



Photographs by Gail Littlejohn (left and right), Will Munger (center)

Glorious Weeds!

by Jack Greene

OF ALL THE TOOLS I'VE USED in many years of teaching, I've found plants to be the most exciting, if not transformative. Wherever my travels have taken me — to the inner city of Los Angeles, along the urban trails of Anchorage, to a camp for wayward youth in Michigan, a park in Atlanta, or a campus in Nova Scotia — familiar plants have been there to greet me. Certain plants that we often refer to as “weeds” are ubiquitous, many species being common to virtually all regions of North America. They are free for the picking and often found on or near school grounds. And if you're hungry, they are rich in nutrients, have minimal packaging, and grow organically. Following are a few stories to whet your appetite.

I was invited to accompany a group of inner city youth from Los Angeles on a weeklong backpacking trip in the Sierra Nevada of California. Many of the youth had never experienced the wilds outside of Los Angeles. Once we were on the trail it became apparent that we would have a major challenge to help them enjoy their experience in this strange if not seemingly hostile environment. Along with the unfamiliarity of their surroundings was the added discomfort of carrying a heavy backpack up several miles of steep trail. Although I had never visited the area, many of the plants were common to the mountains of northern Utah where I live, so I began introducing some of my favorites. As always, I found a bit of nibbling on some gastronomic delights to be highly engaging. Within a few hours the complaining had largely subsided as the students' interest in the virtues of nearly every new plant we encountered overshadowed their fear and discomfort. As the week progressed, many of them

became amateur ethnobotanists as their interest and excitement grew along with their taxonomic skills. They were soon teaching one another and constantly discovering new plants to key out.

On another occasion, my teacher son-in-law coaxed me into leading a fifth grade class on a botany hike on the school grounds — a daunting assignment in a schoolyard covered with asphalt and concrete and surrounded by chain link fencing and busy urban streets. But thanks to numerous cracks and holes wrought by nature's weathering processes, there was an abundance of delightful, delectable “weeds”

to collect for study and stories, and later to serve as treats. The children's favorites were pineapple weed and wood sorrel, followed by clover and sour dock. Once again, “weeds” saved the day by generating considerable excitement and adding a new dimension to the schoolyard experience.

As our lives become increasing urban and we drift further from our natural underpinnings, it becomes

imperative that we find ways to help our students reconnect to the broader community of life. Richard Louv's recent book *Last Child in the Woods* presents strong evidence of the relationship between academic performance and outdoor experiences in natural settings. Plant studies offer wonderful segues into the natural realm and “natural” connections between subject areas. If a study of plants includes ethnobotany (the study of how different cultures use plants), it slides easily into the social sciences. If it includes plant population studies, mapping, and other forms of measurement, it is easily incorporated into math activities. Even physical education and technology make the list of related curricular areas, as the location and identification of plants can be integrated into a plethora of exciting and challenging

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orienteering activities using compass or Global Positioning System (GPS) tools.

I often introduce plants by stating that Native Americans had no word in their vocabulary for “weeds,” as all plants had uses. Even poisonous species were often utilized medicinally, or for hunting and warfare. I challenge my students to choose any plant they consider a weed and to find some human use for it or learn its ecological significance, especially in its place of origin. The further they look, the longer their lists grow. They often discover that different Native tribes had different uses for the same plant. Further, I mention that great mystery awaits explorers of the plant world, as new plants continue to be discovered. Perhaps only ten percent have been listed in botanical literature, and of those less than one percent have been researched for medicinal application. Finally, I emphasize that many “weeds” that we attempt to remove from our lawns and gardens have greater nutrient value than our cultivated plants.

Plant identification

There are many excellent resources for identifying plants, including field guides and other books with dichotomous keys, websites, plant collections, and knowledgeable individuals. If your students are from gardening families, they or their parents may be helpful. Master gardeners, greenhouse operators, nature center staff, members of native plant societies, and land management agencies are good resources as well. I have found slides and flash cards of plants to be very effective for teaching my students. In addition, students can use plant identification websites to enhance their skills, and, with a color printer, can make their own flash cards. I concentrate on identifying the most common plants found in the immediate area and group them according to habitat type (e.g., wetland, forest, field, disturbed area).

Collecting and ingesting plants safely

For the plants' safety:

1. Take care not to over-harvest, especially if you find only a few of a particular species in the area.
2. If you are not going to use the root, leave it in the ground to reduce the impact on soil and allow for the plant's regeneration.
3. If the plant is an aggressive invasive species, avoid transporting its seeds.

For the humans' safety:

1. Never eat a plant unless you are certain of its identity.
2. Know which part of the plant is safe to use.
3. Eat only small quantities to avoid possible allergic reactions.
4. If the area has been sprayed, or is an industrialized area, wash plants before eating them and avoid eating large quantities unless they have been tested and are known to be safe.

