

# Elder and Other Native Herbal Shrubs and Trees

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Since Elderberry (*Sambucus*) is the herb of the year next year, this seems like the optimal time to talk about herbal uses for woody shrubs and trees. Sometimes these slip from notice, as culinary garden herbs dominate center stage. Certainly, woody plants native to North America have a long history of usage for maintaining good health. Some of these are still in use today, with ongoing research. Others have more or less slipped from common use, but are still of interest, especially as Elder is celebrated. This paper is not designed as a prescription for self-medication, but as a thought-provoking look at historical herbal practice, as gleaned from the literature. Ideally, an open-minded physician and an experienced and well-trained herbalist could coordinate a safe and effective health program.

## **Elderberry**

While there are a number of Elderberry species native to the US and Canada, it is *Sambucus canadensis* that is most common in the central and eastern parts. In fact, this one is often considered a woody weed in fencerows, along ditches, and around farmsteads. In many instances, only the local birds take much notice of this medium to large shrub. Flowers are used to produce elderflower cordial, elderflower syrup, batter-dipped fritters, and as a flavoring in pancakes and marshmallows. Because of possible diuretic effect, elder flowers should be used with caution if taken in addition to diuretic drugs. Fruit has also been used to make wines, cordials, marmalade, fruit pies, and relishes. Uncooked berries have a dark purple juice and are astringent and inedible, sometimes causing nausea, vomiting, or severe diarrhea. Cooking the fruit or the juice can temper these effects. Elder fruit contains more phosphorus and potassium than any other temperate fruit crop, and is also rich in vitamin C.

Medicinally, elder has been used for hundreds of years. There may be a measurable effect in treating flu, alleviating allergies, and boosting the overall respiratory system. A 2010 study discovered that *S. nigra* juice prevented viruses from infecting mucous membranes. An elder flower tea has been used to break dry fevers and stimulate perspiration, aid headache, indigestion, twitching eyes, dropsy, rheumatism, appendix inflammation, bladder or kidney infections, colds, influenza, and consumption. Conflicting folklore says that elder will ward off evil spirits, while it is also said that witches will often congregate under its branches.

Remember that the leaves, twigs, branches, seeds, and roots contain a cyanide-producing glycoside, which gives rise to cyanide as it is metabolized in the body. Although elder stems have been used to make whistles and flutes, prolonged contact may be toxic. An “herbal tea” made from the leaves should be treated with extreme caution, and probably avoided.

## **Wintergreen**

One of the smallest shrubs, Wintergreen, or Eastern Teaberry, *Gaultheria procumbens*, grows only 4-6 inches high on the forest floor, particularly in cool shade in acid soil under evergreens. Leaves can be nibbled, brewed into a tea, or used as a flavoring, such as in root beer. Teaberry is an ice cream flavor locally, where the plant is common, and also inspired the name of Clark’s Teaberry chewing gum. Leaves need to be fermented for about 3 days to fully release their essential oils.

Wintergreen has been called “topical aspirin”. Medicinal uses include anti-inflammatory, analgesic, antispasmodic, and hepatic regenerator. It also exhibits blood thinning activity similar to aspirin. It has traditionally been used for muscular rheumatism, tendonitis, and cramps. Native Americans used it ground up in a poultice to take the swelling and pain from a swollen joint or muscle. The scent may be familiar from such commercial preparations as Ben-Gay. It has antiseptic influence on the urinary system and is sometimes used in the treatment of cystitis. It contains methyl salicylate, which is commonly used to treat sore muscles or arthritis. Undiluted wintergreen essential oil is considered highly toxic, due to its methyl salicylate content. Salves, lotions, and ointments, while effective analgesics, may also cause irritation or allergic contact dermatitis. Care should be taken. Those allergic to aspirin should avoid wintergreen. Pregnant or nursing women should avoid its use also.

### **Large Cranberry**

Popular in jellies and sauces at holiday meals, Large Cranberry, *Vaccinium macrocarpon*, is a well known condiment food and juice. Cranberries are low, creeping shrubs or vines up to 7 feet long with upright branches from 2 to 8 inches in height. They have slender, wiry stems that are not thickly woody and have small evergreen leaves. The flowers are dark pink, with very distinct reflexed petals, leaving the style and stamens fully exposed and pointing forward. They are pollinated by bees. The fruit is a berry that is initially white, but turns a deep red when fully ripe. It is edible, with an acidic taste that can overwhelm its sweetness. The flowers, which superficially resemble the head of a crane, explain the name given to them by the Europeans, “crane berries,” which through usage became cranberries.

