

Garden Weeds in the Age of Jefferson

THE TOPIC OF EXOTIC invasives, or weeds, is poignantly appropriate today because of the insidious threat alien plant pests pose to both our cultivated and natural resources. A weed is often defined subjectively, “a plant out of place,” but for Thomas Jefferson “spontaneous herbage,” the native and introduced plants that arose serendipitously in his gardens, orchards, and farmland at Monticello were a satisfactory soil conditioner in an agricultural system of crop rotation. He wrote, “It is well known here that a space of rest greater or less in spontaneous herbage, will restore the exhaustion of a single crop.” Jefferson’s naive yet positive perception of the place of the weed, like his ideas on pest control, reflected a kind of horticultural innocence, a holistic belief in the inherent balance of the cultivated garden and uncontrolled nature. Jefferson, for example, considered poison ivy an ornamental, “suitable for shrubberies.” probably because of its striking autumn color. Crabgrass was listed as a legitimate pasture and lawn grass in his *Notes on the State of Virginia* and was commonly sowed by other early

agriculturists before 1830.

Although Jefferson may never have seen a plant he didn’t like, he recognized that certain plants were “out of place,” and realized the necessity of harnessing them. In a letter to the noted Philadelphia portrait painter Charles Willson Peale in 1813 Jefferson discussed his theories on weed control, cultivation, and agriculture. “The spontaneous energies of the earth are a great gift of nature, but they require the labor of man to direct their operation. And the question is so to husband his labor as to turn the greatest quantity of this useful action of the earth to his benefit. Ploughing deep, your recipe for killing weeds, is also the recipe for almost every good thing in farming. The plough is to the farmer what the wand is to the sorcerer. Its effect is really like sorcery.”

When Jefferson referred to “plants out of place,” he was generally alluding to the first generation of forest trees and shrubs, such as black locusts and red cedar trees, or else native brambles and vines like Virginia creeper. Today, five of the ten “most troublesome” weeds in Virginia, as chosen by weed specialists at Virginia Tech University,



Title page of Thomas Jefferson's Notes on the State of Virginia, 1787



are native plants—poison ivy, brambles, Virginia creeper and horsenettle—and they were as precocious then as now. A majority of the worst weeds observed by gardeners during Jefferson's lifetime originated in Europe, and they, evidently, were regarded relatively benignly by Mr.



Scotch broom, *Cytisus scoparius*, naturalized in the forests of Monticello

Jefferson. Although Jefferson died before the great wave of superb Asian ornamental plants were introduced into American gardens in the mid to late nineteenth century, he was fortunate to have avoided the noxious tide of Asian invasives such as Japanese honeysuckle (*Lonicera japonica*), Japanese stilt grass (*Microstegium vimineum*), chocolate vine (*Akebia bipinnata*), and Japanese bittersweet (*Celastrus orbiculatus*)—serious threats to the integrity of the Piedmont native forests of the mid-Atlantic states today.

When Jefferson wrote that “the greatest service which can be rendered any country is to add a useful plant to its culture,” he was expressing an experimen-



Broad-leaved plantain, *Plantago major*, thrives in compacted soils.

tal approach to horticulture. This was reflected by the 330 varieties of vegetables, 170 varieties of fruit, and hundreds of ornamental plants that were documented in the gardens of Monticello. Unfortunately, Jefferson lacked 200 years of hindsight to be able to judge whether certain introduced species might become the pests, the bullies, the weeds of the garden world. A common question Monticello gardeners now receive is, “What plants did Jefferson introduce that later became exotic invasive species?” The Sage of Monticello was relatively innocent to this presumed accusation. Scotch broom (*Cytisus scoparius*) was a favorite of Jefferson's; he sowed the seed in eroded, waste places at Monticello, and enjoyed both its yellow flowers and evergreen foliage during the dark winter months. Scotch broom is a pest in the Northwest United States, but the naturalized colonies in discrete pockets of the Mid-Atlantic States seem restrained and relatively benign. A modest herbaceous annual flower, *Verbesina encelioides*, was sent to Jefferson by the noted Parisian botanist-gardener, André Thouin, and planted at Monticello in 1811. The golden crown beard is regarded as a serious pest in Hawaii, but again, not here. Jefferson also planted chinaberry trees, certainly a weed tree in the Deep South, but its lack of cold hardiness has restricted naturalizing further north. Chinaberry trees would be everywhere in the rural South, with or without Thomas Jefferson.



