Chapter 14

THE COLORADO PINYON

StandingNation-Human Alliance Bulletin

The Green Personal Trainer

- **TREES increase human energy levels**.[1]
- **TREES improve human metabolic health.**[2]
- **TREES help humans lose weight.**[3]

Diplomatic Relationships

- Pinyon nuts are often dispersed by the pinyon jay after removing them from open cones.
- Because they are high in fat and calories, pinyon nuts are important food for several songbirds, quails, chipmunks, squirrels, mule deer, and black bears[4].
- Pinyon nuts have been and are harvested by Navajos and other native peoples in the late fall. They shake the nuts loose from the open cones and gather them by hand to use as a tasty and nutritious staple food source.

---

[1] Akers A, Baron J, Cossey R, Gainsford P, Griffin M, Micklewright D, "Visual color perception in green exercise: positive effects on mood and perceived exertion," *Environmental Science and Technology,* 2012;46(16):8661-6. doi: 10.1021/es301685g (accessed 2/26/21).
[2] Kyung Ju Lee, Junguk Hur, Kyung-Sook Yang, Mi-Kyoung Lee, Sung-jae Lee, "Acute Biophysical Responses and Psychological Effects of Different Types of *Forests* in Patients with Metabolic Syndrome," *Environment and Behavior,* 2017; 50(3):298-323. doi:10.1177/0013916517700957 (accessed 2/26/21).
[3] Li, Q, *Forest Bathing: How Trees Can Help You Find Health and Happiness,* p.38 (NY: Viking, 2018).
[4] "Pinyon Pine," *Utah State University Extension*, https://extension.usu.edu/rangeplants/shrubs-and-trees/PinyonTwoneedle (accessed 1/26/21).

- Historically, pinyon nuts were a staple food in American native people's diets and were eaten raw, roasted or ground into flour.
- Pinyon needles were stepped for tea.
- Indian migrations were determined by location of seed crops
- Human pinyon nut harvest rights belong to Native American tribes.
- Pinyon nuts are both a popular snack and used as an ingredient in New Mexican cuisine.
- *Pinus edulis* is the state tree of New Mexico.
- Today, pinyon nuts are eaten toasted as snacks and are used in making candies, cakes, and cookies, added to salads, and, in particular, used, as a crucial ingredient, in making pesto, a sauce traditionally made with basil, pine nuts, garlic, olive oil, and grated Parmesan cheese blended together.
- Pine-nut syndrome (PNS)—a constant bitter or metallic taste appearing 1 to 3 days after ingesting the nut and lasting up to two weeks— first reported in 2001, is an experience thousands of people in Europe and the U.S. experienced. Other symptoms, including nausea, headache, diarrhea, and vomiting, have been associated with some cases as well. PNS generally associated with the pine nuts imported from China. Most of the pine nuts in U.S. and European trade are sourced from China:

> "In addition to the many species of pine nuts produced in China, Chinese processing plants also import unshelled pine nuts from Mongolia, North Korea, Pakistan and Russia, then process and re-export them as Chinese pine nuts."[5]

[5] "Exporting Pine Nuts to Europe" "Market Information" *CBI [Centre for the Promotion of Imports from developing countries] Ministry of Foreign Affairs* at https://www.cbi.eu/market-information/processed-fruit-vegetables-edible-nuts/pine-nuts (accessed 1/26/21).

- The Chinese pine nut (*Pinus koraiensis)*, however, does not appear to be the culprit. In the Danish study referenced below, toxicologists discovered the seeds causing the problem was from the *Pinus armandii,* the Armand pine or Chinese white pine, or *Pinus massoniana,* the Chinese red pine, which are considered a "counterfeit" or illegitimate pine nuts:

> "During the last few years, thousands of cases of pine nut-related dysgeusia [taste impairment] have been reported. The symptoms involved are predominantly related to taste disturbances such as a constant bitter or metallic taste. The taste disturbance has been reported to occur 1–2 days after ingestion of pine nuts from the species of *Pinus armandii*."[6]

- In the five pine nut seasons from the 2014-2015 season through the 2018-2019 season—and this is considering *all* pine nuts, not specifically pinyon nuts—"global production averaged ca.[circa] 26,300 MT [metric tons]."[7]
- Today, on eBay, I could purchase one pound of "authentic fresh Pinon Pine nuts, Navajo Land specialty, new 2020 Crop" for $38.00.

