Health, Medicine, & Weeds

Even as there are numerous benefits to health that can be gleaned from domestic vegetables, so this is true of wild plants, and sometimes even more so. Some such advantages present themselves on the most basic of levels. Take, for instance, our sense of sight. As to why we humans so often yearn to "get out in nature," especially when under great stress, it may be that the very color of wild vegetation, green, holds the key, for this color has been known to relax the mind, destress the eyes, lower blood pressure, and induce a reverence for the life that it represents (Wigmore 1985: passim).

Chlorophyll is the pigment that conveys this wondrous green tint to plants. This unique substance also appears to contribute substantially to human health when ingested, giving rise to an upswing in energy, improved overall health, and a heightened sense of well-being. Scientific studies have revealed, in addition, that chlorophyll can regenerate the blood, help heal some intestinal diseases, reenergize geriatric patients, and possibly help prevent cancer. Popular health writers such as Bernard Jensen and Ann Wigmore have done much to acquaint the public with the wonders of this powerful green vitalizer (Wigmore 1985: 120–21 and references), but knowledge of its benefits needs yet to be more ingrained in the minds of the public.

WILD-PLANT NUTRIENTS

Aside from chlorophyll, edible weeds contain numerous other components that provide health benefits. Euell Gibbons did much to bring this knowledge to the public by means of the many wild-plant analyses that he did and reported in his books (Gibbons 1971). Yet today, this information remains largely unknown. This is unfortunate in that wild fruits and vegetables are often far superior to their domestic counterparts in their nutrient content (not to mention their taste!) while lacking harmful preservatives, dyes, and waxes.

Take, for instance, lamb's quarters (see page 145), a sort of wild spinach, which outshines domestic spinach in its content of protein, vitamin C, and pro-vitamin A (Gibbons 1971: 161). That is quite an accomplishment, especially for pro-vitamin A, because spinach contains more of this vitamin than any other marketed green vegetable—approximately 8,100 imperial units per 100 grams, compared with 10,000–15,000 for lamb's quarters (Zennie and Ogzewalla 1977: 77). Many wild edibles, however, overflow with valuable nutrients in amounts that surpass most or all of our domestic veggies. Just staying with pro-vitamin A for now, several other common edible weeds surpass spinach in their content of this vitamin, including plantain (page 180), with 10,000 imperial units per 100 grams (Zennie and Ogzewalla 1977: 77); violet (page 248), with an incredible 15,000–20,000 imperial units per 100 grams (Zennie and Ogzewalla 1977: 77); and peppergrass (page 173), with 9,300 imperial units per 100 grams.

Another example of the ultrapotency of the wild is the stinging nettle (page 226), an edible plant (when properly prepared) that contains an incredible amount of protein—one source finds 42 percent by dry weight (Tull 1987: 16). That may be more than is contained in the leafy green portion of any other green plant, wild or domestic! But that is not all: nettle is also one of the richest sources of chlorophyll known in the plant world—so much so that it has been cultivated for commercial extraction of this substance. In fact, it is rich in a wide spectrum of nutrients, especially magnesium, calcium, chromium, zinc, and vitamin C. Its content of iron, although not particularly high, has proven to be quite bioavailable to humans because the large amount of vitamin C in the plant assures its absorption.

Arrowhead tubers (page 22), which have been a staple of many Native American tribes (whose knowledge saved the lives of the Lewis and Clark expedition, according to their own testimony), are an incredible source of energy, yielding up to 400 calories per serving and harboring a rich amount of potassium, phosphorus, and thiamine (vitamin B1).

The familiar chickweed plant (page 75), a staple of yards and gardens as well as available to the forager in various wild forms (especially in the Midwest as the delicious water chickweed, *Stellaria aquatica*), has one of the highest contents of vitamin C known in a green. It is also rich in copper, iron, magnesium, silicon, manganese, and zinc—a genuine nutritional powerhouse. As with stinging nettle, the high vitamin C content allows for good absorption of the plant's iron. Many foragers remark that more chickweed passes their lips than any other plant, and I confess to being among them.

Numerous other examples could be cited, but suffice it to say that edible weeds can be incomparably nutritious. In fact, the more than sufficient information available allows me to provide a chart of comparison between common edible weeds and the very best in marketed vegetables (see page 13).