High in phytonutrients, its anti-oxidant properties are also well documented. Native Americans discovered its versatility as a food, dye, and healing agent. They used it to treat bladder and kidney diseases. Early European colonists learned to use the berry both raw and cooked for ailments, including appetite loss, stomach problems, blood disorders, and scurvy. Today it is best known for preventing urinary tract infections commonly caused by the bacterium *Escherichia coli* (*E. coli*). Some studies suggest that cranberry may also prevent the bacterium *Helicobacter pylori* from attaching to the stomach wall, where it causes stomach ulcers. Other areas of interesting possible action include cancer, inflammation, high cholesterol, viruses, and Alzheimer’s disease.

Possible interactions include increasing the risk of bleeding if used with pharmaceutical blood thinners, such as Warfarin. Like aspirin, cranberries contain salicylic acid, so if you take aspirin regularly, or are allergic to it, you should not take cranberry supplements or drink a lot of juice. It may also interfere with other medications which are processed by the liver. Check with a physician for possible interactions.

### **Highbush Blueberry**

Highbush Blueberry, *Vaccinium corymbosum*, is native to eastern North America. It is a deciduous shrub, which thrives around bogs and other moist, acidic soils. The plants grow 6-8 feet high, with dark green, glossy leaves. The flowers are small, white, and bell shaped, usually blooming in late spring. Fruit ripen in late June, July, and into August. Foliage usually has brilliant red fall color, making the plants great in an edible landscape. Acidic soil, pH 4.5 to 5.5 is essential for successful cultivation.

Native Americans used blueberry tea as an anti-spasmodic for cramps, hiccups, colic, cholera, epilepsy, and hysterics. All parts have been used medicinally, with Europeans favoring

the fruit, and Native Americans favoring the leaves, bark, and stems. They ate the berries to treat scurvy, diarrhea, dropsy, and bilious fevers. Chippewas dried the berries and placed them on hot stones and inhaled the fumes to drive out madness. Berries are a great source of vitamin C, iron, phytonutrients, and dietary fiber. They exhibit some of the same ability to prevent bacteria from attaching to organ walls as cranberries.

They are valued as antioxidants, anti-aging agents, for disease prevention, urinary tract infections, and decreased eye fatigue. Consumption has been shown to decrease cholesterol and total blood lipids, which may affect symptoms of heart disease. Juice may affect memory and learning in older adults, while reducing blood sugar and symptoms of depression. It has been used for prevention of cataracts and glaucoma, and for treating ulcers, urinary tract infections, multiple sclerosis, chronic fatigue syndrome, colic, fever, varicose veins, and hemorrhoids. Fresh blueberries are also used to improve circulation and as a laxative. Dried fruit and leaves are used for diarrhea.

### **Ground Juniper**

Ground Juniper, *Juniperus communis*, has many, thickly-spaced branches, covered with prickly evergreen needles in groups of three, usually growing 4-6 feet high but with some specimens growing to 40 feet in height. It is widely distributed throughout the northern hemisphere. It is a dioecious conifer, with female specimens producing numerous fleshy, bluish cones, which superficially resemble blueberries, resulting in their being called “juniper berries”. These are used to flavor gin, liqueurs, poultry, beef stew, pate, and game meats. The taste is aromatic and bitter, a bit like turpentine.

Historically, juniper was burned as incense to ward off evil spirits, and as a disinfecting fumigant smoke during epidemics. Native Americans of the Northwest used tonics made from the branches to treat colds, flu, arthritis, muscle aches, and kidney problems. Other Native Americans used it to treat diabetes. Western tribes combined the berries with *Berberis* root bark in an herbal tea. It was also used as a female contraceptive.

Juniper is valued for its detoxifying action on the body. It acts as a mild diuretic, to eliminate excess water without the loss of potassium and other electrolytes. It has been used to treat urinary and kidney problems, such as edema, kidney stones, and lumbar pain. It can, however, inflame already irritated kidneys, so caution is advised. Its detoxifying action has also been used to treat gout and rheumatoid arthritis, preventing the buildup of uric acid in the body. Juniper berries can also help to clear congestion and are used in cold remedies for that effect.

