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Browsing the Bog

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Abstract: The Cedarburg Bog and its surrounding uplands provided a rich smorgasbord of plants to fill the many needs of its earliest human inhabitants. A flora of the area and a list of plant species that were employed in some manner by the Native Americans would be almost identical. The species discussed in this paper had real or rumored values for a variety of Woodland tribes of the Upper Midwest and later for the settlers. Besides their medicinal value, many plants were sources of food, fiber, dyes, construction, and of a variety of “magical” or symbolic purposes. My intent is not to document the actual effectiveness or safety of the medicinal or food plants, but to present their historical perception as resources in a landscape empty of drugstores, grocery stores, hardware stores, and often, doctors.

INTRODUCTION

It is hard, surrounded by the conveniences of 21st century life, for us to appreciate that Native Americans, and the settlers who later joined them near what is now called the Cedarburg Bog, looked to the land for food, medicine, weapons, dyes, magic charms, clothing, and materials to make their baskets, mats, ropes, twine, cooking and eating utensils, boats and homes.

The landscape that the earliest inhabitants experienced looked a little different than that of today. Pollen samples preserved in the Bog suggest that the forests of 12,000 years ago closely resembled the modern forests of far northern Wisconsin (Fredlund *et al.* 1995). By 9,000 years ago this northern forest had yielded to a post-glacial mixed deciduous forest dominated by sugar maple and oak, important trees for many Forest tribes. An archaeological survey of the periphery of the Bog carried out by Bezella (1992) revealed at least 11 sites inhabited by Woodland tribes between 6,000 BC and 1700 AD. Bezella postulated that peat and emergent aquatic plants were less dense historically, resulting in more open water in the wetland of 4,000 to 5,000 years ago. Easy access to both upland and wetland plants and animals and a year-round source of water made these bog-side locations desirable.

Western medicine at the time of the early European exploration and settlement of the New World was primitive and, occasionally, bizarre. The master medical formula “*treaclé*” or “*theriac*,” that had been in use for 1500 years, was a mixture of about 150 animal, mineral and vegetable ingredients. Practitioners called “astrological botanists” connected the potency of some plants to the rise and fall of celestial bodies, and the fat used by apothecaries to make and bind the ingredients in capsules was sometimes harvested from human corpses (Erichsen-Brown 1979). The connection between microbes and disease was not discovered until the 1870’s, and with no understanding of the systemic nature of some diseases, treatments concentrated on the relief of symptoms. Patients expected that

medicines would taste terrible and, since cures frequently began with a purge, fore and aft, that their effects would be unpleasant.

Native American treatments at the time of colonization may have been more rational than their European counterparts, and the Europeans acknowledged that native medicine was superior in treating fractures, poisons, and wounds and in assisting with childbirth (Erichsen-Brown 1979). Both cultures agreed on the place of charms, placebos, spells, omens, and even exorcisms in their medical arsenals.

Since the first European contact, there has been an exchange of plants and plant lore between the Old World and the New, but early attitudes of Caucasians toward Native American herbal use were ambivalent. Some newcomers acknowledged the Native Americans' expertise – Spanish colonizers concluded that native diseases should be cured by native medicines, and later medical practitioners called "Eclectics" adopted non-traditional herbal treatments. Traveling snake-oil salesmen, both Caucasian and Native American, often found that attributing their products to Indian medicine men resulted in brisk sales (Erichsen-Brown 1979). Many North American herbs were admitted, for varying lengths of time, to the U. S. Pharmacopeias, the official lists of medications (Weiner 1972).

Despite this admiration, *Gerard's Herbal*, a 17th century volume of Old World herb-lore (Gerard 1994), continued to be the reference of choice in the New World, and colonists grew the familiar European herbs in their gardens. A Toronto medical school that offered a course in the "*Materia Medica*" in the 1830's, used *Gerard's Herbal* as its text and rarely considered native herbs (Erichsen-Brown 1979). Much plant lore went unrecorded by early European explorers, and because Indian healers considered their lore to be sacred, some did not share it readily with the settlers.

Depending on the plant, the edible, medicinal or otherwise useful part might be the root, rhizome, tuber, outer or inner bark, twig, leaf, bud, flower, fruit or seed. These were used fresh or dried, whole, ground or pounded, steeped in hot water or cold, boiled or roasted. Plants were eaten, drunk as teas, applied as poultices and eye washes, steeped in baths, inhaled as smoke, and even injected as tattoos. They treated bruises, fevers, heart ailments, toothaches, ulcers, wounds, restless babies, and a myriad of other complaints. Some plants were believed to have a narrow window of time during which they were considered at peak potency, and herbaceous species had to be gathered and stored properly for winter use. Many medicinal treatments consisted of precise mixtures of five or more different herbs.

