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Wendy Johnson explains the importance of nitrogen-fixing nodules found in the roots of fava bean plants at a "Fertile Crescent" event.

Fava Bean Ecology

by Wendy Johnson

The word "place" is both a noun and a verb. We place ourselves on home ground and take up the real work of coming to know ourselves and our home place in every way. Place is grounded in the landscape of a particular watershed and in the contextual knowledge of that landscape. "The structure of landscape is infinitesimal," writes poet Charles Wright. "Landscape softens the sharp edges of isolation."

A sense of place unfolds slowly over time, always cultured with a ripening of knowledge and commitment of your home ground, although sometimes the best way to connect with the old history of your place is to forget what you know and find a new fresh connection with your home landscape. Whether you have inhabited your place for twenty-five years or for twenty months or even for just twenty-five days, you belong to each other in every way. The voice of your watershed landscape whispers in the bones of your inner ear, claiming you with its old call of falling waters and layered air, its intricate webwork patterns of shadow stitched with light, and its low murmur of broken history and severed dreams.

The living practice and study of ecology depends upon entering into knowledge and relationship with the place and interconnected beings of your watershed.

Receive the tiding of your place by sitting long and still at the edge of a rainy winter night, listening to the needles of the old fir tree on the corner of your land release their icy rain to the night earth or by walking slowly through your neighborhood on a hot summer afternoon when the drone of honey bees pulling sweet nectar out of the thick stands of red clover growing in your neighbors' garden, drowns out distant traffic. Then, as thirteenth-century Japanese Zen Master Eihei Dogen observed, "you find your place where you are, and practice exists."

The living practice and study of ecology depends upon entering into knowledge and relationship with the place and interconnected beings of your home watershed. The word "ecology" summons rooted language, anchored in the old Greek word, "oikos", meaning "household", and related to the original word for "economy", the management and appreciation of the web of resources that supports and maintains our deepest life.

The study of ecology calls on each practitioner to stretch, to give up our small idea of self, and take our true place in the broad, ever-changing body of life. The practice and study of ecology is never a safe field; just when you begin to ground and send roots into the rich topsoil of your home place, ecological literacy and awareness calls you to drop down a notch lower into the rocky uncharted subsoil beneath your landscape, well below any zone of comfort or ease. In these difficult times of challenge and change, we can meet in the deep subsoil of ecological relationship where familiarity with component parts yields to a vast field of wholeness, far beyond form and emptiness, and where, instead of relying

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Biodiversity thrives at Green Gulch Zen Center.

on the prescribed contents of our individual lives, we take our place within the patterns that connect us.

Because they are older than language or thought, the processes by which nature sustains life are intrinsic to the body of life, expressed in the old tongue of common ancestry and blood affiliation. To hearken and respond to these primary processes-that life is organized in networks of relationships, interacting in continual cycles of dynamic balance and change-we have only to ground ourselves in our own life experience and wide sense of our home place and listen to the common vernacular of our shared lives.

This process calls for bringing the heart and mind together in the present moment and for playfulness and imagination, intertwined. "Take up a single green leaf," encourages Dogen, "and turn it into a sixteen-foot-tall golden body!" This is possible because in the wide and ancient field of ecology, a single leaf expresses and influences the entire world when you examine it with a sincere, open and respectful mind.

This spring, just a few days past the vernal equinox, I went out into the endless fields of Green Gulch Farm where I have lived, gardened, and practiced meditation for almost 30 years, and dug up a single fava bean plant from our almost 5-acres stand of green manure winter crop. Every winter we plant a mixed selection of hardy legumes to build fertility and protect the bottomland fields of the Gulch, as well as to prevent soil erosion into Redwood Creek, the main tributary of our home watershed.

The Redwood Creek watershed is nestled in one of the nation's most densely populated regions, extending from the peaks of Mt. Tamalpais, Marin County's tallest mountain, to the Pacific Ocean, the watershed encompasses an area of less than nine square miles, yet it harbors an incredibly diverse ecosystem and rich assemblages of plant and animal species. Within this small watershed are found grasslands, coastal chaparral, mixed hardwood forests, old-growth redwood forest, seasonal wetlands, and riparian woodlands that extend in an unbroken mosaic from the mountain's ridge tops to the sea. This watershed is also home to some of the West Coast's most imperiled species, such as Coho salmon (Oncorhynchus kisutch), steelhead (O. mykiss), northern spotted owl (Strix occidentalis caurina), California red-legged frog (Rana aurora draytonii), and rare plants that occur only on patches of serpentine soils such as those found in the upper watershed.

The roots of the fava bean are host to a range of microscopic bacteria that are able to consolidate nitrogen from the atmosphere and fix it on the roots of the plant in small, pink pouches of protein.

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Rolling hills and oaks of Marin County in spring.

In addition to its local and regional importance, the watershed is part of the San Francisco Bay Area Region, one of 25 global biodiversity "hot spots" recognized by The Nature Conservancy and targeted by the global conservation community as key to preserving the world's ecosystems.[1] Hot spots are areas that are both at the greatest risk and shelter the largest concentration of species

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found nowhere else on the planet. Collectively, the 25 hot spots cover about 1.4 percent of the planet's surface, yet they harbor more than a third of the known species of vascular plants, mammals, birds, reptiles, and amphibians on earth. Only five of these hot spots occur in the continental United States. The watershed is also within the Golden Gate Biosphere Reserve, one of 411 reserves designated by the United National Educational, Scientific, and Cultural Organization (UNESCO) Man and the Biosphere Program to provide a global network representing the world's major ecosystem types. (Excerpted from the Redwood Creek Watershed Vision Internal Draft, November 2002.)