Juniper is not to be used during pregnancy or where there is kidney disease. If urine begins to smell like violets, discontinue use. Overdose can cause kidney irritation and blood in the urine. Use the essential oil externally only.

### **Bayberry**

Bayberry, *Myrica pennsylvanica*, is a deciduous, mostly dioecious, shrub of eastern North America. It grows 5-10 feet in height and about 5 feet across in full sun to part shade. Flowers on female plants are followed by clusters of thin, grayish-white fruits in late summer, which usually persist through the winter. Fruits are covered by an aromatic, waxy substance, which is used to make bayberry candles, soaps, and sealing wax. The plant's roots have nodules containing nitrogen-fixing bacteria, allowing it to grow in relatively poor soils.

Bayberry essential oil, extracted from the aromatic leaves, is used to scent many products, but is considered moderately toxic due to a high eugenol content. Northern bayberry's astringent

root bark abates diarrhea and hemorrhages, and used as a gargle, soothes sore throat. It is described as astringent and stimulant, and in large doses emetic. It is useful in diarrhea, jaundice, and scrofula. Externally, the powdered bark is used as a stimulant to indolent ulcers, though in poultices it should be combined with elm. The decoction is good as a gargle and injection for chronic inflammation of the throat, leucorrhoea, and uterine hemorrhage. It is an excellent wash for the gums. Water in which wax has been extracted, is regarded as a certain cure for dysentery, with the wax itself valuable in severe dysentery and internal ulcerations.

There is some evidence that some components of bayberry wax may cause cancer, so caution is in order. The American Herbal Products Association states that wax myrtle is safe, but people with hypertension and pregnant women should be cautious if using it.

### **Spicebush**

Spicebush, *Lindera benzoin*, is a shrub usually growing six to ten feet high, but occasionally up to fifteen feet or more, which is found along streams and in open woods as an understory tree. The branches are covered with a smooth, dark brown, almost black, thin bark, and are slender, tapering, and easily fractured. Leaves and stems are fragrant, giving off a spicy, benzene-like aroma when wounded. Plants are dioecious, bearing only male or female flowers on an individual plant. The flowers appear before the leaves, in showy yellow clusters, from lateral buds situated in the axes of the leaf scars of the previous year. The fruit is a red drupe just under a half inch in length. It has a peppery taste and scent and contains a large seed.

Spicewood oil is used to add a spicy fragrance in perfumes, especially those with a lavender bouquet. The berries, dried and powdered, were used during the American Revolution as a substitute for allspice, and early American settlers used dried spicebush bark in place of cinnamon. In the American wilderness, when both the population and stores were sparse, pioneers used spicebush as a general spice. The leaves have been used for tea, and the berries can be added to meats, soups, salad dressings, and vegetables. It has been used as an allspice substitute. Spice-leaf tea has been used as a stimulant, detoxifier, tonic, and is beneficial against worms. Red berries were applied externally to treat bruises, itch, and rheumatism. Internally, a tea of leaves and berries was used for dysentery treatment, an infusion of twigs for fevers and colds, and tea as calmate. Leaves were used for colds, coughs, female obstructions, and an infusion of branches was used to induce sweating, to treat aches and pains, colds, and measles. Crushed leaf was rubbed on the skin as an insect repellent.

During the Civil War, spicebush tea often substituted for coffee when rations ran short. Dried leaves were often used for this purpose, but young branches were also steeped to make a tonic. This spicy beverage had medicinal qualities as well. Pioneers called this plant “fever bush” because a strong bark decoction makes you sweat, activating the immune system and expelling toxins. They used it for typhoid and other fevers, and to expel worms. The Indians used a spiceberry infusion for coughs, colds, delayed menstruation, croup, and measles. They used the oil from the berries, externally, for chronic arthritis. It is also good for flatulence and colic. Spicebush leaf, bark, or berry tea compresses are also good for mild skin irritations, such as rashes, itching, and bruises.

### **Common Witchhazel**

Common Witchhazel, *Hamamelis virginiana*, is a deciduous small tree or large shrub, native to the eastern and central US, reaching a height of 10-15 feet, although it can reach 30 feet in ideal situations. It is usually found as an understory tree, or along forest margins. This plant is

unique, in that it flowers in the autumn, as the leaves are beginning to turn to a bright, clear yellow. Flowers are also bright yellow, with long, thin, twisted petals, and a light pleasant fragrance. Divining rods were often made of a forked branch of this plant.