The difference between food, medicine and poison being, as one author states, a matter of dosage, how did early peoples decide what to use and how to use it? There were undoubtedly many arcs in the learning curve. Many of the North American plants that the first humans encountered on this continent have close relatives in Europe and eastern Asia, so the nomadic hunter-gatherers, and later the settlers and explorers, surely brought with them some familiarity with useful species. Trial and error must have played a role in the adoption of unfamiliar plants. The "Doctrine of Signature", or "like cures like," was a rule of thumb apparently followed by ancient peoples worldwide for divining the use of a plant (Werner 1988). Heart-shaped leaves treated heart problems; succulents became diuretics; plants with spotted bark were indicated for skin ailments; etc. The suggestion of one otherwise reputable outdoor writer that we can sit quietly next to a plant and

allow its “vibes” to inform us of its safety and use is one that our forefathers would have given the horse laugh it so richly deserves (Brown 1985). Finally, “zoopharmacognasy” – observing the way plants are used by animals – was an important and valid source of information.

Were any of these plants actually medically useful? Between one-quarter and one-half of all of our medicines are, or once were, derived from plant compounds. Over 100 active compounds have been identified in yarrow (*Achillea millefolium*) alone (Foster and Duke 1990). The observation by Pliny the Elder, a Greek naturalist in the first century A.D., that “figs do not putrefy at all that are wrapped in the leaves of the mullein” can be explained by a variety of chemicals now known to exist in mullein leaves (Werner 1988). Claims persist that, photosensitivity issues notwithstanding, St. Johnswort (*Hypericum perforatum*), is almost as effective as prescription antidepressants, and research indicates that the plant has antibiotic and possible anti-retroviral potential. Chemical derivatives such as *podophyllin*, extracted from the May-apple (*Podophyllum peltatum*), have a long history of use and continue to be used in main-stream medicine today, while others, like periwinkles (*Vinca* sp.) and clovers (*Trifolium* sp.) show new applications in the treatment of 21st century diseases including a variety of cancers (Foster and Duke 1990).

Despite the role of plants in the development of modern medicines, by most estimates fewer than 20% of the world’s vascular plants have been analyzed for their medicinal potential, and many of those were screened for their efficacy against only one disease (Kindscher 1992). There is continuing research into active components that could explain the success of many old herbal remedies (Foster and Duke 1990). Kindscher’s 1992 *Medicinal Wild Plants of the Prairie* and Foster and Dukes’ 1990 *Field Guide to Medicinal Plants* report on historic uses and on some of the recent research into these old treatments. As Constantine Rafinesque, a North American botanist-explorer, wrote 175 years ago, “Plants are compound medicines prepared by the hands of Nature” (Erichsen-Brown 1979).

While contemporary research has proven some claims to efficacy, it has refuted many others. The root of sassafras (*Sassafras albidum*), once widely used as a medicine, a beverage, and a flavoring for “root beers,” is now considered mildly carcinogenic (though not, as one author wryly observes, as carcinogenic as the ethanol in a comparably-sized can of beer) (Foster and Duke 1990). Yet, its powdered leaves are still sold as *file* powder for flavoring and thickening Cajun gumbos. Some practitioners held the notion that even if some herbs did no specific good, perhaps they did no harm, either. In the early 1800’s, Dr. Bigelow wrote of goldenrod tea, “the claims of the Solidago to stand as an article of the *Materia Medica* are of a humble, but not despicable kind. We import and consume many foreign drugs which possess no virtue beyond that of being aromatic, pleasant to the taste, gently stimulant, diaphoretic, and carminative. All these properties the Golden Rod seems fully to possess” (Coffey 1993).

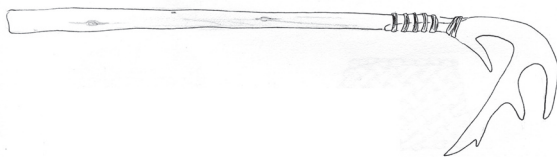
Native Americans and, later, the settlers, faced a dizzying number of diseases, parasites, conditions and accidents running the gamut from merely inconvenient to crippling,



Mohawk 19th Century mortar & pestle used for crushing herbs, corn, sugar, spices and salt.
Drawn from Vidler, 1976.

mystifying, or potentially lethal. The existence of numerous treatments for sore eyes, lung conditions, and intestinal upsets is partly explained by poorly vented cooking and heating fires used by both Natives and settlers and by the lack of refrigeration for food. While some of the solutions of medicine men, frontier doctors and homesteaders may seem simplistic, superstitious, or misguided now, they were doing their best with the knowledge and materials at hand. The important mind-body connection that is being rediscovered today was openly acknowledged by Native American practitioners who employed some plants for their spiritual or symbolic rather than their chemical powers.

Many of the early European settlers were city folks with no experience eking a living from the land. The dark, mature hardwood forests of the New World, with their real and imagined perils, both astonished and terrified them. One of their first challenges was to obtain food; in this they were aided initially by native people who hoped to trade with the newcomers, and the early journals of explorers painted a “travelogue” portrait of the new land. The Woodland tribes did practice agriculture, planting seeds in water-conserving mounds and maintaining, by tree trimming and girdling, the openings required by sun-loving berries and crops. In 1619, Samuel Champlain wrote that “The soil is good and the savages grow a great deal of Indian corn... Sunflowers they grow for their seeds, from which they extract an oil used in anointing their heads. They also grow grapes and plums, raspberries, strawberries, crabapples and nuts... These lakes, as well as the river which flows from one to the other, abound in fish, and the whole country is very beautiful and attractive... The vines and walnuts are very plentiful” (Erichsen-Brown 1979).