A Tourist's Testimonial

> *No one knows precisely how sentient is a pinyon pine, for example, or to what degree such woody organisms can feel pain or fear, and in any case the road builders had more important things to worry about, but this much is clearly*

[6] N.Z. Balin, "A Trial Investigating the Symptoms Related to Pine Nut Syndrome," *Journal of Medical Toxicology* 8, 278-289 (2012***),*** February 17, 2012, https://link.springer.com/article/10.1007/s13181-012-0216-4 (accessed 1/26/21).
[7] "Pine Nuts: Production" in *Nuts & Dried Fruits Statistical Yearbook 2018/2019* by INC: International Nuts & Dried Fruit, p. 38, https://www.nutfruit.org/files/tech/1553521370_INC_Statistical_Yearbook_2018.pdf (accessed 1/26/21).

established as scientific face: a living tree, once uprooted, takes many days to wholly die.[8]

—Edward Abbey (1927 – 1989)
American author, essayist, and environmental activist

Tree-Tripping

1. Next time you go on a trip, outside your area, outside your state, perhaps outside your region, or even overseas, see if you can find a tree that you don't recognize, one that doesn't grow in your corner of the world.
2. Depending on the season and by observation, see what you can determine about the tree:
    - ☐ Habit (the tree's shape: trunk + crown)
    - ☐ Bark: What color? Rough or smooth? If ridge, what shape? Peeling? Difference between bark nearer to base and above?
    - ☐ Flower: Is it the season? Can you see any?
    - ☐ Leaf: Color? Shape? Arrangement on twigs? Edges? Venation?
    - ☐ Fruit/cone: Is it the season? Are any forming or mature?
    - ☐ Seed: Can you see them from within the fruit, key, or cone?
3. Can you identify the unfamiliar tree with a little help from a paper or online tree guide?
4. Can you discover, by talking with people who live in the area or reading, what relationships local people—today and historically—have with this tree? (e.g., Is it

[8] Edward Abbey, *The Monkey Wrench Gang* (Philadelphia, PA: Lippincott, 1975)

planted as a street tree? Was the tree revered by early people? What food, teas, and/or medicines has it provided? What has its wood been used for?)

5. How many types of pinecones can you find and identify?
6. Can you find a male cone on a conifer?
7. Do you have a favorite use for—or a recipe—which uses pine nuts?
8. Where do the pine nuts come from that you use? Are they from the Mediterranean area—*pignolias* from the Italian stone pine (*Pinus pinea)*, grown in Italy, Spain, and Portugal? Or do they come from the Southwest U.S. (*Pinus edulis*)? The pine nuts a shopper purchases at a Costco Wholesale warehouse club are from China, as are Trader Joe's and Diamond of California brands; these are seeds from the Korean pine (*Pinus koraiensis),* native to eastern Asia: Korea, northeastern China, Mongolia, the temperate rainforests of the Russian Far East, and central Japan[9].
9. Have you ever made pesto using pine nuts? The basic recipe for this sauce, generally served over pasta, is often printed on packages of pine nuts:

Pesto Sauce Recipe[10]

4 cloves of garlic
½ cup pine nuts
2 cups fresh basil leaves (packed tightly)
½ cup olive oil
¼ cup grated Parmesan cheese
¾ teaspoon salt

[9] "*Pinus koraiensis," Wikipedia,* https://en.wikipedia.org/wiki/Pinus_koraiensis (accessed 1/26/21).
[10] The pesto recipe ingredients and their amounts come from the "Pasta with Pesto Sauce recipe" printed on the back of Kirkland Signature Organic Pine Nuts package. The pesto recipe I prefer is the one which includes fresh parsley and melted butter, as well as the 6 typical ingredients, and can be found in the *Moosewood Cookbook: Recipes from Moosewood Restaurant, Ithaca, New York* by Mollie Katzen (Berkeley, CA: Ten Speed Press, 1977).

Combine all ingredients and puree in a food processor or blender. Serve over pasta, topping with additional pine nuts, Parmesan cheese, and freshly ground black pepper.

Tree Dreams

- What is the natural landscape of trees you know best? Perhaps it is what you see or remember from a repeated drive to what constitutes "wild" to you: driving to or while on a vacation, camping trip, or hike.

