius of Plants: A New Understanding of Plant Intelligence and Behavior* by Stefano Mancuso (2018).

In the most recently published, the last of these books, in the third and fourth sentences of the first page of his first chapter, Mancuso, the world’s leading authority in the field of plant neurobiology, which explores signaling and communication at all levels of biological organization, muses:

“It isn’t too difficult to imagine that intelligence is not the product of one single organ but that it is inherent to life, whether there is a brain or not. Plants, from this point of view, are the most obvious demonstration of how the vertebrate brain is an ‘accident’ evolved only in a very small number of living beings—animals—while in the vast majority of life, represented by plant organisms, intelligence—the ability to learn, understand, and react successfully to new or trying situation has developed without a dedicated organ.”¹⁴

We are living at a very exciting time as science shows us proof that plants have abilities that transcend what most of us could ever imagine. Just looking at a sampling of the chapter titles from these books gives hints at what we humans are beginning to learn about trees and other plants:

¹⁴ Stefano Mancuso, “Chapter 1: “Memories Without a Brain,” *The Revolutionary Genius of Plants: A New Understanding of Plant Intelligence and Behavior*, p.5 (New York, NY: Atria Books, an imprint of Simon & Schuster, Inc., 2018).

- The Language of Trees
- Humans Are the Most Evolved Beings on the Planet. Or Are They?
- The Senses of Plants (a chapter with the subheads: Sight, Smell, Taste, Touch, Hearing, and 15 Other Senses!)
- Communication Between Plants and Animals
- How a Plant Knows Where It Is
- What a Plant Remembers
- Plant Intelligence
- Memories Without a Brain
- Moving Without Muscles
- Friendships [between trees]
- The Capsicophagous and Other Slaves of Plants

However, some of the ideas discussed in these books are much older. Some of them came from Darwin. While we consider Charles Darwin, as a primary contributor to the science of evolution, as a theological student at Cambridge he fell in love with his primary scientific interest: plants. He wrote a 572-word essay *The Power of Movement in Plants*, which was published in 1880. In the last paragraph of his essay, he stated the conclusions of his research:

“The course pursued by the radicle [the primary root] in penetrating the ground must be determined by the tip; hence it has acquired such diverse kinds of sensitiveness. It is hardly an exaggeration to say that the tip of the radicle thus endowed, and having the power of directing the movements of the adjoining parts, acts like the brain of one of the lower animals; the brain being seated with the anterior

end of the body, receiving impressions from the sense-organs, and directing the several movements.”¹⁵

Once, not so long ago, I did not know what science had discovered about trees, did you?

What do *you* hear when you listen to the murmurs of trees?

¹⁵ Charles Darwin, assisted by Francis Darwin, *The Power of Movement in Plants*, p. 572 (London: John Murray, Albemarle Street, 1880).