Earliest works on American medicinal plants included witch hazel, noting its use to treat eye inflammations, hemorrhoids, bites, stings, skin sores, diarrhea, and dysentery, and many other conditions for which the high tannin content would produce astringent relief. Herbalists consider it one of the best to check bleeding, both externally and internally. It is used on pads or in ointments to treat hemorrhoids. A poultice of the fresh leaves or bark was considered useful for relieving the pain and swelling of inflammations. Hazel water is used to treat insect bites and relieve itching, especially on chigger and tick bites, as well as mosquito bites and poison ivy rash. More recent study has found that a specially filtered fraction of the extract, containing mostly proanthocyanidins, was found to have significant anti-viral activity against *Herpes simplex* virus type 1. Witch hazel is one of the few American medicinal plants still approved as an ingredient in non-prescription drugs by the Food and Drug Administration.

Witchhazel extract is distilled from the bark of young stems and roots of this plant, and is still one of the best topical vasoconstrictors around. That's why it's good for puffy eyes. It also remains the active ingredient in the nations leading over-the-counter treatment for hemorrhoids. It works by shrinking swollen blood vessels.

### **Speckled Alder**

Speckled Alder, *Alnus rugosa*, is a deciduous tree, with alternate, simple, and serrated leaves. The flowers are elongate male catkins on the same plant as shorter female catkins, often appearing before the leaves, mainly wind-pollinated, but visited by bees to a small extent. The female catkins are woody and do not disintegrate at maturity, opening to release the seeds in a similar manner to conifer cones. Alder has a symbiotic relationship with *Frankia alni*, a nitrogen-fixing bacterium, which is found in root nodules.

The speckled alder was quite widely used medicinally by the native North American Indians who used it to treat a variety of complaints. It is little used in modern herbalism. The bark is alterative, astringent, emetic, laxative, ophthalmic, stomachic, and tonic. The bark contains salicin, which probably decomposes into salicylic acid (closely related to aspirin) in the human body. This is used as an anodyne and febrifuge. The root bark was mixed with molasses and used in the treatment of toothache. A decoction of the inner bark was used as a wash for sore eyes. The outer bark is astringent and is applied as a poultice to bleeding wounds. It also reduces swelling. Bark was boiled to make medicinal teas for treating rheumatism. It was also applied to wounds as a poultice to reduce bleeding and swelling. Various preparations were used medicinally by Native Americans to alleviate pain of childbirth, as a blood tonic, an emetic and purgative, for coughs and fevers, to stimulate kidneys, to bathe hives or piles, for eye troubles, indigestion, biliousness, jaundice, heart trouble, mouth soreness in babies, and toothaches, also to lower blood pressure, and to clear milky urine.

Native Americans used alder bark to treat poison oak, insect bites, and skin irritations. Blackfeet Indians used an infusion made from the bark to treat lymphatic disorders and tuberculosis. Other Native Americans also used speckled alder to treat anemia, as an emetic, as a compress or wash for sore eyes, for internal bleeding, urinary problems, sprains, bruises, backaches, itches, flux, and piles. When mixed with powdered bumblebees, it was used as an aid for difficult labor by the Chippewas. It was used as an alterative, tonic, astringent, emetic (bark), also for scrofula, secondary syphilis, and some other skin diseases, as well as diarrhea,

indigestion, and dyspepsia. Recent clinical studies have verified that alder contains betulin and lupeol, compounds shown to be effective against a variety of tumors.

### **Sassafras**

Sassafras, *Sassafras albidum*, is a medium-sized deciduous tree, growing 50 to 65 feet in height, with a trunk up to 2 feet in diameter. Bark on the trunk of a mature tree is dark red-brown, with deep furrows. The shoots are bright yellow-green at first with mucilaginous bark, turning reddish brown, with branches and twigs curving upward like candelabras. Leaves are alternate, green to yellow-green, ovate or obovate, 4-6 inches long and 2-4 inches wide. With a short, slightly grooved petiole. Leaves are polymorphic, coming in three (or 4) shapes, either elliptical without lobes, two lobed, or three lobed. Lobes are of uneven size, giving the impression of a mitten with one or two thumbs, left and/or right. Fall color is yellow, tinged with orange or red. Trees are usually dioecious, and spread by root suckers to form large clonal thickets.

