

# Cultivating a Relationship with Nature through Gardening

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Gardening is a practice through which the division between humans and the rest of the world can be bridged. This practice is highly personal, providing real physical places to contemplate the world through the cultivation of plants. How do people form critical associations with their surroundings from which they can draw a deeper appreciation of nature? Mature gardeners understand the vital role that gardening has played in shaping not just their yards, but also their personal relationships with nature. By nurturing plants outdoors, gardeners cultivate an important connection between the human spirit and nature. Through exploring this reciprocal relationship, gardeners can experience the complexity of nature directly and use their resultant observations to more deeply understand their own humanity.

This essay will examine the nexus between nature and culture by illustrating how gardening enriches landscapes and the human experience. It begins with a few seeds for an emerging hypothesis on how people can cultivate deeper meaning for their lives and diminish the dissonance in their relationship with nature in the garden. To nurture this concept, the seasons provide a milieu that dictates much of what a gardener can accomplish mentally and physically. To nurture this discussion, some current environmental topics are intertwined with the text to provide a framework between the garden and nature. These include: interactions among exotic and native species; ecological and social implications stemming from globalization; the tensions between wildness and domesticity; and finally how gardening engenders a legacy. Through this discussion, a tapestry will emerge that links human hands, minds and spirits to the literal landscape that sustains all life.

*Gardening: An Ideal Way to Bridge the Human Nature Divide*

Gardening provides an ideal perspective for examining the relationship between humans and the rest of the biosphere because the entirety of nature is replicated on the diminutive scale of our garden plots. This brings nature to a perceptual scale that can be comprehended. By manipulating his local landscape, a gardener initiates a dynamic interplay that results from his actions and nature's response to them. Gardening is simultaneously a creative and destructive force that fundamentally changes the ecological and aesthetic nature of the landscape through controlled disruption. Typically, gardening demands that soils be amended, preferred species be cultivated and disturbing weeds be eradicated.

The gardener's work discloses collaboration among a gardener's hands, his imagination and the natural processes outside of his control. In the resulting tension among these competing elements, the gardener simultaneously pits his wiles against nature, yet is obliged to work within its confines. In his own back yard, a gardener can ply his craft to learn from the plants he is tending. At this point of convergence between the creative and destructive, gardeners create scenarios that nourish their bodies and souls.

Human nature is a complex concept that incorporates the totality of physical and transcendental needs. Gardening provides a vehicle for making symbolic connections between the corporeal and inspirational realms, producing insights that enrich our lives and cultivate wisdom. This is gardening's greatest virtue. Beyond satisfying aesthetic desires, the garden provides a visual metaphor for nature's handiwork that emerged over millennia. Experiences in the garden can condense nature's work into a time scale appropriate for human comprehension. The mature gardener uses the wisdom earned from his labors to mediate conflicting values that bombard everyday life.

In addition to rendering abstract aspects of human nature more accessible, gardening also presents a plantsman with opportunities to define order and meaning in his world. Through understanding the true structure of nature, the complexity mirrored in a gardener's own existence is revealed. The deeper his appreciation for the possibilities that nature holds, the closer his insights approach the diverse reaches of his own humanity.

Neophyte gardeners attempt to impose order by planting seeds in sterile rows. Often, they fail to consider the cultural requirements of the species they select, and instead focus simply on the inflorescence, color and appearance of their cultivars. For beginners, learning to grow a new plant is a battle between their underdeveloped cultivation prowess and whatever vagaries that nature brings. The unsophisticated result is a simplistic tableau that reflects a one-dimensional understanding of form and function. With practice, neophytes develop their skills and move to a more complex design that is more functionally and aesthetically effective. Through this progression, gardeners can use the resulting information to build personal meaning.

As gardeners develop a more sophisticated understanding of the horticultural arts, battles give way to conversations. This dialogue can take many forms. Plantsmen learn to select plants appropriate to their ecological setting that embody a broad palette of colors and textures. Mimicking nature, a mature gardener reveals his intentions by evolving his designs into increasingly complex arrangements. Through examining the layered patterns and textures, a grounded purpose can be drawn. By figuring out what works in actual gardens, gardening enthusiasts form analogies that decipher the jumble of signals that assail them daily.

A gardener's niche is not immune to natural forces that operate in and around it. These ecological features do not respect artificial borders that the gardener establishes and move freely across spatial and temporal boundaries

that delimit his perceived niche. Like an ecotone, our yards form the interface between human and plant communities. They are a proving ground where ideas about the human role in nature can be evaluated and expanded upon, a veritable laboratory in which people can formulate more informed perspectives about how human nature and ecological nature interact. Through this analysis, people can resolve their conflicting sensibilities about what it means to be human.

A gardening life pits plant and human actors on a level playing field, where nature is the referee. Whether the garden is a full-time obsession, or merely a weekend flirtation, tilling the soil provides metaphors to explore how our actions may impair local ecology or facilitate a more harmonious collaboration with nature. Regardless of whether a gardener is a serious or casual participant, he must periodically make decisions concerning the structure of his plant beds. In formulating his course of action, the gardener must fuse pragmatic and aesthetic considerations. For instance, it is not sufficient that he simply consider the horticultural requirements of his select cultivars. He must also consider whether they are within his budget and appropriate in the immediate landscape. Through addressing these considerations, gardeners must balance inherent qualities of nature and the land with human use.

Gardening is an active engagement with the natural world. Planting a seed, running one's fingers through the soil, or watching a plant grow, are living embodiments of this personal exploration process. Through cultivating a particular parcel over a series of years, a gardener develops a personal stake to that place. On the surface, this period of collaboration provides the plantsman with a gauge to measure time and change. Exploring the garden metaphor more deeply reveals that plant generations replicate human experiences of life and death. By witnessing life's processes in their tended parcel, gardeners can invite the existential questions about nature to permeate their lives.

I believe that exploring the creative and destructive forces that gardening entails is crucial to forming a personal philosophy because it engages the human spirit in a direct connection with nature in all its complexity. Gardener and habitat collaborate and take cues from each other together to gestate a new expression of nature. In this essay, I will use four seasons and four plants to illustrate how the experience of gardening helps gardeners explore and transcend the larger dichotomies inherent in their relationship with nature. In the Northeast, nature provides a sequential cadence that guides the gardener through the course of four distinct seasons. Gardeners look to the seasons for thematic inspiration and tempos that orchestrate their activities.

### *Winter-A Time to Reflect*

By the time of the winter solstice, a plant's living essence has completed its journey downward from leaf tip to stem root, and entered the protective nest of the soil (Nollman, 1994). Outwardly, the plants appear dormant. Likewise, it seems the gardener is doing nothing. Despite the apparent inactivity, winter actually is a dynamic time when plenty is going on out of sight. While the landscape appears generally austere, the subsurface soils nonetheless are teeming with life.

In the bleak New England winter, the plantsman is left to speculate on what ecological functions persist when nature cleans its slate from one planting season to another. With each snowfall, the ground becomes a renewed canvas, inviting the gardener to idly plant and replant countless imaginary designs. This is an important interlude for the gardener to physically and intellectually rejuvenate after a year of focused effort. It also allows a respite during which he can reflect on the past year's successes and failures, subsequently integrating new ideas to explore and reflect upon in the coming planting season. At face

value, this period of introspection prepares him for a more successful planting year that builds upon his expanded horticultural experience. Yet looking more deeply, this reflective interlude inspires personal growth by providing rest and introspection.

Like his plots, the gardener's winter activities go largely unseen. Driven indoors by the cold and damp, he simultaneously becomes introspective, retreating within himself to a more cerebral stance. While the snow falls and winter winds howl, he is at leisure to use his imagination to explore and ponder the possibilities for how both he and his landscape will be transformed in the coming year. This practice entails importing fresh ideas and new plant varieties into the emerging landscape designs that evolve in his imagination.

Outwardly dormant, both plant and plantsman rejuvenate themselves from deep within. Yet, a great deal is happening to both the plants and their caretaker. Physiologically, the plants are reshuffling their energy reserves to prepare for more active life phases. Likewise, the gardener prepares for warmer days outside by consulting catalogs and gardening books for new ideas and horticultural guidance. In addition to providing inspiration for next year's planting plan, these materials present modest agendas for social, political and moral instruction (Pollan, 1991). Each catalog extols the virtues of a particular lifestyle or worldview. For example, planting native species and avoiding invasive exotics are currently in fashion.