As source material, I have used the US Department of Agriculture's nutrient databases (from the agency's periodically published book entitled *Composition of Foods* and its very useful website at www.nal.usda.gov/fnic/food-composition), James Duke's internet database, https://phytochem.nal.usda.gov/phytochem/search/list, and resources from my bibliography, listed on page 11.

OTHER PHYTOCHEMICALS

Aside from nutritional benefits, numerous wild plants contain one or more biologically active compounds that have made them popular in healing remedies, sometimes over centuries of use. In some cases, this is because certain amounts or combinations of these compounds have lent these plants to some very specific uses in human health. Thus, an individual plant may possess a combination of constituents that yields anti-inflammatory, antiseptic, antispasmodic, sedative, carminative (gas-expelling), or yet some other helpful effects.

Interestingly, many of the above-described effects on human health on the part of various plants have been known, and used, for hundreds—sometimes thousands—of years, although without detailed scientific knowledge of the mechanisms of efficacy. The wound-healing and blood-stemming (styptic) effects of the meadow-dwelling plant yarrow (page 282), for instance, were said to have been implemented by the warrior Achilles in tending to his injured compatriots during the Trojan War—over three millennia ago! Hippocrates and other ancient physicians were acquainted with many benefits from the plants and discussed them in their extant works. North America's Indigenous tribes have implemented over 3,650 vascular plants for medicinal or culinary benefits.

The discovery of the therapeutic properties in herbs is shrouded in mystery but probably was achieved variously by means of trial and error, by accident, by watching what other mammals (such as bears) ate when ill or lacking in some way, and perhaps by other means not known today. According to the ancient Jewish work known as the *Book of Jubilees* (composed during the first or second century BCE), faithful messengers of the Creator transmitted to Noah the knowledge of how to heal with the various plants; he, in turn, passed such knowledge on to his descendants (chapter 10, verses 11–12). At any rate, the accumulated knowledge was passed on to succeeding cultures. In fact, many North American herbalists—even pharmacists—owe much of their plant healing knowledge to the Native Americans, already mentioned, who kindly shared their carefully cultivated storehouse of herbal knowledge with early settlers who found the labor of taming a new land to be compounded by various ills. This knowledge, in turn, was recorded in the various herbals and pharmacopeias to which later phytotherapists and pharmacists turned as the starting point for their own investigations.

In regard to the nuts-and-bolts specifics of the efficacy of herbal medicines, we are now living in a most exciting time, as only in this present age do we have the scientific tools necessary to adequately explain how plants heal by means of their chemical content—research that is being increasingly done in universities and other bases of scientific investigation (especially in Europe, Asia, Australasia, and Canada). All of these discoveries, coupled with an increasing frustration by the public with orthodox medicine (including the many thousands of deaths each year that have been established to be iatrogenic—that is, physician induced) have led to what, since the 1970s, has been called an "herbal renaissance." Botanical remedies now abound—not only in health-food stores but also, as they did at the turn of the previous century and earlier, in pharmacies. A recent study revealed that over one-fourth of the American public uses medicinal herbs (Rashrash et al. 2017). Books, magazine articles, and television commercials about herbal medicine are also commonplace. In short, herbal medicine has been mainstreamed.

To provide some insight into the medicinal usage of weeds, however, let's take a cursory look at how some of the plant compounds currently being investigated can make an impact on human health.

Alkaloids

Alkaloids occur in about 10–15 percent of vascular plants and are defined as generally toxic substances that affect the

resources

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motherwort

central nervous system of living creatures. They contain heterocyclic nitrogen and are produced in plants from amino acids and related substances. Despite being generally toxic (they are often the substance that makes poisonous plants toxic—even deadly), a number of alkaloids have been put to use in small amounts, or in certain forms, as medicinal agents. In fact, alkaloids were among the first substances isolated from plants for medicinal purposes. Examples of commonly known alkaloids include quinine, codeine, ephedrine, morphine, nicotine, and caffeine (note the *-ine* endings). In the present work's main text, you will note various alkaloids referenced in conjunction with their therapeutic activities.