Old world plants became naturalized soon after the European settlement of America and many became pests, “exotic invasives.” The American literature on these weeds, “plants out of place,” provides an insightful historical perspective on the horticultural problems weeds present today in 2006. Although he

Twenty Worst Weeds in the Early Nineteenth Century

Wild Onion

(*Allium vineale*) INTRODUCED

Bermuda Grass

(*Cynodon dactylon*) INTRODUCED

Canadian Thistle

(*Cirsium arvense*) NATIVE

Burdock

(*Arctium minus*) INTRODUCED

Dandelion

(*Taraxacum officinale*) INTRODUCED

Narrow-leaf Plantain

(*Plantago minor*) INTRODUCED

Briars

(*Rubus* sp.) NATIVE

Crabgrass

(*Digitaria* sp.) INTRODUCED

Horse Nettle

(*Solanum carolinense*) INTRODUCED

Elderberry

(*Sambucus canadense*) NATIVE

Jimson Weed

(*Datura stramonium*) INTRODUCED

Poke Salad

(*Phytolacca americana*) NATIVE

Foxtail

(*Setaria glauca*) INTRODUCED

Broom Sedge

(*Andropogon virginicus*) NATIVE

Lamb's Quarter

(*Chenopodium album*) NATIVE

Plantain

(*Plantago major*) INTRODUCED

Mullein

(*Verbascum thapsis*) INTRODUCED

Star of Bethlehem

(*Ornithogalum* sp.) INTRODUCED

Chickweed

(*Cerastium vulgatum*) INTRODUCED

Queen Anne's Lace

(*Daucus carota*) INTRODUCED



JOSEF BEHRY

failed to identify the species, John Smith noted the appearance of “all manner of herbs and roots we have in England” in the fields about Jamestown as early as 1629. John Josslyn, who visited New England in 1638 and 1663, compiled a list “Of such Plants as have sprung up since the English Planted and kept Cattle in New-England.” Among the twenty-one escaped plants, he included the earliest European exotic invasives, such as broad-leaved plantain, dandelion, dock, chickweed, and mullein. Peter Kalm, the Swedish botanist and natural historian who journeyed through the mid-Atlantic colonies from 1748 to 1750, identified the native pokeweed, *Phytolacca americana*, and the European jimsonweed, *Datura stramonium*, as the “worst weeds” in gardens, but he also included wild onions, mullein, native brambles, yarrow, and dandelions among the “weeds that are



IMAGE CREDIT

Jimson weed, *Datura stramonium*, among the “worst weeds” to Peter Kalm in 1750 everywhere in fallow land.”

In a letter to the supreme 18th-century, English plantsman and author, Philip Miller, in 1759 John Bartram described thirty-five “troublesome” plants, both native and introduced, growing wild in the fields and coming up in the gardens of eastern Pennsylvania. The “most mischievous” were the butter and



eggs, *Linaria vulgaris*, and the St. John's wort, *Hypericum perforatum*. The "stinking" Linaria, according to Bartram, was impossible to eliminate: "Some have rolled great heaps of logs upon it, and burnt them to ashes, whereby the earth was burnt half a foot deep, yet it put up again, as fresh as ever." The "pernicious" Hypericum, however, could be destroyed with a hoe and plough. Richard



Foxtail, *Setaria* sp., thrives in abandoned cultivated land.

Parkinson, an English gentleman transferred to the rude frontier of suburban Baltimore in 1800, observed crabgrass and foxtail, both European introductions, as problematic.