Ashwood and antler rake for gardening.
Drawn from Taylor, 1992

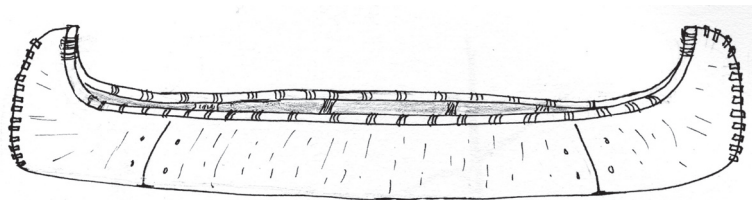
Several of the species included in this account are non-native plants that have been introduced to North America. Understandably, the settlers imported, for food, medicine, or decoration, the familiar plants of their homelands, and many other Eurasian plants arrived as contaminants in bags of agricultural seeds. Whether intentionally or accidentally introduced, these plants spread rapidly, and Native Americans noticed and adopted their traditional European uses. Research into the status of yarrow (*Achillea millefolium*), self-heal (*Prunella vulgaris*), and common nettle (*Urtica dioica*), frequently listed as alien plants, suggests that the subspecies introduced from Europe joined populations of nearly identical North American subspecies (Eastman 2003).

My interest lies more in the historic perceptions about plants than in active chemical components and rates of cure. Readers who are interested in actually “browsing the Bog” are cautioned that identification of species in some older volumes is casual at best; that pinpointing the exact identities of plants mentioned in accounts that sometimes pre-date Linnaeus’ renovation of the classification system requires dedicated detective work; that common names may be shared by totally unrelated plants; and that although accounts of many plants have passed verbatim from author to author for centuries, some plants listed as edible in one reference may be labeled toxic in another. The terms “root,”

“rhizome,” “tuber” and “corm” are often used interchangeably by early collectors. Because the language of medicine has changed in the last 300 years, it can be difficult to figure out exactly which ailment a medicinal plant treated. Accounts from the Victorian era (a transition period between the herbal formulations and primitive practices of the frontier and the modern medical procedures and megalith drug companies of today) contain cures for “derangement of the digestive tract”, “toxic sludge of the stomach”, “torpid liver”, “borborygm”, and “depression due to sexual overindulgence,” all of which they seem to have found troublesome (Clymer 1905).

What follows is history, not “how-to”. It is a slightly unscientific look at the flora of the Bog and at some of the wetland and upland plants early residents might have wanted in their shopping carts. This account is neither a field guide nor a cookbook nor a medical reference. Anyone interested in becoming a serious “browser” will need a great deal more information than is included here. Newcomers to the practice of using wild plants for food or medicine would do well to adopt the credo of mushroom hunters that “there are old mushroom hunters, and there are bold mushroom hunters, but there are no old, bold mushroom hunters.”

The species included here contributed food, medicine, construction material, pigments, and more to the daily lives of early Americans. The format is standardized in order to make the accounts easier to reference. An “equals” sign (=) is shorthand for a variety of verbs such as “was prescribed for,” “was used for,” “was made into,” “was taken to” or “treated”. There are many ways to arrange an account like this; we have chosen to divide plants into groups based on “growth form” (trees, shrubs and vines, herbs, and non-flowering plants) and to list species alphabetically, by scientific name, within these divisions. While common names do not indicate taxonomic relationships, they provide glimpses into the rich history and folklore of plants, and many old names are included here. Finally, the word “Bog” in “Browsing the Bog” is used in an inclusive sense, and the species list contains upland plants that are found on the islands and in the nearby beech woods. Nomenclature is based on the *Checklist of the Vascular Plants of Wisconsin* (Wetter et al. 2001)



Canoe of the Great Lakes sytle, with high bow and stern. Cedar ribs were covered with birchbark, sewn with tamarack rootlets and caulked with spruce gum. Drawn from Maxwell, 1978.

Table 1. Index and summary of plants included in this report. Med., used as a medicine.