Sassafras oil is distilled from the root bark or the fruit. It was used as a fragrance in perfumes and soaps, food (sassafras tea and candy flavoring), and for aromatherapy. It is said to make an excellent repellent for mosquitoes and other insects. The essential oil was used as a pain killer as well as an antiseptic in dentistry. The pith is used in the US to soothe eye inflammation and ease catarrh. Sassafras oil is the preferred source of safrole, which is the main component (75-80%) of the essential oil. The root or root bark is used to make tea, although most commercial sassafras teas are now artificially flavored, as a result of the FDA ban. Safrole is now recognized by the United States Department of Agriculture as a potential carcinogen. Safrole and sassafras have been banned as food additives or flavoring agents by the FDA since 1976, due to safrole's designation as a carcinogen.

Sassafras has been used as a stimulant, pain reliever, astringent, and treatment for rheumatism. Skin eruptions may be bathed in an infusion from the leaves. Sassafras tonic has been used as a treatment for syphilis since the early 1600s. It is used as a corrective in rheumatism, for varicose ulcers, given in painful menstruation, and is effective in treating pain after childbirth, and in all skin eruptive diseases. Essential oil will often relieve most painful toothaches. Poultices of the root are good for cuts and ulcers. The oil of the root is used as an ingredient in liniments and is excellent for bruises and swelling. Leaves can be eaten raw or cooked. The young leaves can be added to salads, while both young and old leaves can be used as a flavoring and thickening agent in soups. The leaves are often dried and ground into powder for later use. This is the file powder of Cajun and Creole cooking. The oil has been applied externally to control lice and treat insect bites. Cherokees used sassafras as a remedy for liver cancers.

Warning: in large doses, oil is poisonous, causing dilated pupils, vomiting, stupor, collapse, and kidney and liver damage, and it can cause skin irritation when used externally. Use only occasionally and in moderate doses, if at all. Avoid during pregnancy, as it decreases mother's milk. Nursing mothers should avoid it, unless decreased milk flow is the desired result.

### **Pawpaw**

Pawpaw, *Asimina triloba*, is the only temperate zone relative of a large family of custard apple fruits. It is native from southern Ontario to eastern Nebraska, south to eastern Texas and across to northern Florida. It is a large shrub or small tree, growing to a height of up to 35 feet or more. The large leaves of pawpaw trees are clustered symmetrically at the ends of the branches

giving a distinctive appearance to the tree's foliage. It has been compared to the drooping ears of a Nubian goat. Leaves are simple, alternate, and spirally arranged, entire, deciduous, obovate-lanceolate, 10-12 inches long, 4-5 inches across, and wedge-shaped at the base. Fall color is rusty yellow. When bruised, leaves have a disagreeable odor like green bell peppers. Flowers are perfect, about 1-2 inches across, rich red-purple or maroon when mature, with 3 sepals and 6 petals. Flowers are borne in early spring at the same time or slightly before the leaves appear, and have a faint fetid or yeasty smell. Fruit is a large, yellowish-green to brown berry, 2-6 inches long and 1-3 inches broad, weighing from 1/2 to 18 ounces, containing several brown seeds 1/2 to 1 inch in diameter embedded in the soft edible fruit pulp.

Seminole Indians reportedly make a tea from the flowers to help kidney discomfort. The seeds contain an alkaloid, asiminine, which is reported to have emetic and narcotic properties. The bark also contains an alkaloid, analobine, and was once used as a medicine. In the 1980s and 1990s, Purdue University isolated compounds from pawpaw bark extracts. Many of these compounds were found to have cytotoxic effects on cancer cell lines. The fruit can be used as a laxative. The leaves are diuretic. They are also applied externally to boils, ulcers, and abscesses. Seeds have been powdered and applied to hair to kill lice. The bark is a bitter tonic. Fruit are edible (except skin and seeds) with a flavor and texture likened to bananas. Toxic seeds are large and lima bean-like.