While the plants' physiological changes are relatively predictable and straightforward, the processes being undergone by the plantsman are more complex. That is because the gardener is not simply preparing himself for the physical tasks before him. Instead, a gardener's planning time provides an important opportunity to collect complex data and organize them into a more meaningful form. The resulting insights do not simply make him a better

gardener. In particular, gardening serves as a graphic metaphor that is instrumental to a gardener deciphering his personal niche.

During the winter the gardener's outer world is dormant. It is a time of respite from the physical activities of maintenance. During this time, a gardener can dream about his garden. He is at leisure to contemplate the possibilities the landscape holds for the coming year, and also to imagine the red buds and green shoots that eventually will emerge defiantly in the cold. These hopeful images stand in stark contrast to the virtually unrelieved white palette that characterizes a New England winter. They provide escape from the monotony. All that's left is an inner faith that the renewal of the Earth eventually will supplant this season of greatest darkness.

In speculating about his garden in the ensuing year, a plantsman is at leisure to pour through envelopes of seeds collected during the previous season. It is a time to reflect on the past year's successes and failures. While designing future beds, plantsmen typically consider which varieties were successful with each other in previous years. As the landscape sleeps under a white blanket of snow, the gardener rejuvenates his body and his intellectual batteries. While his dormant plants prepare to sprout real shoots or leaves, he occupies himself by sporting ideas that inspire plans for the upcoming season.

Given the diverse nursery offerings and improved shipment procedures, gardeners may select plants that originate from virtually any continent. That means that a given garden plot is likely to contain species similar to local varieties and others of more exotic origin. As he pours over catalogs, a gardener may question whether to utilize both exotic and native plants. Currently the use of exotic plants is an environmental controversy in gardening circles. In landscapes so blended by years of human intervention, which plants are exotic and which are truly native? In the suburban landscape, sprawl has juxtaposed many new varieties with others that have been resident for centuries or



millennia. With the expansion of human settlements into previously undeveloped tracts, the ecological and aesthetic natures of the landscape become fundamentally changed. This expansion results in a homogenized sameness to the landscape with relatively few species of plants used.

Gardening shapes the physical landscape and influences societal norms related to residential landscaping practices. In particular, suburban yards replace diverse natural ecosystems with more simplistic plant communities that displace native types. Often times, gardening brings a new dynamic to the aesthetic and ecological mix. For instance, when the newcomers are invasive exotics, their very presence can jeopardize the health of the local landscape, when introduced plants overrun and displace natural communities. These exotics are defined as plants that became introduced after the first European contact.

As a gardener, it is difficult to label all exotic species an ecological bane. Certainly, through judicious selection, the problem of invasiveness can be avoided. In addition, societies depend on “exotic” species to produce the food crops that sustain them. Along with human and animal migrations, plants have been dispersed far from their native ranges. Only some of these movements have been intentional. In modern times, the socio-economic drive that fuels globalization has as its partner accelerating plant dispersals to nearly every part of the globe. Some of these movements result in relatively benign impacts while others can be extremely destructive.

For instance, olive trees can be cultivated for their fruit and oil with minimal chemical intervention. Beneath the trees, relatively intact grassland communities can coexist with this crop and continue to play a diverse ecological role. Conversely, massive monocultures of grains like rice, corn, and wheat destroy the natural ecologies of the soil horizons and native plant communities. The expansive areas maintained under cultivation are continually disturbed. In

this way, the practitioner's choices determine whether the cycle of disturbance and creation is acute or chronic. To what effect does this reduced biodiversity impact a gardener's perception of his own place in the garden, his own role in the landscape?

To explore this question, I will use the rhododendron as a prime example to discuss the interactions between exotic and native plants, and subsequently to explain how these interactions are ecologically and culturally significant. Rhododendrons are popular landscaping plants because they are hardy, and a lasting member of the local landscape. They bloom prolifically each spring and provide aesthetic backdrop throughout the year.

While rhododendrons have some remote relatives in Connecticut that are truly native by anyone's definition, the varieties that are planted ubiquitously in typical neighborhoods originate not in North America, but Asia. These plants have prospered in a new environment far from their native range. Nevertheless, ever-expanding populations of native deer threaten their survival by feeding on them in the winter when native plant material is scarce.

The ensuing battle between the suburban homeowners trying to protect their landscape investment and the deer that are trying to scrape a living from the land, exemplifies an unresolved tension between the native and the exotic (Nelson, 1999). Drawing from the examination of the ecological conflict among deer, rhododendrons and humans, these interactions can inform key perceptions about what it means for a gardener to be native or a stranger in his place of residence. Concomitantly present day rhododendrons may be incompatible with the suburban landscape. Ever-expanding populations of native deer in the suburbs have come to find the rhododendrons to be a tasty alternative food source to native plant material. Rhododendrons increasingly serve as emergency food banks for expanding deer populations.

Deer browse is annoying to the gardener and disrupts his visions for the landscape. Ironically, the deer's acceptance of alien rhododendrons as a primary food reserve demonstrates that these shrubs have become naturalized in the truest sense of the word. Despite periodic grazing, rhododendrons are capable of rejuvenating their foliage and blooming a scant few months later. Nonetheless, the inevitable battle between suburban homeowners trying to protect their landscape investment from deer that are trying to scrape a living from the land is an apt metaphor for the unresolved tension between the native and exotic. With each winter, opposing plant and animal forces reenact competing values as ecological imperatives become pitted against aesthetic sensibilities. Like Prometheus, their agonized conflict seems perpetual.

This past winter, resident deer populations invaded my yard. Like waves of marauding locusts, they dined voraciously on the luxurious foliage of my specimen rhododendrons and also of native mountain laurels and hemlocks growing nearby. It did not matter to the deer whether the plants that sustained them were exotic or native. Instead, their unrelenting instinct to survive prompted them to consume whatever appropriate fodder nature could provide. Ironically, by becoming accepted by the deer, the rhododendrons finally became fully integrated or naturalized to their hilltop setting. This observation inspires hope that the same drives are present in humans, that they are programmed by nature to accept a spectrum of life forms even if it takes some coaxing to get them acculturated.

The environmental philosopher, David Barnhill (1999), has come to a similar conclusion. Much like alien botanicals, he sees himself as being an outsider in his present setting. Yet, his vision for typical human behavior in nature is as an invasive alien that destroys complex ecological structures that stand in its way. He sees the human challenge as learning to change their ways

so that their interactions with nature and each other are more compatible, like a fully naturalized plant. This process may be long and difficult, but it is essential to forging a partnership between nature and society.

*Spring-Nature and the Garden Reawaken*

Garden endings evoke garden beginnings. During winter, the coldest time of the year, there is always more life below the soil surface than above it. Deep beneath the sleeping landscape, the ground remains a constant forty-five degrees, keeping the dormant landscape alive, insects, microbes and roots. The return of migratory birds heralds the triumphant return of spring and the gardener to the outdoors. Catching the exuberant energy displayed by the sprouting vegetation, the gardener moves into a more active orientation.

As the cold winter gives way to the warmth of longer days, life begins to stir in dormant trees and plants. Inspired by drenching rains, the elixir of life, plants assume their resplendent green mantle. Unlike the other seasons, spring can announce its return with gentle tenacity or bold exuberance. The choreography of events can be extremely gradual or explosively swift. Physical cues like increasing day length; warmer temperatures and the return of migratory birds accompany sprouting of vegetation and beckon the gardener from winter passivity. These kinetic, ecological changes are irresistible incentives that motivate his return to a more active stance outdoors. Not only do these cues portend the rebirth of vegetation, but they also rekindle the emergence of an inner spirit that the gardener uses to contemplate his relationship with nature.

Each year begins much the same. The gardener gradually reacclimatizes himself to the new and unfolding landscape changes that surround him. Industriously turning the soil, he prepares his beds and puts his winter plans

into action. Becoming rejuvenated by the joyous renewal being celebrated in his yard, he finally casts the final throes of winter lethargy behind him. Gaining confidence and renewed strength with every day, plant and gardener collaborate on what their mutual surroundings will become. Simple acts of destruction like turning the soil create opportunity for new communities to emerge and perhaps even become established. While the mechanical details embody the gardener's craft, learning what works and does not work together in a chosen setting is the necessary art for creating a diverse and successful community.