Glycosides

Glycosides are extremely abundant in the plant kingdom. They are defined as substances in which a sugar molecule is chemically bonded with a nonsugar molecule (called an *aglycone* or *genin*). In such a compound form, glycosides are often, although not always, inert, but when they are broken down into their basic components of aglycone and sugar—such as can occur via ingestion as well as by other means, including sometimes a mere picking or damaging of their plant source—the aglycone part is often rendered biologically active. Unfortunately, the nature of glycosides as just explained accounted for some of their unique and important antiviral properties being "masked" until the 1990s, when their aglycone components began to be more rigorously investigated (Hudson 1990: 119).

You will encounter many references to various glycosides scattered throughout the text of the field guide that follows. Note that certain of them, known as *cardiac glycosides* or *cardenolides*, are cardioactive—they affect the heart, either for good or for bad, depending on type and amount. References will be made as well to *anthraquinone glycosides*, which are laxative in small amounts and toxic in larger amounts. Various other types of glycosides will be referred to as well, including the following.

COUMARIN GLYCOSIDES

These are glycosides that are widely sprinkled among the many plant species, being characterized by an oxidized, phenolic sort of aglycone known as a *coumarin*. They display anticoagulant, antibacterial, anthelmintic, analgesic, estrogenic, and sedative activities (Farnsworth 1966: 165). Psoralen, a type of coumarin known as a *furanocoumarin* (wherein a coumarin has fused with a furan ring) and occurring in yarrow, has proven useful in the treatment of psoriasis (Fuller and McClintock 1986: 320). Furanocoumarins have also proven effective against many kinds of gram-positive bacteria, and it has been demonstrated that they possess the rare ability to bind DNA (Fuller and McClintock 1986: 320). A coumarin derivative known as scopoletin (technically known as a *hydroxycoumarin*) has been found to be a powerful anti-inflammatory and antispasmodic agent useful in the treatment of allergies, menstrual cramps, and other troublesome conditions. This chemical is found in stinging nettle and in some other plants.

IRIDOID GLYCOSIDES

These are a group of bitter-tasting chemicals technically known as *monoterpenoid lactones*. They include aucubin, a powerful antibiotic compound found in plantain, mullein, and several other wild plants in sufficient amounts to make those plants useful as topical antiseptics for minor cuts, scrapes, bites, and other wounds. In addition, aucubin is anticatarrhal and increases the excretion of uric acid—which in excess amounts is connected with gout—by the kidneys.

Flavonoids

Flavonoids occur in all vascular plants—sometimes in free form, but often as the aglycone component of glycosides. Flavonoids that have been known to be biologically active have historically been designated as *bioflavonoids*. They are thought to play a vital role in restoring, if not also maintaining, human health (Middleton 1988). It has long been known, for instance, that bioflavonoids serve an important function in the maintenance of capillary walls (so much so that a common indicator of deficiency in bioflavonoids is frequent nosebleeds). In fact, initial enthusiasm on the part of a number of researchers had even designated them, collectively or sometimes individually, as a vitamin—vitamin P—though this designation was later shown to be technically inappropriate. Still, evidence accumulated to demonstrate that bioflavonoids do work synergistically with vitamin C in the body in an antioxidant-dependent, vitamin C–sparing way (Middleton 1988). Time has revealed that their role in human health is significant, contrary to what orthodox dietitians had once so confidently asserted.

Although flavonoids' role in maintaining human health has not yet been fully explicated, evidence for a role as therapeutic agents in the alleviation of health problems is strikingly impressive, and much research has focused on medical possibilities with these substances since the 1940s. In fact, two bioflavonoids—rutin and hesperidin—have been employed in orthodox medicine for several decades. Quercetin, found in many edible weeds, has captured the attention of biologists and other researchers, proving its worth in the restoration of human health in some very important respects. One of these, of great interest to those afflicted with hay fever and other kinds of allergies, is its not-too-long-ago-explicated role as an inhibitor of histamine-mediated allergic reactions (Middleton 1988). Also investigated have been the marked antiviral effects that this bioflavonoid has been shown to exert against some eleven kinds of "tough guy" viruses (Selway et al. 1986; Middleton 1988).