In 1827 the anonymous farmer "W. D." published a list of twenty-seven "pernicious and unprofitable" plants in the *American Farmer*, an agricultural periodical published in Baltimore beginning in 1818. Many were native wetland plants like skunk cabbage, while others were integral species of our native flora like elderberry, certifying how the "weed" designation is a personal and subjective choice. Lewis D. de Schweinitz, a



The *American Farmer*, a periodical first published in 1819, documented early garden pests.

prominent Salem, North Carolina-born botanist who moved to New York, published a compilation of European naturalized plants in 1832. Interestingly, De Schweinitz expressed surprise at the relatively pristine character of the New York landscape, reflected by the domination of true native North American plants, 4,000 species, over escaped Old World species, of which he listed 119.

One's attitude toward native plants might be reflected in the attitude toward what was a weed. On the previous page is a list of the most commonly mentioned weeds in the United States before 1832;



Elderberry, *Sambucus canadense*, is an aggressive native shrub (complained about by early American gardeners).

it is based on a tally of documented allusions in agricultural and horticultural journals, such as the *American Farmer* and Charleston's *The Southern Agriculturist*, and also the writings of early American gardeners and other chroniclers of the native and cultural landscape.

Wild onions and Canadian thistles were most commonly complained about in the *American Farmer*, while Bermuda grass, reputedly introduced into North America in the bedding of slave ships, was mentioned most frequently in *The Southern Agriculturist*. Some of the most dreaded field and garden weeds were initially described with horror ("Nothing but the united exertions of the agricultural community can effectually subdue this plant [queen Anne's lace]"), but many aggressive introductions like Bermuda grass, narrow-leaved plantain (called "ribbon grass" in the 1820s), and crabgrass began to be accepted by some writers as desirable pasture and forage plants for livestock. One admirer wrote in an agricultural periodical of 1820 that his pasture-sown crabgrass had "as bright a color as I would ever desire on my plantation."

John Boulster, a correspondent for the *American Farmer*, wrote of wild garlic, "If you can't get rid of it, learn to live with it." The laissez-faire approach to weed control became common once the reality of exterminating some of these persistent plants sunk in. William Byars of Virginia recommended leaving burdock plants uncontrolled, and after three years he assured his readers they'd be covered by "fine grass." Another essay praised the ability of weeds to shade and



Burdock, Arctium minus, is a striking but pernicious weed.

cover the ground, and to provide food for insects: the author concluded, "Weeds are good servants, but like fire, bad masters," in urging a benign neglect approach to their management.

Although most weeds in the early 1800s, like they are today, were hoed up or mowed down, gardeners used creative techniques with whatever materials might be on hand. Many theories were postulated on the most effective way to rid fields of wild onion or Canada thistle, "like a pert clown, sure to intrude where it is least wanted."

Progressive farmers often recommended a strategic and timely system of plowing, or sometimes the use of salt; one writer was pleased to kill his thistles by dumping the salty brine from meat tubs upon them. Thomas Mann Randolph, Jefferson's son-in-law and occasional manager of the farmlands at Monticello, read a paper in 1824 before the Agricultural Society of Albemarle in which he discussed

his creatively effective method of ridding horse nettle from wheat lands. Sheep were introduced into the fields in late spring as the nettles were blooming.



William Cobbett was the most forthright and entertaining early American garden writer.

NATIONAL PORTRAIT GALLERY, LONDON



Goldenrod, Solidago sp., was adapted early by British gardeners.

While they abhorred the foliage of this prickly weed, they grazed on the flowers, eliminating the possibility of the species to reproduce itself. This was efficient biological control; man, domestic beast, cultivated plant, and escaped weed in environmental harmony.