Genus / species	Pg.	Common Name	Parts used	Used for
Trees				
<i>Acer saccharum</i>	12	Sugar Maple	Inner bark, wood, twig, sap, seed, seedling	Med., food, drink, dye, construction, fuel
<i>Amelanchier arborea</i>	12	Service-berry	Root, bark, leaf, fruit	Med., food
<i>Betula alleghaniensis</i>	12	Yellow Birch	Root, bark, saplings, twig, sap	Med., drink, flavoring, construction
<i>Betula papyrifera</i>	13	Paper Birch	Root, bark, twig, leaf, sap	Med., drink, dye, flavoring, construction, charm, art
<i>Carya ovata</i>	13	Shagbark Hickory	Wood, bark, shoots, sap, nut, husk	Med., food, drink, oil, dye, construction, fishing, grooming
<i>Fagus grandifolia</i>	14	American Beech	Bark, wood, leaf, bud, sap, nut	Med., food, drink, oil, construction, bedding, fuel
<i>Fraxinus americana</i>	14	White Ash	Bark, wood, branch, twig, leaf, bud, seed, sap	Med., drink, smoke, dye, construction, charm
<i>Larix laricina</i>	15	Tamarack	Root, bark, shoot, leaf, seed, sap	Med., food, drink, fiber, construction, firewood
<i>Ostrya virginiana</i>	16	Ironwood	Heartwood, wood	Med., construction
<i>Populus deltoides</i>	16	Cottonwood	Inner bark, wood, trunk, sprout, leaf, bud, fluff	Med., food, dye, construction, paper
<i>Prunus serotina</i>	16	Black cherry	Root, bark, twig, fruit	Med., food, drink, flavoring, construction

<i>Quercus alba</i>	17	White Oak	Root, wood, bark, twig, leaf, nut	Med., food, drink, construction
<i>Quercus rubra</i>	17	Red Oak	Bark, nut, galls	Med., food, dye, construction, tanning
<i>Thuja occidentalis</i>	18	N. White Cedar	Root, wood, bough, bark, charcoal, leaf, smoke	Med., food, construction, smoke, tattoos, bedding
<i>Tilia americana</i>	18	Basswood	Bark, sprout, twig, leaf, bud, flower, sap	Med., food, drink, fiber, construction
<i>Ulmus americana</i>	19	American Elm	Root, bark, inner bark	Med., fiber, cooking, construction
<i>Ulmus rubra</i>	19	Slippery Elm	Root, bark, inner bark	Med., food, fiber, recreation

Shrubs and Vines

<i>Alnus incana</i>	20	Speckled Alder	Bark, trunk, leaf	Med., dye, construction
<i>Celastrus scandens</i>	20	American Bittersweet	Root, inner root bark, stalk, leaf, fruit	Med., food
<i>Cornus stolonifera</i>	21	Red Osier Dogwood	Bark, branch	Med., smoke, dye, construction
<i>Dirca palustris</i>	21	Leatherwood	Root, wood, stalk, bark	Med., fiber
<i>Ilex verticillata</i>	22	Winterberry	Bark, leaf, fruit	Med., drink
<i>Parthenocissus quinquefolia</i>	22	Virginia Creeper	Root, plant, stem, leaf	Med., food
<i>Rhamnus cathartica</i>	22	Common Buckthorn	Wood, inner bark, fruit	Med., dye
<i>Rhamnus frangula</i>	22	Glossy Buckthorn	Wood, inner bark, fruit, juice	Med., dye, paint pigment, charcoal
<i>Rhus hirta</i>	23	Staghorn Sumac	Root, trunk, bark, sap, leaf, flower, fruit	Med., food, drink, dye, smoke, music, tanning

Genus / species	Pg.	Common Name	Parts used	Used for
<i>Ribes</i> spp.	23	Currants / Gooseberries	Root, bark, fruit	Med., food, drink
<i>Rosa palustris</i>	24	Swamp Rose	Root, bark, flower, fruit hips	Med., food
<i>Rubus occidentalis</i>	24	Black Raspberry	Root, leaf, shoot, fruit	Med., food, drink, flavoring
<i>Salix</i> spp.	24	Willow	Root, bark, twig, leaf, buds, catkins	Med., smoke, dye, fiber, construction
<i>Toxicodendron vernix</i>	25	Poison Sumac	Root, sap	Med., dye, varnish, warfare
<i>Vaccinium macrocarpon</i>	25	Large Cranberry	Branch, leaf, fruit	Med., food, drink, smoke
<i>Vaccinium</i> spp.	26	Blueberry	Root, leaf, fruit	Med., food, tanning
<i>Viburnum</i> spp.	26	Viburnums	Bark, inner bark, stem, fruit	Med., food, smoke, toy
<i>Vitis</i> spp.	27	Wild Grape	Root, sap, leaf, fruit	Med., food, drink
<i>Zanthoxylum americanum</i>	27	Prickly-Ash	Root, bark, leaf, fruit	Med., food, dye

Herbaceous Dicotyledons

<i>Achillea millefolium</i>	28	Common Yarrow	Entire flowering plant	Med., dye, pesticide, charm
<i>Actaea pachypoda</i>	28	White Baneberry	Root, leaf	Med.
<i>Amphicarpa bracteata</i>	29	Hog Peanut	Seed	Food
<i>Anemone acutiloba / americana</i>	29	Hepatica	Root, leaf	Med., dye, charm
<i>Apios americana</i>	29	Ground Nut	Root, tuber, seed	Med., food
<i>Aquilegia canadensis</i>	30	Wild Columbine	Rhizome, plant, flower, seed	Med., food, smoke, charm
<i>Aralia nudicaulis</i>	30	Wild Sarsaparilla	Root, leaf, seed	Med., food, drink, fishing
<i>Asclepias incarnata</i>	30	Swamp Milkweed	Root, stem fiber, leaf, flower, pod, silk	Med., food, fiber
<i>Aster novae-angliae</i>	31	New England Aster	Root, plant	Med., food, hunting
<i>Bidens</i> spp.	31	Beggars' Ticks	Root, leaf, juice, seed	Med., dye, charm