Reacquainting himself with the outside world of nature, he industriously turns the soil and prepares his beds. In an explosion of joyous renewal, the new compositions created by the gardener's carefully selected seeds, corms and tubers explode from the earth in defiance of the volatile spring weather. Whether chosen from the pages of a seed catalog, or from the gardener's personal cache of favorites, the successful ones take off in a frenzy of rapid vegetative growth. Often, these propagules include species or varieties that traveled to a particular yard from distant places, recreating the diasporic journey that many an immigrant or refugee traveled from a homeland of origin to another destination from which they have been displaced (Cohen, 1997). Cultivating traditional plants creates a nostalgic backdrop reminiscent of their landscape of origin, and preserves some of the cultural practices associated with tending the plants.

Exploring how globalization pressures influence cultures and landscapes and exploring the tensions between wildness and domesticity provides historical context to the present day gardener. In addition to displacing plant communities, plant domestication and agriculture have relegated wildness to nature preserves and isolated parts of the globe. This is the dilemma of Neolithic society: agriculture destroys biodiversity, yet without practicing plant and animal domestication, human populations could not survive. Through personal

experiences of creation and destruction, the gardener is better equipped to understand how fragile the human relationship with nature can be. When this relationship is cultivated in one place over many years, the connection can be especially profound. Unfortunately, current trends in the United States encourage suburbanites to forsake their homes on the average of every four years. This short habitation is not sufficient to inspire clear insights about the human-nature connection.

What does it mean when plants and people move from widely separated regions and strive to survive in a new land or even just a new yard? Just as the sounds and smells of spring signal renewal, so do the movements of plants across the global landscape. Now that distant transportation is incredibly convenient, modern folks move more freely throughout the world than ever before. Inevitably, when becoming transplanted immigrants, these travelers bring along practical or sentimental reminders of the plants that made them feel at home.

The movements of plant dispersals beyond their native ranges promote different forms of agriculture and horticulture. While these actions at least initially seem to increase biodiversity, they eventually can lead to just the opposite: fewer varieties appear in personal and commercial scale gardens, or in the landscapes that support them. Especially when people become increasingly reliant on fewer plant species to provide food, shelter and aesthetically pleasing yards, the result is a more homogenized ecological community. Some writers, like Vandana Shiva (1993) “deplore this globalization trend because loss of cultural diversity often accompanies it.”

Globalization is an emerging phenomenon that makes movements of people more feasible; it speeds up the dissemination of plant materials to places that nature might never have intended. What is the relevance of these movements? Do they help preserve cultural legacy or extinguish it, blending

human and ecological elements into a more homogenous stew? How do these movements impact the human experience?

The suburban front lawn, so common in most of the Northeast, may provide the answer. In the United States, as well as much of the rest of the western world, ideal lawns are maintained artificially as monocultures of some single grass variety. Maintaining the lawn as a continuous, smooth green swath has great ecological consequences because monocultures generally are not a stable, natural state. Environmental writer Virginia Jenkins (1994) muses that there are fifty million acres of lawn in the United States that doesn't provide a crop of any sorts. The ramifications of keeping lawns green, speaks to some of the relevant cultural and ecological possibilities that accompany globalization and the diasporic migrations of peoples.

The domestic front lawn is dependent on our ability to grow grasses as well as the aesthetic desire of the homeowner for a lawn. The availability and affordability of the tools and grasses needed to grow a lawn have shaped individual choices. Serving as a globalization link, appropriate lawn grasses have been collected from all over the world and through hybridization lawn grasses were developed that will grow in all parts of the United States. The consumption of billions of dollars' worth of goods and services necessary to support millions of acres of lawn grasses in the late twentieth century is the consequence of deep alterations in the lives of working people. The five-day workweek, less physical labor on the job, rising affluence, home and automobile ownership and other new conditions of daily life made this landscape form possible and seemingly natural to twentieth century Americans.

## *Ecological Implications of Lawns*

Mowed lawns were popularized in the mid-nineteenth century, exploding on the scene with the creation of the American suburb (Jackson, 1985). Because the upkeep of lawns required intensive labor, only wealthy landowners initially kept them. Accordingly, well-manicured yards became primary status symbols that conveyed impressions of elevated social standing. In particular, lawns became the quintessential symbol of suburbia. Unifying entire residential compositions into a single neighborhood, lawns engendered a sense of amplex and community (Beveridge and Rocheleau, 1995).

Ironically, lawns also reflect the homogenized sameness that spawned modern suburban sprawl (Condon and Proft, 1999). From an ecological perspective, suburban communities are relatively less diverse since comparatively few species are selected to establish lawns and foundation plantings. In tract housing, the staple of suburban communities, the lawns demarcate individual parcels by creating visible boundaries.

Much like the interfaces between garden beds and lawns, the plantings and other dividers between properties in a suburban tract form an ecotone joining the individual parcels into an integrated whole. Like the cells that make up biological tissues, these boundaries are mutually permeable, so activities taking place in each parcel tend to affect conditions in adjacent tracts. This observation is reminiscent of Vernadsky's biogeochemical model that expresses complex ecological relationships in terms of the functions of biological cells (Vernadsky, 1997). Extending Vernadsky's metaphor to the tissue level, the ecological integrity of a single yard can affect the health of the greater community. For example, fertilizers and pesticides applied to lawns and other



vegetation in one parcel flow freely across the watershed with every rain (Guillard, pers. comm.).

The landscape of our desires is not always ecologically appropriate (Borman et al., 1993). Even an experienced gardener can make this mistake by keeping his lawns in perfectly green and manicured condition even when climatic conditions are not appropriate for sustaining turf. To defy nature, he must apply exorbitant amounts of water, fertilizer and pesticides to nurse the grass through less than optimal growing conditions. At best, this is an inefficient and resource consuming practice. Yet, without these inputs, the grass cover would diminish and eventually disappear (Kenfield, 1991).

Gardening does not achieve its full potential until it is practiced as a true art. A few basic facts about the species being cultivated are not enough to insure that they will develop into a vibrant community. The plants and the physical landscapes must respond in concert to the uncertainties that nature brings. Outside of the gardener's complete control, climatic changes are like cards that can be dealt at any time. A successful garden landscape must be sufficiently diverse and robust to withstand nature's vagaries.

The spring of 2007 has been a classic example. A week ago, the temperatures soared well into the upper nineties, registering record heights. Today, the placid spring sky suddenly was displaced by an inky shroud of slate gray clouds that erupted in a violent explosion of damaging hail. Hunks of ice, ranging from modest flecks to pieces nearly two inches in diameter, pierced through the grayness and blanketed the newly germinated grass in a surrealistic rime. Downed vegetation lay in testament to nature's sudden fury. Yet, within an hour or two, the green character of the lawn was restored (even refreshed) after the unexpected ice had dissipated.

These seesawing climatic changes affect the progression of individual plants and varieties as the seasons unfold, ultimately determining the aesthetic composition of the garden. Gone are the shadblow inflorescences, which already shed their magnificent white flowers in the wake of summery heat. Oaks, hickories and black birches are waiting to flower; their time will come later. Vegetation pelted by hail will eventually drop damaged leaves, renewing battered parts with intact foliage and inflorescences. So, too, will seeds and bulbs planted in fall respond to the dynamic forces that shape their environment.

Within the gardener's yard, both native and exotic plants join in the frenzy of rapid growth and flowering. Spurred on by the increasingly warm sun and spring showers, members of this mini manmade ecosystem assemble like members of an orchestra, each contributing its part to the symphony of growth and color. Lumbering bumblebees, clumsily fly around searching for open inflorescences. Native wildflowers such as trout lilies, trilliums and wild columbines flower in tandem with exotic species of white and golden daffodils, tulips, fragrant hyacinths, and bright pink flowering rhododendrons. Weedy introduced species, such as the dandelion, punctuate the greening lawn.