Comparison Chart of Wild vs. Domesticated Veggies

To interpret this chart, note the following: Figures given are for *100-gram servings* of foods in their *raw state* unless otherwise noted. Domesticated veggies are *italicized*italicized.The four highest nutrient amounts for each category are put in bold. (Note that out of twenty-four winners here, wild plants nabbed twenty, while marketed vegetables secured only four!) "ND" = "no data available"

Vegetable	Protein (g)	Vitamin A (IU)	Vitamin C (mg)	Calcium (mg)	Iron (mg)	Potassium (mg)
Amaranth	**3.5**	6,100	80	**215**	3.9	50
Beet greens	2.2	6,100	20	ND	3.3	ND
Broccoli	3.4	1,542	93	48	0.9	325
Cabbage	1.4	133	33	47	0.6	246
Cattail shoots	1.8	ND	76	58	2.0	**639**
Cauliflower	2.0	19	46	22	0.4	303
Chickweed	1.2	ND	**350**	160	2.9	243
Chicory greens	1.7	4,000	24	109	0.9	430
Dandelion greens	2.7	**14,000**	35	**187**	3.1	397
Dock greens	2.0	12,900	**119**	44*	2.4	338
Fireweed greens	2.8	ND	68	186	2.7	382
Kale (cooked)	1.5	7,400	41	72	0.9	228
Lamb's quarters	**4.2**	11,600	80	309*	1.2	**684**
Parsley	Trace	5,200	**130**	140	**6.0**	550
Peppergrass	2.6	9,300	69	81	1.3	**606**
Plantain	2.5	**13,000**	8	184	1.2	277
Purslane	1.7	2,500	25	65*	3.5	494
Romaine lettuce	2.0	2,900	26	40	1.2	322
Sheep sorrel	2.1	**12,900**	54	66*	**5.0**	198
Shepherd's purse	**4.2**	1,554	36	**208**	**4.8**	395
Sow thistle	2.4	2,185	32	93	3.1	67
Spinach	3.3	6,715	27	99*	2.7	**557**
Stinging nettle	**6.9**	1,100	10	ND	**5.0**	20
Swiss chard	2.4	6,500	32	ND	3.2	ND
Turnip greens (cooked)	1.4	5,498	27	**197**	0.8	203
Violet	ND	**15,000**	**210**	ND	ND	ND
Watercress	ND	4,900	79	151	ND	ND
Wood-sorrel	0.1	2,800	ND	ND	ND	ND

* = Calcium available only, or primarily, in unusable *oxalate* form. ND: No data available.

Anthocyanins, a type of flavonoid that has been given a lot of press in the past few decades, are nitrogenous, water-soluble pigments responsible for the tints of flower petals in the red-violet-blue range and for certain autumnal colors occurring in leaves. Their contributions to human health were unappreciated until the 1960s but since then have been under intense study. Largely investigated in this regard have been the potent free-radical-scavenging abilities that anthocyanins have been shown to display. Then, too, like other flavonoids, anthocyanins strengthen blood vessels and have shown to be especially contributory to microcirculation in the eyes, where they also support the visual purple (rhodopsin) of the eye's cones, improving night vision and even myopia. Other research shows that they can favorably modulate how cholesterol functions in the body.

Partaken in their natural form in edible foods, both domestic and wild, most—if not all—flavonoids would appear to be safe, with any potentially harmful effects negated by other substances in the foods or by reactions occurring in the digestive processes.

Saponins

Then there are the highly interesting saponins, which possess a terpenoid aglycone (called a sapogenin). Although not as widespread in the plant kingdom as are flavonoids, they still occur in most flowering plants—the current state of phytochemical knowledge has isolated them in about six hundred plant species from almost one hundred different plant families. Curiously, saponins are quite a bit like soap particles, frothing greatly when mixed or shaken with water, although they are nonalkaline. (The term *saponin* is from the Latin word *sapo*, meaning "soap.") One common wild plant containing these compounds in abundance, bouncing bet (see page 50), is also known as soapwort because its leaves and stems can be crushed and rubbed on one's hands to produce a soapy froth to clean them—a feature that has been heartily implemented by both Native Americans and settlers of bygone times.

Because of the nature and amount of the saponins that saturate soapwort, however, this plant is potentially toxic if ingested (although, interestingly, several Native American tribes discovered preparative methodologies to offset this). Soapwort toxicity produces nausea, gastrointestinal irritation, and vomiting.

In the form and concentration in which they can be found in certain other wild plants, a number of saponins are thought to convey some health-restorative benefits upon ingestion of the plants in which they occur as constituents. For example, the saponin content in mullein helps to make an infusion of that plant a useful expectorant for those afflicted with colds, bronchitis, asthma, and similar complaints.