Warning: seeds are toxic, leaves may cause rash. There is a lack of scientific evidence supporting the safety or effectiveness of pawpaw for any condition

### **Black Willow**

Black Willow, *Salix nigra*, is the largest of the North American willow species, growing 40-90 feet in height, with a trunk diameter of up to 3 feet. Bark is dark brown to blackish, becoming fissured in older trees. Shoots are slender, variable in color from green to brown, yellow, or purplish. Leaves are alternate, long, thin 1-5 inches long and 1/4 to 1/2 inch wide, dark shiny green on both sides or with a lighter green underside, with a finely serrated margin.

Black willow roots are very bitter, and have been used as a substitute for quinine in the past. The Great Lakes Ojibwa used the young branches and twigs to make baskets, and other parts were used to treat indigestion. The bark of the tree can also be used to make a bitter tea with similar chemical compounds to aspirin. Infusions of the cambium layer were used as an aphrodisiac, the Viagra of the 19<sup>th</sup> century. Ancient pharmacopoeia recognized the bark and leaves of willow as useful in the treatment of rheumatism. In 1829, the natural glucoside, salicin, was isolated from willow. Today it is the basic ingredient of aspirin, although salicylic acid is synthesized rather than extracted from its natural state. *Salix nigra* is a remedy of great value in a restricted field in therapeutics. While the bark and its preparations have long been recognized as possessing antiseptic and detergent properties, the use of the aments is of more recent date and confined almost wholly to the generative organs. To be of value, however, only the freshly gathered aments should be used for its preparation to insure medicinal results.

Bark has been prescribed for gonorrhoea and to relieve ovarian pain, as a liquid extract prepared and used in a mixture with other sedatives. It can be used for anything that aspirin is used for, such as fevers, headaches, and the flu. It is also commonly used to treat acute and chronic joint problems and pain resulting from gout, as it promotes elimination of uric acid. In tincture form, willow bark has been shown to alleviate certain symptoms of menopause, including night sweats and hot flashes. Applied externally in compresses, an infusion of willow bark has an astringent effect on inflamed skin and wounds.

### **Slippery Elm**

Slippery Elm, *Ulmus rubra* (syn. *U. fulva*) is a deciduous tree, which can grow to 65 feet in height and 2 feet in trunk diameter. Its heartwood is reddish brown, giving the tree its alternative common name “Red Elm”. Leaves are 4-6 inches long and have a rough texture (especially above), coarsely double-serrate margins, acuminate apices, and oblique bases. This species may be less susceptible to Dutch Elm Disease than American Elm, but is not resistant or immune.

Slippery elm has been used as an herbal remedy in North America for centuries. Native Americans used slippery elm in healing salves for wounds, boils, ulcers, burns, and skin inflammation. It was also taken orally to relieve coughs, sore throats, diarrhea, and stomach problems. It contains mucilage, a substance that becomes a slick gel when mixed with water. It coats and soothes the mouth, throat, stomach, and intestines. It also contains antioxidants that help relieve gastroesophageal reflux disease (GERD), Crohn’s disease, ulcerative colitis, and irritable bowel syndrome (IBS), diarrhea, wounds, burns, boils, psoriasis, and other skin conditions (external). Slippery elm also causes reflux stimulation of nerve endings in the gastrointestinal tract, leading to increased mucus secretion. The increased mucus production may protect the GI tract against ulcers and excess acidity.

The powdered bark is sold in two forms, a coarse powder for use as a poultice, and a fine powder for making a mucilaginous drink. The disintegrated bark forms, when moistened, a flexible and spongy tissue, which is easily molded into pessaries and suppositories. It not only has a most soothing and healing action on all the parts it comes in contact with, but in addition possesses as much nutrition as is contained in oatmeal, and when made into gruel, forms a wholesome and sustaining food for infants and invalids. The mucilaginous inner bark of the slippery elm has long been used as a demulcent, and is still produced commercially for this purpose in the US with approval for sale as a nutritional supplement by the US Food and Drug Administration.

Slippery elm has no serious side effects. Because it coats the digestive tract, it may slow down the absorption of other drugs or herbs. For this reason, it should be taken 2 hours before or after other herbs or medications.

### **Sweet Birch**

Sweet Birch, *Betula lenta*, sometimes called Black Birch or Cherry Birch, is a medium-sized deciduous tree, 65 feet in height, with a trunk diameter of up to 2 feet. Bark on younger trees is smooth, with horizontal fissures and prominent lenticels. Sweet birch is often mistaken for a cherry tree. When scraped, the twigs have a strong scent of oil of wintergreen. Leaves are alternate, ovate, 1-2 inches long and 1-2 inches wide, with a finely serrated margin. Flowers are monoecious catkins, which are wind pollinated. It was used commercially for production of oil of wintergreen before industrial synthesis of this material.