Every gardener must accept responsibility for his actions in the broader context of his bioregion or even the world at large. Initially, it is probably enough that he makes wise choices about the species he introduces and cultivates in his garden. Avoiding weedy species that could proliferate widely and taking pains to encourage as diverse a plant assemblage as possible are important rules of thumb to protect the local ecology. After a time, experience may provide insights to more global implications of his craft. Even simple acts like permitting natural vegetation to persist on a portion of one's property preserve some semblance of natural diversity. In some small measure, such efforts can blunt the impacts of globalization by providing examples that facilitate a deeper

comprehension of how disparate species can learn to coexist (Thomashow, 2001). A vital and resilient community of plant species, like any diverse garden, can thrive together.

### *Summer-Domesticating the Wild*

In the garden, wild nature is captured, brought under human control, and required to exhibit particular attributes that meet anthropogenic needs and expectations. These actions reduce the inherent diversity of species kept in cultivation by weeding out the less useful attributes of wild types. The next section of this essay will explore key distinctions between wildness and domesticity, highlighting the ecological implications of human influence on the form and function of the species they cultivate by exerting selective pressures that otherwise would be provided by nature, bringing organisms under human control. The summer garden will illustrate the conflicting needs for freedom and a civility that dictates normative societal boundaries.

While the extended daylight hours allow for more time in the garden, the increasing heat and humidity dictate that people adopt a more deliberate pace. Especially during the heat of the day, “even the most hard core gardener’s plans to accomplish work outside are thwarted” (Masumoto, 1995). The most pleasurable gardening rituals become a chore and necessitate that only the most essential tasks are completed. Serenaded by the cicada’s song, or beckoned by the canopy of the nearest maple, the plantsman is drawn out of the intense sun. The very same solar energy that saps the gardener’s strength fuels explosive vegetative growth.

Unlike winter and spring, when soils tend to be saturated most of the time, summer’s heat bakes the earth dry. Almost like talc, clouds of dust become

airborne from the substrate with every swing of the hoe. As though perspiring, the still air becomes laden with excess moisture. At this time of year, the biosphere feels like a giant enclosed greenhouse in which the heat and humidity are cranked on high.

The mutual thirst of plants and their caretaker must be slaked with regular doses of water to counter the desiccating effects of the sun. In attending to the water requirements of each cultivar, the gardener taps his horticultural expertise to determine which plants require his attention on any given day. Some ornamental plants like mountain laurels, bayberry and black-eyed Susan's are nearly drought tolerant. Other species, notably the colorful annuals and vegetables typical of suburban gardens, require a steady supply of water if they are to prosper.

Despite their ability to withstand the vagaries of nature with little to no assistance, native ornamentals typically are not focal points in modern gardens (Wilson, 1992). Most commercially available flower and vegetable varieties are domesticated cultivars developed originally from wild stock. The domestication process probably began when ancient gatherers saved seeds from the largest fruits, exaggerating particular phenotypes, or most resilient species to plant in the following year. In so doing, these early cultures not only increased their personal chances for survival, but also selected for key attributes (Harland, 1995). Over successive planting seasons, their crops began to evolve into varieties that increasingly exhibited those preferred characteristics.

Selective breeding processes became more directed when people learned to manipulate plant characteristics with greater predictability. One unanticipated cost of hybridization was that favorable attributes of the wild type sometimes fell to the wayside at the expense of the next generation's vitality. Because the resultant hybrids tended to be less ecologically fit than their original

land race (Nabhan, 1995), gardeners had to accept more active roles in ensuring the continued vitality of these hybrids.

A prime example is the modest tomato. This popular treat is descended from the deadly nightshade family, which bears poisonous and malignant fruits. Domesticated from wild progenitors, tomatoes have found their way into virtually every place that gardeners are able to cultivate the soil. Available in a wide diversity of cultivars, tomatoes are able to thrive in a spectrum of environmental conditions ranging from relatively cool (but temperate) climates to steamy tropical gardens. Today, tomatoes come in a variety of colors, sporting fruits in shades of red, pink, yellow, orange, white, purple and even green. Their colorful berries capture the jubilant mood of summer and condense the very essence of the season in their juicy flesh. There is nothing like plucking a tomato right out of the garden and eating it raw.

### *The Long Journey of the Tomato*

Most gardeners believe that tomatoes originated in Italy, probably because they have become so deeply ensconced in that country's culinary tradition. In fact, tomatoes originated from weed races in Mexico (Jenkins, 1948). Despite their humble origins, tomatoes have become one of the most popular crops grown in the United States, ranking second only to potatoes in economic value. They are the almost universal favorites among home gardeners, who value their prolific yield and easy culture (Wyman 1978).

The domestication of the tomato, and its worldwide travels, is a curious story. Not easily recognized, wild tomatoes are still found along the coasts of South America, specifically Ecuador and Peru. It is unclear whether South American Indians domesticated the tomato in pre-Columbian times. There is no

evidence of names for it in any of the South American languages nor is it found in any archaeological remains.

In Mexico, however, the cultivated tomato is well known. Jack Harland (1995), a professor of plant genetics, asserts that the Mexican Indians had a name for this wild tomato, jitomatle in Nahuatl (Aztec). They cultivated it, traded it and prepared a variety of dishes utilizing this fruit. It was well integrated into the culture of a number of Mexican tribes by the time of European contact.

Weedy species of tomatoes are common only in southern Mexico. They are prevalent in and around maize fields, and are a component of slash and burn agriculture practiced in this region for thousands of years. They are also found along roadsides, in vacant lots, and Mayan ruins. The weed race is considered the raw material for tomato domestication in Mexico and reached Mexico after agriculture had been well established. The language also provides clues about its history. One clue to its late arrival is found in the Nahuatl (Aztec) names. Our word "tomato" is derived from the Indian word tomato, but this originally applied to a cultivated *Physalis* (Strawberry tomato). The Aztecs used their word jitomatle for tomato, implying that the *Physalis* had been domesticated first and the tomato came later as another kind of tomatle, in this case "sand tomato" (Harland, 1995).

The wild and weed races of southern Mexico all have fruits with two locules (cells or compartments of an ovary). Some of the most popular kinds grown in tropical America are two-loculed. They are thick fleshed, firm and have good flavor. In contrast, the tomato taken to Europe was a highly fasciated (ridged) multi-loculed type with prominent ridges. The ridges are evident in sixteenth century European herbals. People spent four hundred years trying to breed the ridges off these early tomatoes, at the time considered an undesirable trait, when there were smooth types in Mexico all the time. The language suggests that an early introduction must have been yellow. Such words as

pomodoro, pomme d'or, and golden apfen sprang up over Europe and are still in use in Italy and the former USSR (Harland, 1995).

The tomato, had difficulty finding a niche when it first arrived in Europe. Actually, Mexican crop seeds of this South American native were brought to Europe in the early fifteen hundreds as another deadly nightshade (Nabhan, 1993). The tomato was treated with suspicion and labeled as poisonous. European culture remained inhospitable to the tomato, even though there was a lot of curiosity about the food.

The tomato was especially slow to find a foothold in Italy (Schultes and Von Reis, 1995). A 1614 account of Italian vegetables, by the natural philosopher and writer Giacomo Castelvetro, fails to mention them as part of the cuisine. As late as 1666, a Genoese publication by natural philosopher and botanist, Dominicus Chabraeus, lumped them with other poisonous and malignant fruits (Nabhan, 1993). The tomato still had too much of the wild in its two loculed ovaries. The tomato was treated with suspicion, and labeled as poisonous. Not domesticated enough, they "contained too little of human culture and rather too much unreconstructed nature" (Pollan, 2001). To become a staple, the tomato needed to be accepted and transformed by Italian culture.

Gradually, they began to be viewed as New World analogs to eggplants (another deadly nightshade) and were given the eggplant's former nickname: Pomo di Moro, or fruit of the Moors, a term now contracted into pomodoro (Nabhan, 1993). Interesting enough, English historians have erroneously translated pomodoro as "apples of love", when their true name never intended this distinction (Nabhan, 1993).

The earliest recorded Italian cooks treated tomatoes like eggplants, slicing them, and then frying them in olive oil with salt and pepper. The Herbo Nuovo of naturalist Castor Durante rejected them, claiming that compared with true eggplants, they scarcely provide the poorest nourishment (Nabhan, 1993). Then

in 1692, Latini challenged Italians to use tomatoes in sauces, as was the current fashion in Spain. Padre Francesco Gaudentino published a tomato sauce recipe in his 1705 treatise on Tuscan cookery (Nabhan, 1993); that suggested “taking the tomatoes, cutting them into pieces, putting them in a pan with oil, salt, chopped garlic, and wild savory...adding a few soft breadcrumbs if you like.”