<i>Caltha palustris</i>	32	Marsh Marigold	Root, leaf, leaf juice, flower	Med., food, dye
<i>Caulophyllum thalictroides</i>	32	Blue Cohosh	Root, seed	Med., drink
<i>Chenopodium album</i>	32	Lamb's Quarters	Plant, leaf, seed, oil	Med., food
<i>Cicuta maculata</i>	33	Water Hemlock	Root, seed	Med., smoke, charm
<i>Coptis trifolia</i>	33	Gold-thread	Root, leaf, stalk	Med., dye
<i>Daucus carota</i>	34	Queen Anne's-lace	Root, flower, leaf, seed, oil	Med., food, drink, dye
<i>Drosera rotundifolia</i>	34	Round-leaved Sundew	Plant, juice	Med., food preparation
<i>Erigeron philadelphicus</i>	34	Daisy Fleabane	Plant, plant oil, flower	Med., hunting, pesticide
<i>Eupatorium maculatum</i>	35	Joe-Pye Weed	Root, leaf, flower	Med., charm
<i>Eupatorium perfoliatum</i>	35	Boneset	Root, plant, leaf, flower	Med.
<i>Eupatorium rugosum</i>	36	White Snakeroot	Root, leaf, plant	Med.
<i>Fragaria virginiana</i>	36	Wild Strawberry	Root, leaf, fruit	Med., food, drink
<i>Galium aparine</i>	37	Annual Bedstraw	Root, plant, leaf, seed	Med., food, drink, food preparation, dye, bedding
<i>Geranium maculatum</i>	37	Wild Geranium	Rhizome	Med.
<i>Impatiens capensis</i>	37	Orange Jewelweed	Whole plant, plant juice, young shoot, leaf, seed	Med., food, dye
<i>Lobelia siphilitica</i>	38	Great Lobelia	Root, leaf	Med., charm
<i>Lycopus</i> spp.	38	Water Horehound	Root, plant	Med., food, dye
<i>Mentha arvensis</i>	38	Wild or Field Mint	Plant, leaf	Med., food, drink, flavoring, trapping
<i>Menyanthes trifoliata</i>	39	Bogbean, Buckbean	Root, leaf	Med., drink
<i>Monarda fistulosa</i>	39	Wild Bergemot	Root, leaf, flower, oil	Med., food, drink, grooming
<i>Nuphar variegata</i>	40	Bullhead or Pond Lily	Rhizome, seed	Med., food
<i>Oenothera biennis</i>	40	Evening-Primrose	Root, plant, shoot, leaf, flower, seed	Med., food

Genus / species	Pg.	Common Name	Parts used	Used for
<i>Plantago major</i>	40	Common Plantain	Root, leaf, seed	Med., food, drink, charm
<i>Podophyllum peltatum</i>	41	May-apple	Rhizome, plant, fruit	Med., food, pesticide
<i>Sanguinaria canadensis</i>	42	Bloodroot	Plant, rhizome, juice	Med., dye
<i>Sarracenia purpurea</i>	42	Pitcher plant	Root, leaf	Med., art, toy, container, charm
<i>Solanum dulcamara</i>	43	Bittersweet Nightshade	Leaf	Med.
<i>Solidago canadensis</i>	43	Canada Goldenrod	Root, leaf, flower	Med., flavoring, dye
<i>Taraxacum officinale</i>	43	Dandelion	Root, leaf, flower, sap	Med., food, drink,
<i>Urtica dioica</i>	44	Stinging Nettle	Root, stem, stem fiber, shoot, leaf, seed	Med., food, dye, fiber
<i>Verbascum densiflorum</i>	45	Mullein	Leaf, flower, seed, oil	Med., smoke, dye, insulation, fishing
<i>Viola</i> spp.	45	Violets	Root, plant, leaf, flower	Med., food, drink, charm

Herbaceous Monocotyledons

<i>Alisma subcordatum</i>	46	Water Plantain	Root, leaf, seed, young plant	Med., food
<i>Allium tricoccum</i>	46	Wild Leek	Bulb	Med., food
<i>Arisema triphyllum</i>	46	Jack-in-the-Pulpit	Corn, fruit, seed	Med., food, pesticide, laundry
<i>Cypripedium parviflorum</i>	47	Small Yellow Lady's-slipper	Root	Med.
<i>Iris versicolor</i>	48	Northern Blue Flag	Root, lead	Med., dye, fiber
<i>Phragmites australis</i>	48	Common Reed Grass	Rootstalk, shoot, stalk, sap, fiber, seed	Food, fiber, arrows, smoke, construction, insulation
<i>Polygonatum pubescens</i>	48	Solomon's Seal	Rhizome, shoot	Med., food
<i>Sagittaria latifolia</i>	49	Arrowhead	Rhizome, tuber, leaf	Med., food
<i>Symplocarpus foetidus</i>	49	Skunk cabbage	Rhizome, root hair, leaf	Med., food, flavoring