On an absolutely local level, the fava bean of antiquity growing rampantly throughout our farm fields is a guardian plant for ecological health and fertility. In each of its soft, blue-green leguminas leaves, the fava manifests a 16 foot tall golden body of awareness, teaching loud and clear in fava language, the interconnected natural processes at work in our home place.

The fava bean, or vicia fava, is an Old World legume, originating in the Fertile Crescent of the Middle East. Domesticated during the Neolithic period of agriculture more than 10,000 years ago, traces of fava beans have been retrieved from Egyptian tombs and this bean is mentioned in the text of the Old Testament. Prized by the ancient Romans, the fava bean and slips of the grapevine were carried and grown wherever Romans traveled.

Because all members of an ecological community are entwined in a vast network of relationship, the fava bean has a primary place in the web of soil fertility. The success of the entire field depends on the health and vitality of its individual members, therefore, the fava bean in my hands is essential to the continuous fertility of our Zen farm.

As early as 300 B.C.E., the Greeks wrote of "the ability of beans to reinvigorate the soil and manure the farmland". The roots of the fava bean are host to a range of microscopic bacteria that are able to consolidate live nitrogen from the atmosphere and fix it on the roots of the plant in small, pink pouches of protein. Then, when the fava plant is either dug into the soil or harvested for compost, this nitrogen is released as protein-rich food for the soil or the compost pile.

Since the stability of every ecosystem depends on the complexity of its network of relationships, the fava bean is a powerful, green networker. Not only does this ancient plant deliver benefit to the invisible clouds of microorganisms that inhabit and compose healthy soil, it also protects the skin of the earth from erosion and desiccation, serving as an insulating blanket to keep the soil warmer in winter and cooler in early summer. In addition, fava bean flowers attract a wide variety of beneficial insects which feed on its blossoms and stem nectaries and strengthen the network of complex life in our organic farm ecosystem.

Carrots, radishes, and flowers adorn a shrine at Green Gulch Zen Center.

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The fava bean is an Old World legume originating in the Fertile Crescent region of the Middle East.

The nutritional and growth cycles of the fava bean intersect with the larger cycles of our watershed; the cycle of the seasons and the ebb and flow of the tides that influence and determine the healthy growth of plants are all revealed in the cycle of the ancient fava bean, especially since all communities of organisms have evolved over billions of years, sharing and recycling the same water, earth, fire, and air.

In every ecosystem, cycles are sustained by cooperation and change as all beings live off of the life and decay of one another. When a fava bean seed is sown on fertile bottomland, it germinates mightily, sending new roots populated with beneficial bacteria down into the dark land and stretching a balance of green top growth above ground. Although the annual cycle of an individual fava bean plant is short, its benefit is long and abiding. As the fava bean dies and decays, it releases nutrients to soil and microbes, improving the life of the field with its own death.

All ecological cycles serve as feedback loops, continually regulating and organizing their own flow. This is true with individual plants like the fava bean as well: death balances life and feeds the entire field, while poison is in dynamic relationship with medicines' power. Fluctuation and flexibility within each specific plant community indicates an overall health and dynamic balance in the wider ecosystem.

Fava Bean Purée

Ingredients

3# fresh fava beans
½-1 cup extra virgin olive oil
Salt and pepper
2 cloves of garlic
1 lemon
(herbs to taste)

Boil a large pot of water. Shell the favas and compost the pods. Parboil the shelled beans for 1-2 minutes. Drain and plunge them in ice water, then slip off their skins and compost the skins.

Press the garlic and mix the oil and lemon juice with the fava beans and blend the ingredients with the mortar and pestle. Season to taste and spread on toast or a cracker to enjoy!

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Young student enjoys smells of freshly harvested leek.

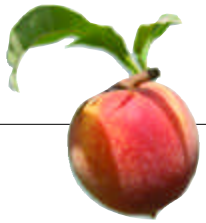
The flower of the fava bean is one of the only known blossoms to carry black pigment as its insignia, lying next to clear white petals. The ancient Greeks used fava beans as voting tokens in magisterial elections and to decide hung juries. "Abstain from beans!" advised Plutarch, which may have been an old way of advising one to keep away from politics or at least from fava beans, since this plant is poisonous to some, causing a rare disease called favism. However, fava beans are also a primary source of L-Dopa, a chemical neurotransmitter used in the treatment of Parkinson's Disease. Danger and relief exist in dynamic balance in this one ancient plant!

The same fundamental core concepts that influence the health and continuity of the fava bean plant also bring vitality and understanding to our home place. The sharp edges of isolation are softened when we see our home landscape alive with networks of interdependence. Understanding the cyclical flow of our lives and the life of the place where we live and participating in the dynamic balance of our home watershed helps us to settle ourselves on ourselves and to find our place, where we are, in relationship with all that is.

Wendy Johnson has thirty years of hands-on experience with organic agriculture, education, and Zen meditation training. An active member of Green Gulch Farm Zen Center since 1975, where she raised her family, Ms. Johnson is a founding director of the Organic Farm and Garden Apprenticeship Program at the Zen Center and has worked for the last ten years to establish gardening programs in Bay Area schools.

[1] Stein, B. A., L. S. Kutner, J. S. Adams, eds. 2000. Precious Heritage: The Status of Biodiversity in the United States. Oxford: Oxford University Press.

The Center for Ecoliteracy is proud to have convened the "Fertile Crescent Network". To learn more, visit www.ecoliteracy.org.



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