The oil distilled from the wood is insectifugal and can be used to preserve furs. Sweet Birch oil is used as a counter irritant for arthralgia and neuralgia, usually in balms, liniments, and ointments. In folk medicine, the birch species are used as remedies for abdominal and mammary cancers and carcinomas and warts. The bark has been used as an astringent, antiseptic, antipyretic, and antirheumatic. Cherokee chewed the leaves for dysentery and used the bark tea for colds, dysentery, milky urine, and stomach ailments. Delaware used the bark decoction as a

cathartic or emetic. Iroquois used it for colds, fever, soreness, and venereal diseases. Ojibwa used the bark as a diuretic.

Leaves were used for gout, rheumatism, and dropsy, and were also recommended as a reliable solvent for kidney stones. A decoction of them is good for bathing skin eruptions. The oil is astringent. The inner bark can be dried and ground into flour and added directly to stews, and has a unique taste that is delicious. The tea can be applied directly to the skin in cases of poison ivy. Apply at least two coats, allowing it to dry between each one. Birch leaf tea strengthens the hair, counteracts the formation of excess oil and inhibits the production of dandruff. After shampooing, the tea is massaged into the hair and scalp, but is not rinsed out. Hair is treated three times a week, or as needed. It is used internally for arthritis, boils, fever, gout, headache, kidney stones, and wounds. Only the leaves are anti-bacterial. Birch bark is being investigated for its anti cancer potential. Birch helps cleanse the body of toxin, thin the blood, and relieve pain and inflammation. Use as a poultice for bruises, burns, eczema, and wounds. It has been used for skin eruptions, as liniment for rheumatism, as a hair rinse for growth and dandruff. It is used for toothpaste, perfume, and diluted oil soothes teething gums.

Warning: Birch should not be used by anyone who has impaired kidney function. Those hypersensitive to aspirin should avoid using birch.

### **Eastern Hemlock**

Eastern Hemlock, *Tsuga canadensis*, is an evergreen tree, growing to 50-90 feet in height. Needles are flat and short on slender stalks. Needles are green on the upper surface, white striped below. Cones are small and drooping.

In the winter of 1535-36, the three ships of French explorer Jacques Cartier, the father of New France, were frozen in the thick ice off present day Quebec City. Scurvy was running rampant through the crew and 25 had died. The local Iroquois brought branches of an evergreen tree to them, with instructions on how to administer it. Within days the surviving crew had recovered. Etymological evidence points to eastern hemlock as the life-saving evergreen. As well as this use as an antiscorbutic, an astringent tonic brewed from the red inner bark, which contains up to 12% tannin, and therefore has strong astringent properties, was consumed to control diarrhea by the Ojibway, Maliseet, Mi'kmoz, Cherokee, and Potawatomi. An infusion of the foliage was steeped by the Abenaki and Algonquin in Quebec, and taken internally for rheumatism. The Seneca of New York and the Delaware of Ontario steamed the rheumatic limbs with the hemlock infusion.

As is true for many other trees and shrubs high in tannin, a poultice made from the inner bark of hemlock is useful in treating sores, burns, and wounds. Tannins being astringent by definition, the inner bark can also be used to stop minor bleeding, treat hemorrhoids, and to control diarrhea when taken internally. An infusion of the young green needles is diuretic and diaphoretic, making it useful to break a fever. Such needle infusions are also high in Vitamin C. Because of the high tannin content, regular consumption of the tea is not recommended, except in small quantities or occasional use, such as warding off a cold. The bark is rich in tannin and is astringent and antiseptic. A decoction is used in the treatment of diarrhea, colitis, diverticulitis, and cystitis. Externally it is used as a poultice to cleanse and tighten bleeding wounds. A decoction of the inner bark has been applied externally in the treatment of eczema and other skin conditions. A tea made from the leafy twig tips is used in the treatment of dysentery, kidney ailments, colds, and rheumatism.

Warning: Never confuse *Tsuga canadensis* with *Conium maculatum* known as Poison Hemlock, death drink of Socrates. *Tsuga* is a woody evergreen plant, while *Conium* is an herbaceous plant in the Apiaceae plant family, not similar at all.