<i>Trillium grandiflorum</i>	50	Common Trillium	Rhizome, young leaf	Med., food
<i>Typha latifolia</i>	50	Broad-Leaved Cattail	Rhizome, shoot, leaf, flower heads, pollen, seed, fluff	Med., food, bedding, construction, toys
<i>Zizania aquatica</i>	51	Wild Rice	Seed	Food

Non-Flowering Plants

<i>Adiantum pedatum</i>	52	Maidenhair Fern	Plant, stem, leaf	Med., shampoo, fiber
<i>Botrychium virginianum</i>	52	Rattlesnake Fern	Root	Med., charm
<i>Equisetum arvense</i> / <i>fluviatile</i>	51	Field and Water Horsetails	Root, plant, stalk	Med., food, fodder, polishing, toy, music
<i>Osmunda</i> spp.	52	Royal Ferns	Bulb, root, fiddlehead, juice	Med., food, horticulture
<i>Sphagnum</i> spp.	53	Sphagnum moss	Plant	Med., bedding, insulation, absorbant

SPECIES ACCOUNTS

Trees

Sugar or Hard Maple (*Acer saccharum*) Aceraceae - Maple Family

Parts used: Inner bark, wood, twig, sap, seed, seedling

Medicine: Inner bark = cough syrup, expectorant, diarrhea treatment, one of eight ingredients in a general “internal medicine” made by the Mesquakie.

Food: The inner bark of sugar maples and related species was dried and ground into a flour for breads. Sap = spring tonic, a beverage drunk straight out of the tree or mixed with water, used to reconstitute dried foods. Before Europeans brought iron cooking pots, sap was reduced to syrup and sugar by dropping hot rocks into birch bark or elm bark vessels full of sap. Maple sap, syrup, and sugar were used as seasonings instead of salt. The Ojibwe cooked venison in a vinegar made from maple sap. Boiled maple seeds and fresh or dried seedlings = food.

Other uses: Maple twigs = ingredient in a black dye. Wood = fuel, building materials, sled runners, and ladles and spoons used in making syrup and sugar. Potawatomi trappers rinsed traps in a bark solution of red maple (*A. rubrum*) to remove the scent of humans and of animals trapped previously.

Lore: The sugar maple was sacred to the Iroquois, who marked the annual rising of its sap and the renewed survival covenant for the coming year with an early spring thanksgiving ceremony. Many tribes used maple syrup and sugar as trade items.

Shadbush, June or Service Berry (*Amelanchier arborea*) Rosaceae - Rose Family

Parts used: Root, bark, leaf, fruit

Medicine: Fruit = post-partum pain, hemorrhage. Root = cramps, worms, childbirth and to prevent miscarriage. Root and fruit decoction mixed with other roots = dysentery. Grated root = poultice on sore eyes. Astringent tea of leaves and bark = a bath for children with worms.

Food: Fruit = eaten fresh, processed into a pulp, used in breads, mixed with cornmeal, or pounded with dried meat to make pemmican. Lewis and Clark wrote about a berry, probably June-berry, which was pounded into a loaf that weighed ten to fifteen pounds. Pieces of the loaf could be broken off and used as needed or cooked in stews. Dried fruit was reconstituted in maple sap, maple syrup, or water.

Lore: The fruit was so important to the Native Americans that “Take some June berry with you.” was an Ojibwe farewell.

Yellow or Swamp Birch (*Betula alleghaniensis*) Betulaceae - Birch Family

Parts used: Root, bark, sapling, twig, sap

Medicine: Inner bark mixed with inner bark of sugar maple (*Acer saccharum*) = diuretic. Bark decoction = blood diseases.

Food: Roots = “birch beer.” Sap added to sap of sugar maple (*Acer saccharum*) = beverage.

Other uses: Saplings = strong, flexible frames for bark-covered dwellings.

Chemistry: The twigs contain a chemical *ester* similar in odor and flavor to wintergreen (*Gautheria procumbens*) and were used as a substitute wintergreen flavor. Considered antiseptic and astringent.

White or Paper Birch (*Betula papyrifera*) Betulaceae - Birch Family

Parts used: Root, bark, twig, leaf, sap

Medicine: Root = stomach upset. Tea of twig and young leaf = mild sedative and diuretic internally; externally = a wash on skin rashes and acne. Scraped inner bark = consumption. Pounded, boiled bark = poultice on wounds and cuts. Curved edge of bark = surgical instrument for cataract removal by 19th century Canadian Indians. Aromatic root = flavoring for medicine. Burned bark = fumigate dwellings after outbreaks of illness.

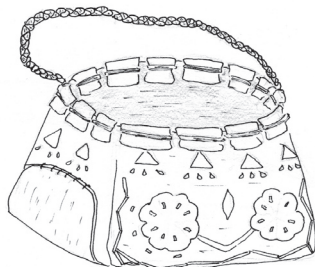
Food: Wintergreen-flavored root = flavoring for “birch beer.” Sap = a sweetener and a beverage, sometimes boiled into syrup by northern tribes. Steeped birch twigs = a beverage tea.