By late in the last century, tomatoes were used extensively in Italy. Now they have become naturalized to this country as a daily part of Italian life. It is almost impossible to imagine what Italian food would be like without tomatoes. Tomatoes have also become an integral part of American cuisine. Acceptance of this plant in America was generally slower than in Europe. In the 1830’s, the tomato was a fairly new plant to New England. Some tried baking pies, and feeding this fruit to their pigs. By the 1850’s, the tomato became a staple in New England gardens.

Tomatoes are so versatile that even apartment dwellers can grow a few plants in patio pots or at the windowsill. Cultivars such as Tiny Tim and Patio were developed for this very purpose. In creating varieties specifically adapted to the city life, hybridizers brought plants under their complete control. Fully domesticated, Tiny Tims and their ilk would not survive for long outside of the controlled conditions of container culture. They truly are dependent on the labors and attention of their human custodians.

### *The Tomatoes Relinquish Their Wildness*

The long-term success and forgiving cultural requirements of modern cultivars probably explains why most gardeners count tomatoes among the earliest plants they ever grew. Like them, my Dad and I planted tomatoes in our garden and developed a special bond together as we extended the indenture of



many crops of tomato plants. Grown behind wire cages and fences that held them captive, the plants rewarded our efforts with special memories of long days in the summer sun and the delicious meals our family enjoyed together.

Oddly enough, my earliest memories of those tomato plants were not the fruits that we nurtured and coaxed each season, but the wonderfully pungent aroma of their foliage. I can remember being four years old, going into an old white greenhouse with my Dad and buying some tomato plants. From the vantage point of a four year old, my eyes stood even with the tops of those plants. I distinctly remember running my fingers over those plants and inhaling their heady aroma for the first time. It is as though that intense fragrance hermetically seals the experience in my memory.

Despite all of the nostalgic memories, preparing and maintaining garden beds is a lot of work. Soils need to be turned and amended to maintain aerobic conditions that permit deep root penetration and facilitate the work of microbes that release necessary nutrients. Weeds need to be eradicated or mulched into submission so that planted varieties stand a chance. Modern tomato plants must be staked or caged to maximize their yields and prevent spoilage. Gardeners (like the tomatoes they so covet) relinquish the exuberant freedom enjoyed by very young children and come under the yoke of other responsibilities.

Tomatoes unwittingly yielded critical elements of their wildness by becoming domesticated. Although they produced larger and larger fruits that contained more seeds, they were not nearly so successful at competing with other species for limiting resources. To compensate for this lost ecological fitness, the new varieties needed higher seed production and human intervention to successfully complete their life cycle. In a similar way, people lost some of their own freedom by electing to become tied down to a place for one or more growing seasons and establishing agriculture-based societies. Certainly, the development of agriculture allowed human populations to grow larger as this

provided a more reliable source of nutrition to support them (Lumis, 1992). Yet the benefits provided by farming had to come at the cost of as reduced mobility.

In the bargain cast between tomatoes and humans so long ago, people came to trade off a portion of their free spirit by acceding to modern civility. Do tomatoes provide an appropriate model that can be used to understand the human choice to accept contemporary rules and culture by suppressing their need to be free? Equally important, can the wildness in nature coexist with modern civilization?

From an ecological perspective, gardens bring all of the physical elements of the biosphere together within a microcosm of selected plant species. Human disturbances replace those forces that nature would otherwise provide in a wild and unfenced setting. For example, selective weeding is analogous to grazing, in that certain types of plants are eradicated to make room for others. In nature, deer and woodchucks browse selectively on items that best suit their palates, often stripping a parcel bare and making it available for colonization by another species.

People grow domesticated tomato varieties because it is worth it for them to do so. The fruits are large and a delicious reward for a long season's work. It is hard to imagine that anyone could be bothered growing wild tomatoes because they don't produce much of fruit. Despite the extra seeds produced in the typical domesticated cultivar, hybridized tomatoes typically would not survive for more than a growing season or two without continued assistance from the gardener.

Tomato plants cannot maintain seed production when humans no longer maintain the environmental subsidies necessary to support such a singular investment in fruiting. In this scenario, only the plants that grow quickly and out shade adjacent competitors would grow to maturity and produce seeds.

Accordingly, without the incentives provided by human intervention, natural selection would increasingly favor individuals that exhibited wilder types.

Successful societies, like successful gardens, cultivate reliance among its members as long as the different elements work together to attain mutually beneficial goals (Brundtland, 1987). Like gardens, social groups ideally become rooted to a place. Unfortunately, when political or other disturbances create an instability that displaces a human community, those diasporic groups must wander to other places where conditions are suitable for them to take root. Through trial and error, displaced peoples engage in competitive interactions that mirror ecological relations. The receptiveness of tomatoes to change their ways in exchange for useful services provided by gardeners can provide insights on human behavior or social structures.

### *The Wild and Domestic in the Garden*

Speculation exists about whether wildness and society are compatible. That is because human acts of domestication seems to extinguish nature and replace it with a less ecologically sound community. There are at least two major schools of thought on this issue. The environmental writer, David Quammen (1996), offers the view that “wild landscapes survive only as enclaves distributed in a matrix of human domination.” Because of the great extent to which human populations have come to dominate the biosphere, Quammen is joined by many major biodiversity advocates in promoting bioreserves to prevent wild nature from becoming compromised or completely overrun (Leopold, 1978). In this way bioreserves are more than the collections of charismatic megafauna or spectacular plants that some biodiversity conservationists seem to desire.

Gardening enthusiasts and practitioners have a somewhat different understanding of this issue. The way gardeners experience nature allows them to see it in a more fully sensual way. Gardeners may also consider physical forces of the biosphere as embodiments of what is really wild in their experience. Philosophical agriculturists like Masumoto (1995) claim that even the temperature or the wind are manifestations of wildness that can be directly experienced.

Similarly, the best-selling author and gardening enthusiast, Michael Pollan, (2001) argues that even a single vegetable harvested from one's garden provides an experience of the wild. He finds the sensual experiences of digging a potato from the soil, cutting it open and smelling it is as earthy and wild an experience as anyone could ever hope to have. To Pollan, wildness is a human construction that only exists meaningfully in our psyches instead of being relevant to other organisms in nature. His logic requires a vital human perception or judgment that a situation or organism exhibits an essentially uncontrolled quality of wildness.

Both Masumoto and Pollan suggest that elements of wildness are very compatible with human cultures and civilizations. This is because people do not extinguish completely the natural qualities that come together to form the biosphere. This is a valid conclusion from the perspective of a gardener who deals with nature every day as he goes about the business of tending his plots. Is the germination and growth of a deliberately hybridized seed any less of a miracle of nature than when a so-called wild type reproduces itself? That same vegetable or flower avails itself similarly of water and nutrients as the next plant. As is true of applied scientists, gardeners are less likely to accept the botanical purist's philosophical view that there is a significant difference between the generic growth and related life history characteristics of a hybridized cultivar and its land race of origin.

Gardeners pride themselves on the cooperative relationship they enjoy with other elements in the natural world. Gardening is the ideal way for anyone to experience how the biosphere works and how humans impact it. From these experiences, gardeners understand cycles of life on a compressed schedule. Considering what happens over a series of growing seasons is like experiencing many generations of life, giving gardeners an opportunity to extrapolate about the human condition.

Through exploring how the tomato successfully coevolved with human populations and became broadcast far beyond its original geographic range, it is possible to obtain insights about human ecological history and how *Homo sapiens* cultivated its niche in the world. In a modern tomato cultivar, remaining wild traits serve as living blueprints. Observing plants provides a basis for drawing conclusions about human values, experiences, evolutionary history, and even an ecological worldview. An ecology-based perspective can deeply influence how a person departs himself in the world (Norton, 2000).

As a gardener, it is with some trepidation and embarrassment to admit that the tastiest tomatoes I have ever grown did not come from my garden. Instead, they sprouted closer to the edge of the compost pile, staking their claim in this new frontier like pioneer species. They must have originated from overripe or damaged tomatoes that got dumped in that compost pile at the end of the previous gardening season. The minority of seeds that survived the winter freezes and scavenging wildlife germinated in a most defiant gesture, and took it upon themselves to thrive among the moldering compost. In this niche, those upstart tomatoes are trying to be wild and growing on their own, yet they still enjoy some important benefits of the garden.