Other activities

Following is a brief description of some of my favorite activities.

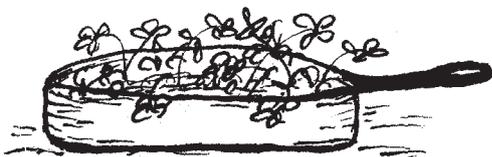
Plant collection: Have students make a plant collection to use as a reference at school or at home.

Food preparation: Research the nutrient values of “weed” plants and compare to the nutrient values of similar cultivated plants (see chart). Try out recipes using native plants and weeds. This can be done as a homework assignment or in a homemaking lab at school. My students bring in their preparations for the class to sample — a potpourri of wildness!

Eat Your Weeds!



Harvesting and preparing dishes of “weed greens” is one of the most enjoyable aspects of a study of wild plants. Most edible weeds and wild plants are low in fat and higher in vitamins than store-bought produce. Compare the Vitamin A and C in wild plants and common garden plants in the chart.



Plant	Vitamin A Units/100 g	Vitamin C Mg/100 g
Dandelion greens	4,931	35
Lamb's quarter	15,000	130
Plantain	10,000	19
Purslane	8,300	26
Prickly lettuce	9,700	44
Shepherd's purse	5,000	91
Broccoli	660	89
Celery	240	9
Leaf lettuce	330	6
Green onions	2,000	32
Spinach	8,100	51

Data on wild and domestic plants are from T.M. Zennie and C.D. Ogzewalla, “Ascorbic Acid and Vitamin A Content of Edible Wild Plants of Ohio and Kentucky,” *Journal of Economic Botany*, vol. 31, 1977, pp. 76-79. Additional data on domestic plants are from Nutrition in Foods, <www.nutritioninfoods.com>.

Ethnobotany research: Research the ways in which plants have been used by people of different cultures.

Weed garden: Till an area and observe the new plants that grow there naturally. “Weeds” are often the first to become established. Identify them and research their uses.

Biotic communities: Observe and list the plant types associated with different biotic communities (e.g., forests, fields, wetlands, shrublands) and with different environmental factors (e.g., sandy soil and clay soil, south-facing and north-facing slopes).

Weed transects: Establish transects and measure and compare native and exotic species of weeds. Track their changes over time.

Plant orienteering: Establish an orienteering course in which students navigate to various GPS or compass points to locate and identify specific trees, shrubs, and other plants.

Weeds in art: Draw or paint your favorite weed. Use weeds for nature crafts.

Plants in your neighborhood

A host of common plants can be found in almost all regions of North America. Considered weeds, many of these plants are loaded with nutrients, have very exciting histories, and ripen well before garden varieties. The following are brief descriptions of five favorites that have wide distribution.¹

Chickweed (*Stellaria media*): Other names include satin flower, stitchwort, starwort, adder’s mouth, and skirt buttons. Harvest time is from early spring through autumn. Chickweed is a tender, mild-tasting plant that can be used in a wide variety of dishes. The greens are low in calories and packed with copper, iron, phosphorous, calcium, potassium, and vitamin C. As its name implies, chickweed is well liked by chickens and other poultry. The seeds have been used for centuries as feed for caged birds. Rabbits and pigs also thrive on the greens and seeds. Ancient Romans regarded chickweed as “the elixir of life.”

Dandelion (*Taraxacum officinale*): Other names include lion’s tooth, priest’s crown, blowball, swine snout, and cankerwort. Different parts of this amazing plant can be harvested throughout the year. Harvest the leaves before flowers appear. Many foragers cut dandelions about one inch below the surface of the ground in order to harvest the tasty dandelion “heart.” Spring and autumn are the best times to harvest dandelion roots. Dandelion buds are good pickled and added to omelettes. The flowers are rich in vitamin D. The greens are exceptionally high in vitamins A, B, and C, and the minerals copper, phosphorus, potassium, iron, calcium, and magnesium. During World War Two, the Russians

cultivated a species of dandelion for its “milk,” which was high in latex and could be used as a rubber substitute.

Lamb’s Quarter (*Chenopodium album*): Other names include pigweed, wild spinach, fat hen, hog’s delight, strawberry blite, and Indian spinach. The best harvest time is

spring to early summer. The greens are rich in protein, vitamins A and C, the B vitamins thiamine, riboflavin, and niacin, and the minerals iron, calcium, phosphorus, and potassium. The seeds are used like poppy seed and are suitable as seasoning or as a grain or coffee substitute. They can even be harvested after a heavy frost. Lamb’s quarter was a famine plant during times of warfare. Napoleon relied on the ground seeds for making a black bread to feed his troops. During World War Two, the greens were frequently harvested as a food source.