In their concentrations in certain other weeds, saponins appear to yield diuretic and laxative effects to their users. In yet others, such as chickweed (page 75), they produce a crude anti-inflammatory effect. (In fact, plant saponins have been implemented by pharmaceutical chemists to synthesize cortisone.) Saponins have also been shown to exert powerful antifungal and antibacterial effects (Hiller 1987).

Finally, research conducted since 1990 has found certain orally administered saponins to be immunomodulators, stimulating—in animal experiments—humoral and/or cell-mediated aspects of the immune system (Hudson 1990: 140–41).

Sesquiterpene Lactones

Sesquiterpene lactones are compounds occurring widely in several plant families, especially the Asteraceae (daisy) family. Aromatic and bitter in taste, they are usually concentrated in the leaves or flowers of plants and most particularly in the plant's glandular hairs (trichomes). They are being investigated with fervor owing to anticancer effects that have been elicited from them (Hausen 1992: 228). A number of sesquiterpene lactones also exert antifungal, anthelmintic, antibacterial, analgesic, and anti-inflammatory effects. Prominent in the latter respect are the *azulenes*, occurring in yarrow (page 282) and in pineapple-weed (page 178), no doubt elucidating the traditional use of these herbs for gastritis.

Tannins

Tannins are phenolic substances occurring in many weeds and especially in shrubs and in tree bark. They occur in two forms: (1) *condensed tannins*, related to flavonoids, and (2) *hydrolyzable tannins*, derived from simple phenolic acids. Tannins possess the unusual ability to precipitate proteins. This property makes them useful in treating certain diseases or conditions, if used judicially. That last phrase is significant, for in large amounts—such as can be obtained through excessive consumption of black tea and even a number of herbal teas—tannins irritate intestinal mucosa. In small amounts, however, they serve the useful function of precipitating the protein contained in the mucosal cells, thus rendering these cells impermeable to any irritating substances that may be present. Likewise, they can inhibit infectious agents by disrupting their proteins and/or by starving them of their protein food source.

Not surprisingly, therefore, tannins are used to resolve diarrhea and to heal ulcers and various afflictions of mucous membranes throughout the body. Their well-documented use in aiding the healing of burns is also attributed to the aforementioned property. Virucidal abilities have also been discovered in these remarkable phytochemicals (Hudson 1990: 159–61).

Essential Oils

Essential (or volatile) oils are important constituents of some plants, especially aromatic ones. They can exert remarkable antibacterial and antifungal effects (Farnsworth 1966: 268). It is thought that the basis of their antiseptic action has partly to do with their ability to increase the flow of blood when coming in contact with mucosa. Likewise, they may aid a distressed digestive system by increasing the flow of gastric juices or by acting as a carminative. Species in the mint family (Lamiaceae or Labiatae) are renowned for their essential oils. Menthol, occurring in greater amounts in the essential oil of wild mint than in any other form known, including even the cultivated peppermint, is well known and appreciated for its decongestant and carminative effects but has also been found of late to be useful in the treatment of sports injuries with one study describing its efficacy as surpassing the more traditionally used salicylates (see Wild Mint, page 264). Thymol—which has been well known to orthodox medicine as a powerful antiseptic, anthelmintic, and antifungal—occurs in the most concentrated form known in the essential oil of horsemint, a wild meadow-loving herb characterized by its powerful, perfume-like scent.

Mucilage

Mucilage, the last individual plant component we will summarize, occurs in a number of wild plants, including in the common weed plantain (see page 180). When ingested, mucilage reacts with water present to form plastic-like masses that protect mucous membranes from irritants. Thus, it has proven popular in remedies for the relief of conditions involving irritated mucous membranes, such as sore throat and ulcers.

HOLISTIC MEDICINE

The study of the physical and chemical properties of plant- and animal-based crude drugs, including the plant components we have isolated above, is defined by the term *pharmacognosy*. It is a wonderful science, explaining a great deal relative to the healing powers of wild plants. But it does not explain *everything*, although unfortunately some of its advocates seem to think that it does. As heirs of the Cartesian philosophy that attempts to define everything by the sum of its components, many Western scientists have failed to grasp some important considerations that have not so readily eluded health researchers who have embraced a more holistic (wholistic) method of appraisal. *Holism* is a science that looks at things in their entirety and does not judge the whole solely by the sum of its parts. It also does not downplay the testimony of history as to how herbs have affected human health for hundreds—sometimes even thousands—of years.