What makes these brazen fruits all the more appealing is not so much their taste, but the tenacity with which they exert their will to survive. It is a reminder of the inner wildness, which makes me long for the freedom to express

my individuality and most deeply held desires. Like the tomatoes, which maintained some latent wild feature, such as ribbed fruits, despite many generations of domestication, this compulsion cannot be completely suppressed by societal demands. Instead, it remains as a vital force, an essential legacy of my own evolutionary history.

Through its constant reminders and many examples, gardening engenders a deep sense of personal awareness that links human presence and action in the world with other elements in nature. By breaking down the perceptual divide between nature and culture, the act of gardening restores connections that transcend some of the most confounding barriers to understanding critical aspects of the human condition.

#### *Fall — A Time to Harvest*

Using the fall garden as a backdrop, the next section of this essay considers how gardening traditions create ecological and personal legacies that outlive the person that nurtured them. The fall is the perfect time to reflect on the results of the past year's activities, and to consider the milestones of one's own life. In this way, gardeners can more fully appreciate the possibilities for any legacies and personal connections they seek to cultivate and leave behind as their mark.

All comes to a crescendo in the autumn, when the final harvest culminates a year's gardening effort. It affords last minute chances to thwart the killing frosts by tarping beds at night so the plants can also enjoy warm afternoons on borrowed time. Perhaps most importantly, the gardener reserves fall time to select the seeds that will continue their kind in the future. These precious vessels contain the legacy of the past growing seasons a gardener and his plants share. They are a testimony to the greatest successes and failures of the ongoing plant/

human collaboration. Many horticultural varieties would not continue to exist without a gardener's care. They reward the gardener for his season of work by producing food and incredible expressions of beauty that ensure he will choose to tend them another year.

Cultivating a vibrant enduring relationship with nature is personally rewarding. It also forms an essential foundation for a gardener's legacy to be carried on, in a physical place and through traditions upheld over many generations. The same seeds that sustained distant forebear preserve a cultural link from father to son for generations. With this act, genetic and cultural elements continue their journeys across space and time. With experience accumulated through the generations, gardeners are poised to experience the human condition in ways that help them formulate a personal philosophy for deporting themselves in the world.

Through years of coaxing food and pleasurable landscapes from tiny seeds placed in the soil, a gardener learns the importance that different forms of legacy have in connecting him to that which physically and intellectually sustains him. These legacies simultaneously recall the recent and distant past while providing the gardener with a sense of future possibilities in and beyond the garden. Using the inspirations of a gardening metaphor, plantsmen can develop especially rich connections to special places they have lived as well as to people that have enriched their lives through a common bond of nurturing plants and personal relationships with nature. The family provides the ultimate example of such a connection.

Like his plants, the gardener comes from generations that preceded him. The vagaries of life do not permit plants or people to know many generations that preceded them or many that will follow. For instance, I never really got to know much about my grandparents because they had passed on before I could form a meaningful memory of them. However, some of the plants I grow, such

as basil or tomatoes provide a useful frame of reference because they share a genetic link to ancestral stocks cultivated by my Italian relatives. By cultivating them in my yard in Burlington, I imagine that I share the same joys and frustrations that my grandparents did back in Italy. Gardening activities practiced on terraced plots at my mountaintop residence mimic those undertaken when my predecessors tended their own stony parcels years ago in Pantelleria, Italy.

By experiencing gardening seasons with these plants, I can draw an independent perspective of the cultural inheritance that is my grandparents' legacy. The plants deepen my personal understanding of who I am and where my kind came from. They help me transcend chronological scales that otherwise would thwart my understanding and interpret my observations and musings through more concrete cues and images.

My own gardening life has its roots in the cultivation and appreciation of chrysanthemums. These plants are poignant symbols of the autumn, and their culture also was my formative experience as a horticulturalist. These beautiful plants continue to be favorites in my heart and garden to this day. Like me, they are not native in the literal sense to my yard, yet we both have cobbled together a mutual home on our adopted landscape.

### *The Legacy of the Chrysanthemum*

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Because of their superior cold tolerance and ability to hold vibrant inflorescences through heavy frosts, chrysanthemums dominate autumn landscapes in many New England gardens. This hardiness did not come naturally. It resulted from years of horticultural experimentation at Connecticut's Bristol Nurseries. Using hothouse dependent chrysanthemum strains and a Korean wild type, Alec Cummings developed hybrid lines that led to modern cultivars capable of surviving a New England winter (Cumming, 1945). His son Rod eventually would carry on Alec's legacy, surpassing his dad in both number and quality of cultivars.

The chrysanthemum is a plant of ancient lineage, tracing its cultivation back to the Orient and particularly the Confucian era in China. Confucius, the most famous of Chinese philosophers, was additionally an avid horticulturist. At the time of his birth in 550 B.C. the chrysanthemum was grown in China as a treasured garden plant. Years later, the seeds of chrysanthemums were introduced to Japan in A.D. 386, from what is presently Korea (Cummings, 1945).

The original *Chrysanthemum indicum*, a single yellow flower, is thought to be the progenitor of all chrysanthemums. The name chrysanthemum is derived from the Greek *chrysos* (gold) and *anthos* (flower), so named in 1753 by Linnaeus. In his early description of the wild type plant, Linnaeus describes two varieties; one single and the other with double flowers.

The first garden-variety chrysanthemum was introduced from the Orient to England in 1754. It didn't create much of a sensation and was reintroduced in 1795. By 1824, it had established itself as a florist's flower, cultivated in the warmth of early glass houses. Spilling over into the landscape, the plant spread to the windows of cottages and to sheltered spots in the garden, largely treated as an annual. At this point the chrysanthemum still was a plant whose culture relied on glass house culture. It was not quite ready to make the leap into European gardens as a hardy perennial.

These early European cultivars were first brought to America in 1847, mainly to be utilized as florist's greenhouse crops. The sturdy pompon flower type (actually a species of *Artemisia*) was cultivated in early perennial gardens in America. Some of these plants reached our shores through the old mariners, many of whom were interested in plants (Cummings, 1945). These old varieties were hardy but lacking in bright colors. Flowering late they needed shelter to shield the blossoms from autumnal icy blasts in New England. Cummings muses that "grandmother's red flannel petticoat was often relinquished to provide the needed covering. In any case it certainly would be unfortunate if our chrysanthemums today depended for protection upon that expedient-the habiliments of this generation would be of rather dubious value."

These pompon types flourished primarily as profitable greenhouse cut flowers. Early-flowering double type chrysanthemums came into general use about 1910. They were used primarily as greenhouse crops although the beginning of early flowering and hardier cultivars began to originate from these types. Various plant breeders and fanciers experimented with these cultivars attempting to produce plants that would be hardy enough to withstand the vagaries of a New England winter.

Alec Cummings and his son Rod were the two men largely responsible for the development of the hardy garden chrysanthemum in the United States. Alec Cummings came to the Bristol Nurseries in the late 1920s, hired by Paul Hubbard who began the Bristol Nurseries in 1920. Cummings had been lured away from nearby Pierson's greenhouse in Cromwell, Connecticut, which at the time was famous for being the largest greenhouse facility in the world. Originally from Scotland, Alec began his work on chrysanthemums working with a single daisy mum type inflorescence from Korea, to develop a new hybrid type.

The native Korean chrysanthemum (*Chrysanthemum corium*) is a remarkably hardy wild species with daisy like flowers. Cummings used it as the

dominant parent, crossing it with other chrysanthemum cultivars to develop new cultivars. The introduction of these plants placed Bristol Nurseries at the forefront of hardy chrysanthemum development. From these hybrid lines, Alec Cummings developed a wide range of hardy, profuse blooming garden chrysanthemums. Mercury, the first promising hybrid, was introduced in 1933. He continued this work through the 1930s and 1940s.

F. F. Rockwell, the editor of *Hardy Chrysanthemums: Their Selection and Culture for Best Effects in the Garden*, pays great homage to Cummings. He states: "Alec Cummings of the Bristol Nurseries has done more than any other person in the world to bring about this sweeping renaissance in one of the oldest garden flowers" (Cummings, 1945). The shared legacy of the Cummings, devoting lifetimes to growing chrysanthemums, continues in my own yard as I grow the plants that they developed.