Shepherd’s Purse (*Capsella bursa-pastoris*): Other names include lady’s purse, pickpocket, mother’s heart, poor man’s pharmacetty, and pepper and salt. The leaves are best when harvested in spring, the seeds in summer and fall, and the roots in spring or fall. A

member of the mustard family, this highly nutritious plant provides lots of calcium, iron, potassium, phosphorous, and vitamins A, B, and C. The flower buds are high in protein. It is extremely high in vitamin K, the blood-clotting vitamin. Shepherd’s purse was brought to North America with the pilgrims and sold at markets in Philadelphia into the 1800s. It is still grown commercially in China. The seeds are sometimes scattered over water to control mosquitoes, as they produce a gummy substance that binds to the mouths of larvae and kills them.

Plantain (*Plantago major*): Other names include white man’s footstep, waybread, cart-track plant, and soldier’s herb. Early spring is the best time to harvest common plantain greens, while early fall is best for seeds. Seeds make a good, unleavened bread. Plantain provides beta-carotene, calcium, and mucilage, which reduces both LDL cholesterol and triglycerides, helping to prevent heart disease. Scots called plantain the “plant of healing” for its many medicinal properties. On St. John’s Eve (summer solstice) during the Middle Ages, plantain was smoked and then hung in barns and homes as protection against evil. It has been reported that cobra-stricken mongooses neutralize the venom with plantain and that toads have done the same when bitten by spiders.

Giving thanks

While teaching a nature crafts course at Central Michigan University, I had the great honor and pleasure of accompanying Chief Little Elk and his son Little Bear of the Saginaw Chippewa Indian Reservation on an outing to collect black ash trees for a basket weaving project he was assisting me



Lisa Moore

Using a hand lens for close observation of flower parts.

with. While we were bushwhacking our way into a swamp in mid-Michigan a heavy rain began pummeling us. The Chief instructed us to gather any dry material we could find in order to build a fire. In spite of the deluge, we soon had a dandy little blaze going. Assuming the purpose was for warmth, I was puzzled when Little Elk began sprinkling tobacco on the flames and emitting a mysterious, unsolicited chant. He went on for several minutes after which he explained this was common practice — to thank the Earth Mother and Grandfather for the gifts we were about to receive. “We always give thanks whenever we go out to pick berries, hunt deer, catch fish, or gather plants,” he said. It is a statement I will never forget. How far we have strayed from this ancient wisdom of paying our respect and gratitude for the daily gifts we enjoy from our miracle planet!

When harvesting plants, consider performing one of the following harvest rituals,² or create your own ritual with your students.

- Before gathering plants, turn to the seven directions — East, South, West, North, Father Sky, Mother Earth, and Sister Moon — while scattering cornmeal and thanking all for the gifts.
- Seek the elder of the plant community — the oldest tree or strongest plant in the community. Take a moment to meditate. Leave a gift. Mentally ask permission to gather.
- Plant something each time you harvest. Plant seeds where you harvest a root.
- Offer a prayer of thanks for the harvest.

Jack Greene is a teacher, naturalist, activist, writer, and artist who recently retired from 30 years of teaching environmental science and outdoor education in various institutions, organizations, and agencies throughout North America. He lives in Logan, Utah.

Notes

1. Plant descriptions are paraphrased from Janice F. Schofield, *Discovering Wild Plants: Alaska, Western Canada, the Northwest*. Oregon: Graphic Arts Center Publishing, 2000, pp. 288-311.
2. Schofield, 2000, p. 323.

References

Look for field guides and other plant identification resources that cover edible and useful plants in your bioregion. A local native plant society may be helpful in finding such resources. The following books have made the top of my list for detail, accuracy, illustration, and enjoyable reading.

Brill, S., and Dean, E. *Identifying and Harvesting Edible and Medicinal Plants*. New York: Hearst Books, 1994.

Dowden, Anne Ophelia. *Wild Green Things in the City*. New York: Thomas Y. Crowell Co., 1972.

Jones, Pamela. *Just Weeds*. Vermont: Chapters Publishing, 1994.

Schofield, Janice F. *Discovering Wild Plants, Alaska, Western Canada, the Northwest*. Oregon: Graphic Arts Center Publishing Co., 2000.

Websites

<www.nutritioninfo.com>, Nutrition in Foods, nutrition data charts for a variety of foods.

<www.taoherbfarm.com/herbs>, Tao Herb Farm, information on medicinal and culinary uses of over 60 wild plants.

<www.botany.org/newsite/education/>, Botanical Society of America, Education and Teaching pages. This is an extensive and comprehensive site for educators with classroom activities and links to related resources.

<www.accessexcellence.org/RC/Ethnobotany/botlist.html> This National Health Museum site has links to ethnobotany sites all over the world

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