William Cobbett, author of *The American Gardener*, 1821, complained about the “twin vegetable devils,” burdock and dandelions: “nothing but absolute burning...will kill their roots.” Cobbett also condemned golden rod, or “plain weed, the torment of the neighboring farmer” on Long Island, New York. Cleverly, and perhaps with his tongue in his cheek, he discussed this North American native’s adoption by London gardeners, and described a flower border of *Solidago* at Hampton Court that was thirty feet wide and a half-mile long: “the most magnificent walk in Europe.” Cobbett was also peeved that mountain laurel (*Kalmia latifolia*), “little dwarf brush stuff,” was selling in London nurseries for \$1 a plant, which “was no bigger than a handful of thyme.” Jeremiah Simple’s humorously insightful analogy in the *American Farmer* also captures the inevitable nomenclatural issues that arise when trying to differentiate between weeds and ornamental flowers: “Thus it is that what we most despise here as

more than useless, is cultivated with care in Europe, and our most noxious plants are returned to us as treasures, and perhaps too in a degenerated state. Something like some of our dashing young bucks who visit Europe to be refined, and return to us greater fools than they were before.”

André Thouin, a botanist/horticulturist who was Director of the Jardin des Plantes in Paris, was an admirer of Thomas Jefferson and their correspondence lasted forty years. Annually, Thouin

would forward a shipment of garden and agricultural seeds to Monticello, and Jefferson, feeling the seeds might be more successfully grown in more capable hands, usually sent the packets off to other American horticulturists, such as Philadelphia’s Bernard McMahon and New York’s David Hosack. In 1822 Jefferson consigned the seeds to the



Andre Thouin, Jefferson correspondent and Director of the Jardin des Plantes in Paris

Albemarle Agricultural Society. Initially, Society officials didn’t know what to do with the seeds, and they were confused by the botanical names identifying them. They formed a committee. Finally, after study and deliberation, committee chairman, Peter Minor, concluded, “I feel much at a loss to decide what would be

Twenty Worst Weeds at Monticello Today

Japanese Stilt Grass
(*Microstegium vimineum*)

Johnson Grass
(*Sorghum halpense*)

Russian Olive
(*Eleagnus* sp.)

Silver Goosegrass
(*Eleusine indica*)

Japanese Honeysuckle
(*Lonicera japonica*)

Nutsedge
(*Cyperus esculentus*)

Akebia or Chocolate Vine
(*Akebia bipinnata*)

Winged Stem Sunflower
(*Verbesina alternifolia*)

Crabgrass
(*Digitaria* sp.)

Bindweed
(*Convolvulus arvensis*)

Wild Onion
(*Allium vineale*)



Wineberry, Rubus occidentalis, has naturalized in Monticello's forests.

Wineberry
(*Rubus occidentalis*)

Ailanthus
(*Ailanthus altissima*)

Chrysanthemum Weed
(*Artemisia vulgaris*)

Chickweed
(*Cerastium vulgatum*)

Poison Ivy
(*Rhus radicans*)

Bermuda Grass
(*Cynodon dactylon*)

Dandelion
(*Taraxacum officinale*)

Nimblewill
(*Muhlenbergia schreberi*)

Princess Tree
(*Paulownia tomentosa*)

a suitable answer to the presents of Mr. Thoin, seeing that he has sent us mostly the weeds of our own country. Shall we pay him in kind or not?"

Only fifteen percent of our worst weeds today are North American natives, while the majority originated in Europe or Asia. In the early-19th century, however, thirty-five percent of the worst weeds were native; the rest originated from Europe. Forest weeds imported from Asia, such as Japanese honeysuckle, stilt grass, and chocolate vine, are the most serious exotic invasives because they threaten the ecological stability of an entire ecosystem, not just the health of one's discrete garden. A frightening trend has been how recently many of these plants arrived at Monticello, and how quickly they have become pestilential in both the native and the cultivated landscape. Five of our worst eight weeds—Japanese stilt grass, Akebia, silver goosegrass, Johnson grass, and winged stem—were either uncommon or weren't growing at Monticello in 1985. It's scary. Thomas Jefferson had it easy. Conventional wisdom has always suggested that gardens and plants in the age of Jefferson enjoyed a virgin age of innocence, free from the pestilence of insects, disease, and weeds introduced from other parts of the globe. Certainly, early American invasive weeds did not provide the insidious threat that exotic invasive plants pose to both ecological and horticultural harmony today.

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