### *Cultivating a Legacy*

My earliest memories of cultivated ornamental plants were hardy chrysanthemums grown and produced by the Cummings at Bristol Nurseries, just half a mile from our family home. For several years I rode my bike past the nursery delivering newspapers. Each day, regardless of the weather, those papers had to be brought to my customers. Most of them were not particularly charitable if the papers came late or wet. After a time I noticed that the nurserymen also toiled in the rain and heat, except in the winter when they worked in the greenhouses. Eventually the nursery was added to my customer list and I had to enter the grounds weekly to collect for the paper and hopefully get a tip for good service. Sometimes I spent that money on an especially pretty plant for my mom or seeds to add to the family flowerbed. Noting my unusual

and protracted interest in their work, the nursery operators lured me off of my bike and into the production fields.

For the first couple of years, I helped Rod Cummings with his newest hybrids. This entailed planting cuttings in the fields in June and subsequently watering, hoeing and pinching back the plants that took. Before October frosts, these special chrysanthemums had to be potted up for sale so customers could use them to replace their less hardy annuals. When the field stock was blooming people came from miles around to admire the acres upon acres of mums. Although I appreciated my paycheck, the admiration of those visitors was the sweetest reward for the many sweaty and backbreaking hours spent with the plants. As a kid it felt important to be an active participant in the annual pageant.

After the crowds dissipated the day-to-day work resumed. The best plants were dug for nursery stock and transplanted into acres of greenhouses. Placed in specially engineered soil, the next season's crop would be propagated from these select performers. Although attentive to teaching me about the basic cultural needs of chrysanthemums throughout the year, Rod truly shone as a mentor after the autumn sales were over. Not a man of many words during the production season, Rod lowered his guard once operations moved into the greenhouses and maintained a steady chatter about what he was doing. In particular he concerned himself with selecting for color, hardiness and plant appeal that would result in improved chrysanthemum offerings.

Although I did not realize it at the time, these one-sided conversations were intended to cultivate my understanding of the technical science aspects of successful chrysanthemum development. Even more importantly, Rod's monologues shared a lifetime of perspectives about the elusive art of chrysanthemum horticulture. An inveterate bachelor, Rod chose to preserve his horticultural legacy in a skinny tanned kid that asked a lot of questions. After

years of Rod's mentorship, it was inescapable to conclude that nurturing plants was more than just a job. Instead, it became apparent that horticulture is a consuming passion worthy of becoming a life's work.

The need or desire to cultivate a personal legacy in the landscape is a common thread that binds together horticulturists and serious gardeners. This is true regardless of the scale at which gardening is practiced. For instance, both the caretaker of a small rock garden and a commercial truck gardener are attentive to certain impacts that arise as a consequence of their labors. That is because experience tells them that the success or failure of their future plantings will emerge as the legacy of those actions or decisions.

Whether measured by the trowelful or in acre-feet, the soil manipulations required to establish and maintain a garden have a longstanding effect on the plant and microbial biota. However, not all legacies emerge from deliberate intention. For example, the stereotypical junk piles so characteristic of family farms speak to the tools and equipment used over generations of tilling the fields. By sifting through the discarded materials, it is possible to construct a partial chronicle of the different activities that shaped the land. Masumoto notes: "a farmer's roots are exposed in his junk" (Masumoto, 1995).

The same is true for both professional and even casual gardeners, because gardening is not all gentleness. In transferring his vision to an actual ecological setting, a gardener must expend great effort to impose his will on that parcel. Whether the resulting legacy is lasting or fleeting depends on the relative permanence of the selected materials and the skill brought to bear on bringing his plan to action. For instance, projects that focus on sculpting soil and introducing significant stone elements generally have greater permanence than simple beds bordered by railroad ties or pressure treated timber. Long after the wooden components in the latter scenario disintegrate into the earth, the stone-based designs will persevere.

Upon deeper reflection, I realize that these creations of stone mimic terraced plots undertaken when my relatives worked their own terraced plots in Pantelleria, Italy. Past generations of relatives, molded the physical and biological landscape as they saw fit. Their motives were those driven by survival needs, to eke out a living in an inhospitable environment. My own motives were to create a landscape that was aesthetically pleasing and one that would endure long after I was gone. The shared similarity of both landscapes helps me understand who I am and where my kind came from. Although our lives are transient, the shared legacy of past generations and the landscapes we construct contribute to permanence much like stone.

Given the potential for creating an ecologically or aesthetically lasting legacy, skilled gardeners project how their compositions will develop over time. It is not always possible to predict the final outcome, as the wild elements in nature fight back against the gardener-introduced interlopers from which they strive to reclaim their turf. Without a gardener's vigilance, poison ivy or bittersweet would eventually crowd out otherwise hardy ornamentals and the deer and woodchucks would graze some ornamental beds to the ground.

### *Leaving a Legacy*

To form a foundation for these claims, it is important to explore the key nuances about how legacies play into the gardening experience. These legacies originate from a predecessor or are descended from one generation to another. While legacies simply can entail objects of personal wealth bequeathed to another, it is more interesting to extend the concept to include intellectual properties, emotional values, and elusive concepts. The environmental writer, Ann Zwinger, (1999/2000) notes that legacies can even imply a moral imperative with which other generations navigate through life, regardless of whether they

result from specific acts or sins of omission. Importantly, each person is responsible for the collection of legacies left in his wake.

Gardeners leave many material and conceptual legacies. On the material side, saplings or beds of long-lived perennials will persist for many decades or even for hundreds of years. These physical legacies mark a gardener's aesthetic preferences, the commercial availability of stock plants at the time of planting and other aspects of a particular gardener's habitation. These remnant features serve as visual markers for a gardener's personal history and suggest the ecological influence he had on a particular parcel. An apt example is the suburban lawn, which is maintained by chronic disturbances including mowing, pesticide applications and excessive fertilization cycles. The chemicals used can cause ecological damage persisting for decades and even spill over to portions of the watershed far removed from the point of application. Accordingly, a seemingly innocuous activity can have a lasting and deadly legacy.

Similarly, ideas passed on as intellectual legacies have their own potential risk or reward. By acting on the belief that European chestnuts were inherently superior to their American counterparts (or could be used to hybridize an improved cultivar) importers ended up virtually destroying the native variety east of the Mississippi. This loss was profoundly devastating not just to the ecological communities, but to a far-reaching array of economic and social structures that depended on American chestnut lumbers or fruits.

The influence of new ideas has a profound effect on shaping or determining future ecological and sociopolitical conditions. Pollinating such new ideas can be a high stakes venture because once they take hold, both good and bad ideas are not easy to extinguish. From a gardener's perspective, the situation is akin to managing weeds in the garden. Even a persistent weed can be eradicated by brutish means provided the gardener has the will to persevere and change strategies along the way. Like that aggressive weed, a compelling

idea takes highly convincing refutation or a complete shift in intellectual perspective, to be rejected. Yet foregoing some of the most deeply held beliefs and practices that guide us through our lives might be the necessary and sufficient step to cultivate a more sustainable relationship with the earth.

I have come to realize that the chrysanthemums planted in my garden fulfill both of these forms of legacy. On the physical side, they are directly descended from the stock developed by Alec and Rod at Bristol Nurseries and tended to by the inexperienced hands of my youth. On the conceptual side, those mums inspired and continue to fuel the passion for my own work as a gardener, an educator and a parent. While I do not develop new cultivars of chrysanthemums as the Cummings did, I have dedicated a career to developing the technical skills and love of horticulture in legions of students that move through lay and undergraduate courses at the University of Connecticut. The one constant through our collective learning process has been the mums.

In retrospect, a lifetime of engagement with these autumnal beauties has far more than pleasant memories as its legacy. Both the chrysanthemums and my family learned to carve a mutually pleasant existence on the sunny escarpment that is our chosen home. This required both plants and people to become accustomed or adjusted to the physical terrain and other environmental characteristics. Due to the lack of certain resources, it is not natural for either the mums or my family to survive at this place. It has taken significant physical adaptations, like providing a well for a steady source of water and amending the soils, to make our hilltop existence at all sustainable or practicable. In making the adjustment, we have become naturalized to our place to the point that leaving it is difficult, for it is here that we draw our feelings of peace and grounding as surely as the mums derive sustenance from the sun that bathes them daily.