Other uses: Wood = utensils, bows, arrow shafts, and snowshoes. Light, waterproof bark = decay-proof containers which could be stored underground, mats to cover wigwams, torches, drawing “paper” and ritual scrolls, reliable tinder, splints for fractured bones, coffins for above-ground burials (bedrock is very close to the surface in many parts of the paper birch’s growing range), and it could be split into threads and used as twine. According to an eyewitness in 1624, Huron women germinated pumpkin seeds in birch bark boxes that they suspended over a smoking fire. Strips of bark wrapped around the head helped to protect the eyes from snow blindness. Canoes were covered by large pieces of birch bark stretched over a frame of cedar (*Thuja occidentalis*), sewn together with rootlets of spruce (*Picea* spp.) or tamarack (*Larix laricina*), and caulked with spruce pitch. Inner bark in combination with other plants = a red dye. A unique art form practiced by some northern tribes involved creating designs on the inner bark by biting it.

Lore: Some Ojibwe hung thin strips of birch bark from the sides of their dwellings to frighten away the souls of recently deceased people; the white birch is sacred to the Ojibwe because of its association with teacher/deity/trickster Waynabozho.

Chemistry: Birch leaves, twigs and buds contain the aspirin precursor *methyl salicylate*, and the bark contains *betulinic acid*, considered anticancer and antifungal.

Other names: Canoe Birch



Birchbark makuk or basket, sewed with basswood fiber. Drawn from Greene, 1993

Shagbark or Shellbark Hickory (*Carya ovata*) Juglandaceae - Walnut Family

Parts used: Wood, bark, shoot, sap, nut, fruit, husk

Medicine: Small shoots were burned and the smoke inhaled by Ojibwe = headache and convulsions. Bark applied directly = headache, toothache, or joint stiffness.

This treatment was reported to cause a sensation of heat and even to “burn the skin in a short time,” bringing relief by “driving the pain from one part of the body to another, until there is an eruption somewhere” (Erichsen-Brown 1979). Husk of the green fruit = rubbed on ringworm. Hickory bark, finely pounded and boiled “to the consistency of strong lye” = a powerful styptic. Hickory oil = expel worms.

Food: Ground hickory nuts = baked into small cakes combined with cornmeal. Oil from the nut = seasoning. Pounded, finely powdered nut mixed with water = a refreshing beverage. Tapped shagbark hickories produced a small amount of sap that reportedly made an excellent syrup and sugar, and acorn soups were sweetened by hickory sap.

Other uses: Hickory oil from the nut = a hair dressing; oil mixed with bear grease = a mosquito repellant and sun block. Crushed, green husks were thrown into ponds to stun fish for food. Hickory wood = bows by Native Americans, and a variety of woodworking purposes by the settlers. The husk = yellow and brown dyes.

Other names: White Walnut

American Beech, Beechnut (*Fagus grandifolia*) Fagaceae - Beech Family

Parts used: Bark, wood, leaf, bud, sap, nut

Medicine: A bark tea = lung ailments; a tea of leaves and bark = stomach ulcers, pulmonary disorders, diabetes, and urinary tract problems. Native Americans chewed beech leaves to expel worms. A leaf tea = wash for burns, frostbite, and poison ivy, and a bark tea = wash for poison ivy and other skin rashes.

Food: Beechnuts = a high-protein food (22%) eaten fresh, ground into a meal, or cooked. High quality oil was pressed from the nut. Roasted, crushed nuts = a coffee substitute; young leaves and buds = eaten; ground inner bark = a flour for bread; and the sweet sap = tapped in spring and drunk like water.

Other uses: Early settlers in Ontario filled mattresses with dried beech leaves, reputed to be more springy than straw. Beech wood = a clean-burning fuel.

Modern: Sometimes used for furniture, wood labeled “bent maple” is often beech wood.

White Ash (*Fraxinus americana*) Oleaceae - Olive Family

Parts used: Bark, wood, branch, twig, leaf, bud, seed, sap

Medicine: Inner bark tea = an emetic, diuretic, strong laxative, astringent, a tonic after childbirth, for stomach cramps, constipation, gout, hemorrhage, fever and ague. A liquid expressed from the heartwood by heating = earache; mixed with goldthread (*Coptis trifolia*) = deafness. Soaked inner bark = a wash on eczema, itching skin, head lice, and sore eyes. Inner bark, chewed, = poultice for sores. The Huron boiled the bark of ash trees with barks of several other tree species = medicine to wash the body of a smallpox victim.

Food: Ash sap = a beverage that was, reputedly, delicious.

Other uses: The tips of ash twigs = tobacco substitute. Ash wood = prized for snowshoe frames, sleds, bows, arrows, spears, pipe stems, cradle boards, wagon parts, agricultural implements, and later, baseball bats. Black ash (*F. nigra*) wood = excellent for basketry, bows, and arrows; black ash bark = an Ojibwe dye plant, and large sheets of its bark covered Ojibwe dwellings.