On that latter point, let's get specific. The plant known as boneset (page 44) was used by both Native Americans and early European settlers (as well as by enslaved people and, after the Civil War, emancipated black communities) to deal with colds, influenza, malaria, typhus, and dengue. Various health practitioners of the time, including many medical doctors, recorded in great detail the application and tremendous efficacy of this herb. With the advent of modern drugs, it fell out of use and has since been held by orthodox medicine to be practically worthless—devoid of significant biological or pharmacological activity. Starting in the 1970s, however, the herb attracted the attention of several phytochemists and other scientists who, in a number of skilled analyses and studies published in scientific journals, confirmed many of the herb's renowned medicinal abilities—especially immune-stimulating and fever-fighting activities. In the present century, additional scientific research has isolated the exact mechanism whereby boneset disallows viruses to take over body cells in order to replicate.

Here the question to be posed is this: how many years of potential benefit to users (without the harmful side effects often accompanying standard drugs) have been lost because orthodox medical practitioners and investigators employed a strictly reductionistic, and not a holistic, approach to evaluating this herb—dismissing it because it competed with drugs being hyped and because nobody cared enough to verify that it contained any of the "right stuff"? The tragedy of waste, not to mention the uncalled-for slurs on natural healers who had been employing these herbs all along, is assuredly a black mark on the record of orthodox medicine. Yet waste abounds still in the pharmacological field where researchers choose to experiment with extending the properties of existing drugs in preference to investigating the properties of the wide variety of crude drugs—plants—whose efficacy is already time-tested in various cultures. How many untapped powerhouses are thus being neglected remains anybody's guess.

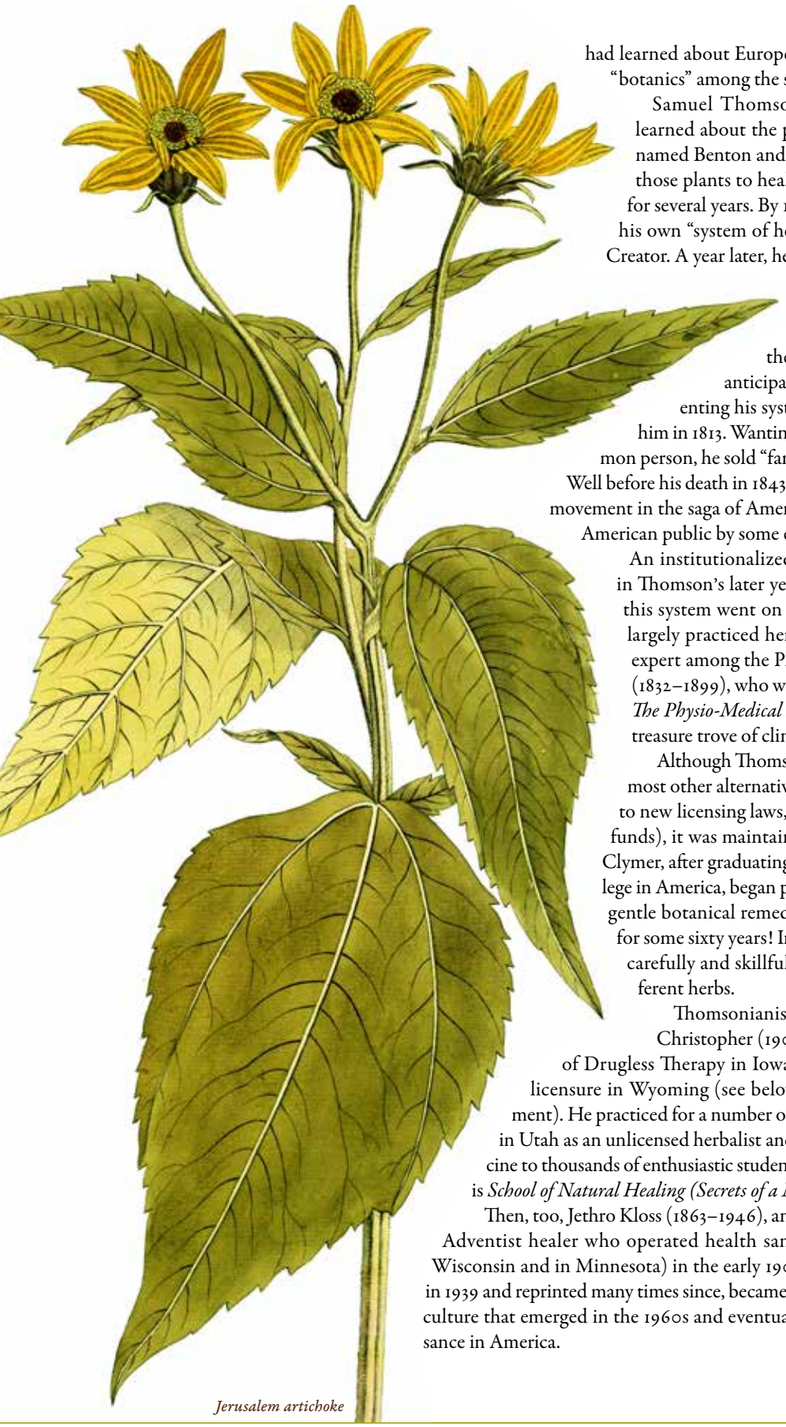
Of course, the advances in phytochemistry are very helpful and much to be lauded. Even without this information, however, the herbal knowledge accumulated through centuries of use has refined the various applications of healing plants to an art. Hence, skilled herbal practitioners have, in our modern day, often helped persons abandoned as hopeless by the orthodox medical realm. In the hands of these skilled healers, the consistent results obtained—person after person, culture after culture, animal after animal—are the only testimony that herbs have ever truly needed.