Mature gardeners learn to keep the cycles of seasons going in their garden and to abstract personal meaning from the symbolic messages that emanate from their plants. These experiences enrich not just the gardener, but also those around him as his contagious enthusiasm for plants spills over into other aspects of life. Sage gardeners remember to spend the fall collecting the seeds that will serve as the germs for another year's planting. They also take pains to trade a few of their best with others because they want to extend their success to other yards. Those seeds or tubers obtained in exchange will add diversity and dimension to his own plot and introduce a new vitality to his garden that might never have developed on its own.

The mix of treasure resulting from these friendly exchanges is a true gift in that everyone always shares the very best that he has. Following the observations of Lewis Hyde (1983), true gift giving requires that a cycle of exchange be completed. Namely, that something worthwhile and valued is given freely to another, and the favor eventually is broadcast to others until the originator unexpectedly is rewarded. Gardeners experience this phenomenon each year as they further expand their interactions to their families and a larger circle of plant aficionados.

As my own philosophy and ideas ripens in the fall of my own life, I harvest the fruits borne of many seasons so that my own legacy and shared wisdom can touch others. This legacy would include a love of the natural world and growing plants. I have come to understand that it's most unique gift or benefit is learning to interpret garden symbols as a way to more richly understand humanity and life's experience. There is an old saying by George Bernard Shaw, who once said something to the effect that "for people, the most important thing is to do the best we can to leave a legacy in order that those that follow are free to do better than we." As a gardener, there could be no greater

posterity than inspiring others to join the timeless gardening tradition of caring for the earth.

*Epilogue: Gardens Are Like Families*

It's a cold Sunday in late October. The gray-white cloud covered sky makes the day feel like winter. Yet our New England bioregion has enjoyed a remarkably long and warm Indian summer this fall. Until today, sunny blue skies and unseasonably warm temperatures have lulled me into a false sense of security that summer is still here. The cold late autumn air reminds this gardener that another season, winter, will soon be here. During this transition, the edge between one season and another is an appropriate time to contemplate the past garden season as well as one's own life.

The rhododendrons in the yard made a remarkable recovery from the ravages of the herds of deer. Their healthy, green foliage, and heavily laden branches bursting with flower buds, are a testament to the tenacity of this naturalized exotic plant. The lawns are now green again, after browning out this past summer. They were over seeded in early September, and the cool, moist conditions of our fall climate allow them to grow much as they did in England. Collected from all over the world, these species of lawn grasses now grow in all parts of the United States. A few green tomatoes, domesticated from wild progenitors are left in the vegetable garden, and they have remarkably withstood a hard frost. Chrysanthemums are still blooming, after withstanding temperatures in the lower twenties. Their legacy as "queens of the fall garden," as described by my early mentor Rod Cummings, seems even more relevant as I gaze upon them today.

My thoughts are interrupted with the wild clamor of my grandson, Tashi, who is playing with his toy rake and hoe in the gravel driveway. Running

through the backyard, he pauses to admire and pluck a chrysanthemum flower. I point out the numerous bumblebees that are still out there, stocking up on pollen before this season ends. Tashi, who is now seven, bounds off in search of other adventures in the yard. My son Carlos, and his wife Yeshi, show him the last of the Sweet One Hundred cherry tomatoes and I watch him as he devours a few.

My mom, who passed away a few years ago, loved to see her only great grandson. She would tell me when I pressed her why this small person would bring her so much joy. "He is so full of life" was the way she put it. Thinking back to this past Mother's Day, I remember Tashi running up and down the deck with her walker and my mother smiling. As life was leaving my mom, she was keenly aware of the life and the boundless energy within Tashi. He represented for her the essence of life and the possibilities that the future would hold.

As I watch this small waif run through these gardens, I have come to conclude that gardens are very much like families. Plants, like people, are combinations of chemicals and genes and possess a life force that allows them to grow. With each season, the garden and the gardener are reborn and at the end of each gardening year, the season comes to an end. Like the gardener's life, there is only an unknown amount of time that each of us is allotted. As I mature, the competing life forces permeate not just my gardens, but my life as well. To witness the activities of my grandson is to observe life and the garden beginning anew.

Tashi is emblematic of all the themes discussed in this essay, as all of us could equally be included in these themes. Tashi was born on a cold day in February. Seeing him only a few hours old, I viewed the clarity in his eyes, which may have been a prelude to his current wildness and high activity level. Much like a treasured plant in my garden, Tashi represents a new cultivar in the

family. Like any plant, he will require care, nurturing and attention in order for him to grow and prosper.

Tashi is becoming naturalized to the New England area, as has our entire family. Because of his Tibetan heritage from his mom, Tashi truly appears exotic, but he is as native as any American born here. As Thomas Jefferson stated to his colleague Samuel Adams while composing the Declaration of Independence, “once you are here or are born here, you are an American” (Ken Burns documentary on Thomas Jefferson, October 2002). Yeshi, his mom, grew up in India after her parents were forced to leave Tibet in 1959. China’s domination over Tibet forced Tibetans to disperse all over the world, unable to return to their land of origin. The global diaspora of this group of people has enabled them to become naturalized to other parts of the world, just as many of the plants I grow in my garden.

Who can comprehend the genetic stock that Tashi has inherited? His ancestors endured dramatic climatic changes in the harsh climate of Tibet. As I watch him run, I think of wild mountain people and horsemen huddled together in a yurt, sipping Yak butter and tea to survive. How different Tashi is from these distant ancestors but yet how much the same he could be as wildness persists in his genes. Through attention and my caring, perhaps I can help Tashi to navigate growing up, and maybe inspire him to become a gardener.

By now late afternoon is approaching and the clocks were turned back last night, it will be dark soon. I ask Tashi to help me pick a bunch of chrysanthemums. Together we gather and break off long stems of variously colored flowers. Tashi is learning to identify the colors and he attempts to pronounce the color names as I coach him. With each pluck of a stem, the fragrant chrysanthemum foliage evokes strong memories for me, of past people and places and the legacy of the chrysanthemums in my life. I ask Tashi if he likes the pungent aroma. I hope that someday Tashi will recall this special time.

I think of the significance of the situation. Like Tashi, these chrysanthemums originated in Asia, and subsequently became naturalized here. Both share a legacy that began thousands of miles away, generations ago. Both must persevere and adapt to a changing world. By now its getting cold and we retreat to the warmth of the kitchen. Placing the flowers on the gray and white marble counter top, we begin to arrange the chrysanthemums in a vase. The patterns of dark and light captured in the stone counter tops mirror the cumulus clouds that obscure the bright blue skies on this seasonal transition day. Yet, the simple act of bringing these chrysanthemums indoors showcases not only their beauty but also the legacy of this plant's journey. I think of the journey that all of us have taken, as my wife Beth, my son Carlos, his wife Yeshi, my daughter Liz, Tashi and Sonam his younger brother are sitting around the counter top sipping tea.

The spicy pungency of the chrysanthemum leaves permeate the air as I remove foliage and cut stems to immerse them in water. My son Carlos comments that Tashi is staring at me as if I am doing some sort of magic. I smile inwardly, knowing that magic emanates from the chrysanthemum flowers. My thoughts center on Tashi and that he to will be enthralled by these plants. I can help him to do this, if he so chooses. Just as the chrysanthemums helped me to learn to keep the cycles of the seasons going in my garden and family, they can help Tashi to do the same. The fall seems like the best time to begin this and the gift of the chrysanthemums legacy is passed on to Tashi.

Each of us does our own dance in life and within the landscape of the world, harvests the past, plants for the future and even recalls the remnants of an earlier time. This practice allows me to find the strength and courage to go on. I pack my life with seeds of memory and plant them liberally wherever I go. I garden to mark the happy days, and the sad ones, to make a home, feed a family and feel a sense of wisdom and personal meaning. Mainly, I garden to glory in

the astounding beauty of plants and to preserve my connection to the earth by nurturing fond memories and cultivating a legacy. Plants have enabled me to do this. Each plant has as their own legacy, a gift of transformative power in life, and enduring beauty in death.

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