### **White Cedar**

White Cedar, *Thuja occidentalis*, is a monoecious evergreen tree with fan-like branches and scale-like leaves, usually growing to 30-60 feet in height, with a trunk diameter to about 2 feet. White Cedar is promoted as a treatment for many medical conditions, including cancer. Some proponents claim that it decreases the toxic effects of chemotherapy and radiation therapy. Herbalists prescribe it to treat viral and bacterial infections, coughs, and other respiratory ailments, including strep throat and respiratory distress related to congestive heart failure. Herbalists also use it as a diuretic, as an astringent to purify the blood, to reduce inflammation, and to cleanse the body of toxins. *Thuja* is sometimes used with antibiotics to treat bacterial skin infections and herpes sores. *Thuja* ointment is applied to the skin for ailments such as psoriasis, eczema, vaginal infections, warts, muscle aches, and rheumatism.

Native Americans of the eastern United States and Canada used White Cedar for generations to treat menstrual problems, headaches, and heart ailments. Loggers drank tea made from white cedar twigs to relieve rheumatism. During the seventeenth century, some people called the eastern white cedar the “Tree of Life” because they believed that its sap had healing powers. In the late 1800s the US Pharmacopoeia listed *Thuja* as a treatment to stimulate the uterus and as a diuretic to increase urine flow. The twigs are used to make teas, for constipation or headache. The essential oil is used in cleansers, disinfectants, hair preparations, insecticides, liniment, room sprays, and soft soaps.

In the 19<sup>th</sup> Century *Thuja* was in common use as an externally applied tincture or ointment for the treatment of warts, ringworm, and thrush. An injection of the tincture into venereal warts was said to cause them to disappear.

Warning: Thujone, a component of *Thuja*, is known to cause muscle spasms, seizures, and hallucinations if taken internally. These neurological toxicities are the results of thujone interfering with the action of gamma amino butyric acid, often known as GABA, on nerve cells in the brain. In high doses, thujone is known to damage the liver and the kidneys. Thujone occurs in a number of other plants, most notably wormwood and mugwort. People with seizure disorders or gastrointestinal problems (such as ulcers or gastritis) should avoid White Cedar. Women who are pregnant or breast feeding should not use this herb. Relying on this type of treatment alone and avoiding or delaying conventional medical care for cancer may have serious health consequences.

### **Charles Voigt Biography**

Charles Voigt has been an academic professional member of the faculty of the Departments of Horticulture, Natural Resources and Environmental Sciences, and Crop Sciences at the University of Illinois, at Urbana-Champaign, since November, 1988. His appointment is 75% Extension and 25% Research, with emphasis on culture and management of vegetable and herb crops. In addition, since Fall, 2002, each semester he has taught a home horticulture class on the U of I campus for non-horticulture majors.

Charles grew up on a farm near Bonfield, Illinois, in Kankakee County (60 miles south of Chicago), and received his Bachelor of Science Degree in Horticulture from the College of

Agriculture at the University of Illinois, Urbana-Champaign (UIUC), in 1972. He then moved on to Michigan State University, where he was a teaching technician, involved in courses in all areas of horticulture. He was active from the mid-1970s until 1988 on the family farm as a field crop and vegetable grower, as well as working as an independent landscaper. In 2000, he completed his Master of Science degree in Horticulture, also at UIUC.

Since returning to his alma mater, he has worked with various variety trials and cultural studies of vegetables and herbs, including a long-term variety evaluation of garlic cultivars. He co-authored the book, *Vegetable Gardening in the Midwest*. Charles has been active in planning educational sessions for the Illinois Specialty Growers Convention and Trade Show, now called the Illinois Specialty Crops, Agritourism, and Organic Conference, since 1989, as well as numerous other state and local meetings. In 1989, when the Illinois Herb Association was being organized, Charles volunteered to work on the steering committee drafting bylaws for the group, and to also be the University's adviser to that organization. He attended and spoke at his first International Herb Growers and Marketers Association (later International Herb Association) conference in Minneapolis in 1991. He has served as Chair of IHA's Horticulture Committee since 1997, and is currently a member of the IHA Foundation Board. He is a member of IHA, Herb Society of America, and Garden Writers Association.