In this regard, a brief history of the use of herbs by skilled herbal healers on American soil would no doubt prove to be of value, and so I will proceed with such below.

AMERICAN HERBALISM

Of course, the implementation of wild plants as food and as medicine in the United States began with its original inhabitants, the Native Americans, whose uses will be referred to time and again in the field guide to follow.

Herbal enthusiasts among the European settlers gleaned a great deal of knowledge about native plants from various tribes, amalgamating this new information with what they



Jerusalem artichoke

had learned about European herbs to practice as "root doctors" and "botanics" among the settlers.

Samuel Thomson (1769–1843), a New England farmer, learned about the plants of the field from a neighbor woman named Benton and later, as a teen and young adult, how to use those plants to heal from a root doctor who lived at his home for several years. By 1805, he had left farming and had developed his own "system of healing," which he viewed as a gift from the Creator. A year later, he opened an infirmary.

Though persecuted voraciously by medical orthodoxy, including in court, Thomson stuck to his guns. By 1810 or thereabouts, however, he decided to fend off anticipated legal and competitive challenges by patenting his system of healing, and a patent was granted to him in 1813. Wanting to keep his system in the hands of the common person, he sold "family rights" to it for a most reasonable price. Well before his death in 1843, his followers had emerged as a powerful lay movement in the saga of American healing, treating up to one-fifth of the American public by some estimates!

An institutionalized form of Thomsonianism that developed in Thomson's later years was Physiomedicalism. Practitioners of this system went on to found colleges to produce doctors who largely practiced herbal medicine. The most important herbal expert among the Physiomedicalists was William Henry Cook (1832–1899), who wrote the magnificent clinical reference work *The Physio-Medical Dispensatory*, published in 1869, which is a treasure trove of clinically tested herbal remedies.

Although Thomsonianism and Physiomedicalism waned, like most other alternative healing systems, in the early 1900s (owing to new licensing laws, a change in the public attitude, and lack of funds), it was maintained by R. Swinburne Clymer (1878–1966). Clymer, after graduating in 1902 from the last Physiomedicalist college in America, began practicing as a licensed osteopath, employing gentle botanical remedies as his chief form of medicine, and that for some sixty years! In his 1905 tome, *Nature's Healing Agents*, he carefully and skillfully outlined clinical uses for eighty-five different herbs.