  As a child, my family took our vacations at Houghton Lake, so what I remember, as we headed north, was the change from deciduous woods along the Michigan's Old U.S. 27 Highway to the evergreens punctuated by birch, in what is the Au Sable State Forest[11]. The green pyramids out my window were pine, spruce and fir; the paper birch trees supplied the exclamation points.

- With what natural treescapes are you familiar that are different from what you connect locally as wilderness?

  For two years, while I was earning my Master of Fine Arts (MFA) in Fiction at Goddard College in Plainfield, Vermont, I became familiar with a very different vision of wilderness. I flew into Boston's Logan Airport and drove with a friend to Goddard through New Hampshire's White Mountain National Forest to Plainfield. On the autumn drives, the orange of sugar maples blazed out against dark evergreens on mountain slope after mountain slope through which we wound.

[11] One of three state forests in the northern Lower Peninsula: Au Sable, Pere Marquette, and Mackinaw; and one of six managed by the State if we include the three state forests in the Upper Peninsula: Lake Superior, Escanaba, Copper Country.

Eastern Plainfield is contained within huge forest block of more than 45,000 acres. The town itself is within the L.R. Jones State Forest, a part of the 250-mile Green Mountain Range a part of the Appalachian Mountain Range. The L.R. Jones State Forest, Vermont's first state forest (est. 1909), bleeds into the much larger Groton State Forest. The two most notable features of Plainfield are the Winooski River and Spruce Mountain, with a 3,037-foot summit.

In addition to the pioneer species of aspen and birch, red maple is the dominant tree species in the canopy, surrounded by Eastern white pine, red spruce and balsam fir. But my daily sunrise walk on Taylor Farm Road took me past a traditional Vermont sugar shack and through the heart of sugarbush, a grove of sugar maples. The rolling Vermont landscape is nothing like the flatness of Michigan's lower peninsula, but the shapes and colors of the trees—the treescape—make the greatest difference.

- What species are members of those different treescape communities with which you are familiar?
- What about the treescapes you have may have driven through or been to once? Look through your photographs and/or a photographic book on our country's national parks for reminders as to what our natural, less tampered treescapes of which you have been in the midst.
- If you are an Easterner, do you have a connection to a Western tree species? If you're a Westerner, do you have a connection to an Eastern tree species?

Tree's Big Idea: **CONES**

We tend to call any cone from any conifer, a cone-bearing tree, a “pinecone” (as opposed to a “spruce-cone” or “fir-cone,” for example), but all trees with needles (even scaly needles) have cones. Trees that have cones include: cedar, cypress, fir, juniper, larch, pine, redwood, spruce, and yew trees. Most conifers are evergreen, but at least one species—larch—and two varieties—the dawn redwood and the bald cypress—are *deciduous* trees with cones and needles, needles that they annually lose.

Conifers are among the gymnosperms of the Plant Kingdom. Gymnosperm translates from the Greek as “naked seed”. Gymnosperms are non-flowering. Having no flower, the seeds from gymnosperms develop outside of an ovary, which in an angiosperm—a flowering tree—becomes the “fruit” of the tree. Since gymnosperms don’t flower, they do not form a fleshy—or otherwise—fruit as an ovary for their seed.

Instead, what contains their seed is a rigid cone that serves as a vessel for the developing seeds, each of which rests on the top of its own scale (one “petal” of the cone) and each of which is connected to the core of the cone. Cones can be very tiny or huge. They can stand up, hang down, or be attached along the entire length of a twig[12]. Regardless, when the cone is mature and dries out, the scales will open, allowing the seed to be released: to grow where they fall on the ground or be carried away by the wind, to be eaten by a bird or other small animal or, in some cases like the pinyon, to be harvested by a human.

Cones of both sexes develop on each individual conifer. What we consider a “pinecone,” regardless of the species, is always a female cone. Male cones—less

[12] Shelley Moore, “What Kind of Tree Has Cones” at *Sciencing,* November 22, 2019 https://sciencing.com/kind-tree-cones-5577319.html (accessed 1/31/21).

conspicuous, smaller, and softer—are filled with pollen. Male cones all grow on lower branches of the conifer, so the wind will blow the pollen up to fertilize the female cones.