Thomsonianism was also perpetuated by John Raymond Christopher (1909–1983), who graduated from the Institute of Drugless Therapy in Iowa and subsequently obtained naturopathic licensure in Wyoming (see below for material on the naturopathic movement). He practiced for a number of years in Evanston as a naturopath and later in Utah as an unlicensed herbalist and spent his later years teaching herbal medicine to thousands of enthusiastic students and writing books. His most famous work is *School of Natural Healing (Secrets of a Master Herbalist)*, first published in 1976.

Then, too, Jethro Kloss (1863–1946), another neo-Thomsonian, was a Seventh-Day Adventist healer who operated health sanitariums in the Midwest (specifically, in Wisconsin and in Minnesota) in the early 1900s. His book *Back to Eden*, first published in 1939 and reprinted many times since, became one of the bibles of the "Green People" subculture that emerged in the 1960s and eventually gave birth to the modern herbal renaissance in America.

Eclecticism was a nineteenth-century movement in American medicine that came to influence almost one-sixth of the medical students in the United States. These aspiring physicians sought a medical practice of a more comprehensive, or "eclectic," nature than what was generally available—one inclusive of an education in alternative therapies such as herbalism and homeopathy Thus, Eclectic medical colleges arose to serve these venerable student goals, producing Eclectic physicians in the thousands.

Wooster Beach (1794–1868) founded the Eclectic movement in medicine in the late 1820s after having educated himself in an "eclectic" manner—combining an herbal education obtained from an old root doctor named Jacob Tidd with a regular medical education secured from a New York university. He launched a school—the Reformed Medical Academy—in 1829 and began writing and publishing books. Cofounders were said to include the eccentric botanist Constantine Rafinesque (1783–1850), who lived with Native Americans for a while in order to learn Native herbalism and was the author of an incredible tome on herbal medicine, *Medical Flora* (1828–30).

Other important Eclectic experts in herbalism were John King (1813–1893), who wrote the scholarly and influential *Eclectic Medical Dispensatory*, a standard herbal repertory among Eclectic physicians; John Scudder (1829–1894); Eli Jones (1850–1933); Finley Ellingwood (1852–1920); and John Uri Lloyd (1849–1936), a brilliant pharmacist and PhD who was co-reviser, with Harvey Wickes Felter (1865–1927), of King's *Dispensatory*. Lloyd also wrote an extremely valuable multivolume set on the medicinal plants of North America.

In the 1800s, as the pioneers moved westward, folk herbalism spread to the frontier and eventually to the Midwest, where it developed an enormous importance in view of the lack of trained physicians accompanying the westward surge. A big impetus here was the fact that many families moving west had purchased one or more of the "domestic medicine" manuals that were then being churned out in the east, consisting largely of Native American herbal remedies and authored by the root doctors or botanics. These include *The Indian Doctor's Dispensatory* by Peter Smith (1753–1816), first published in 1812, and *Domestic Medicine, or Poor Man's Friend* by John C. Gunn, first published in 1830.

Benedict Lust (1872–1945) was the founder of the American naturopathic movement, viewed by some as the heir to Eclecticism (which had largely migrated to England for the same reasons that the Physiomedicalists had ceased operations in America, as mentioned above). He opened a sanitarium and established the American School of Naturopathy. In the 1920s and 1930s, many German healers of a system known as Nature Cure immigrated to the United States, where they began cooperating with Lust's movement. One of these was Otto Mausert, a skilled herbalist who practiced in the San Francisco Bay area and who published the book *Herbs for Health* in 1932. Another important figure of the times was Thomas Deschauer, whose *Complete Course on Herbalism* was published in two volumes in 1940. In many ways, however, the most important book produced by this movement was *The Herb Book*, authored by Lust's nephew, John Lust, and originally published in hardcover by Benedict Lust Publications in 1974. This engaging work discussed some five hundred herbs in great detail. The popular American publisher Bantam Books made arrangements with Benedict Lust Publications to produce a mass-market paperback of *The Herb Book* later in that same year, paving the way for this valuable handbook to become extremely popular with the American public. It quickly became, in fact, one of the bibles of the Green People movement of the 1970s—which, as discussed just above, largely spawned the herbal renaissance in America, which brings us full circle back to the present!

Today, then, the Midwest boasts a number of practicing herbalists and various herb guilds where both practicing herbalists and lay enthusiasts can gather to hear lectures and experiences about herbs. Colleges also offer courses on herbal medicine conducted by herbal practitioners (including your author).