Lore: The ash tree has figured in European folklore for millennia as a snake repellent and as a treatment for snake bites. A comment by Roman naturalist Pliny the Elder in the first century AD that “It is a wonderful courtesy of nature that the ash should flower before the serpents appear, and not cast his leaves before they are gone again” was echoed 1,500 years later by a French missionary in Quebec who noted that “one never finds serpents in the swamps where this tree abounds” (Eastman 1995). Scottish mothers fed their infants ash sap to make them immune to snakes and used ash wood as crib runners in the belief that snakes wouldn’t cross them. Native Americans put ash leaves and twigs around their dwellings in a similar belief. Native Americans and settlers stuffed ash leaves into their leggings to repel rattlesnakes and prevent snakebite. A decoction of buds or bark was considered a remedy for both hydrophobia and rattlesnake bites (a nutritious broth of the rattlesnake itself was taken as a treatment for consumption). The branches were said to repel lightning and the seeds to prevent obesity; the seeds were considered an aphrodisiac.

Chemistry: A glycoside called *fraxoside*, extracted from the bark, contains *coumarin* which, made into *warfarin*, is an anticoagulant used to treat some heart conditions and as an ingredient in some rat poisons.

Tamarack, Larch (*Larix laricina*)

Pinaceae Pine Family

Parts used: Root, bark, shoot, leaf, seed, sap

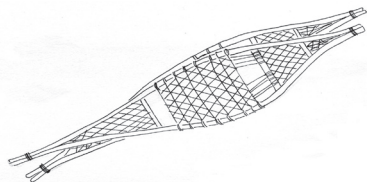
Medicine: Astringent teas of tamarack bark or needles = laxative, tonic, diuretic, expectorant, for jaundice, rheumatism, bronchitis, anemia, intestinal complaints, skin ailments, and sore throats. Bark tea = to “drive out inflammation and generate heat.” Leaf tea = stomach, lung and menstrual problems. Leaf tea added to a bath = inflamed joints; the astringent, fresh leaves = poultice on burns. Bark = poultice on headache, burns, bruises and wounds, and steeped tamarack bark = distemper in horses. Dried leaves = an inhalant, a fumigant, and a sweat producing agent for colds and coughs. Tamarack gum or sap, chewed = indigestion, kidney and liver ailments, and the sap = externally for skin problems.

Food: The brewed leaves = beverage tea. Tender, new shoots = eaten, and the oil-rich seeds and the inner bark = an emergency survival food. Tamarack sap is reported to taste sweet.

Other uses: Tamarack gum = caulk for canoe seams. Rootlet = thread for sewing the edges of canoes and fiber for making woven bags. Tamarack wood = toboggans, drums, snowshoes, and paddles and fuel used at maple sugaring time for its especially hot temperatures.

Modern: Tamarack fiber is the source of the transparent “window” in some window envelopes.

Caution: Over-consumption of the needles, bark, or resin is toxic to the kidneys. Tamarack sawdust is a skin irritant for some people.



Ojibwe snowshoes with birch, ash or tamarack frames.

Drawn from Osinski, 1987

Cottonwood (*Populus deltoides*) Salicaceae - Willow Family

Parts used: Inner bark, wood, trunk, sprout, leaf, bud, fluff on seed

Medicine: Cooked buds = syrup for colds, lung and heart conditions, and sprains; buds mixed with bear fat = earache, bronchitis, and cough. An inner bark tea = tonic, sedative, vermifuge, for childbirth, heartburn, fever, diarrhea, rheumatism, dyspepsia, and scurvy. Inner bark tea, externally = astringent, especially in the event of an amputation. The Ojibwe lined splints with the inner bark so that the limb could heal cleanly. Cottonwood bark = poultices on wounds. Seed fluff = absorbent on open eyes or wounds. Cottonwood buds, soaked and mixed with beeswax = salve for sores, colds, sore nostrils.

Food: Sprouts, buds and seeds = food. Sweet, mucilaginous inner bark = cooked in soups or eaten raw - "In flavour it was not unlike the turnip".

Other uses: Large trunks were laboriously hollowed out for canoes. Fluff on seeds = paper and cloth. Buds = yellow dye. Settlers built barns and houses from the soft, abundant, wood.

Lore: The idea for the shape of the tepee is supposed to have come from a cottonwood leaf rolled into a cone.

Chemistry: Like willows, its bark contains the aspirin precursor *salicin*; like willows, a brew of the bark alone tastes so bitter that a less potent leaf tea was sometimes added or substituted. Cottonwood leaves contain 20% to 30% protein and are high in *amino acids*; their potential for food for humans and livestock is being explored.

Ironwood (*Ostrya virginiana*) Betulaceae - Birch Family

Parts used: Heartwood, wood

Medicine: A distillation of the heartwood = ague, intermittent fever, scrofula, dyspepsia, and kidney pain; mixed with other ingredients for rheumatism, coughs and lung ailments.

Other uses: For Native Americans, wood = bows and frames for dwellings; for pioneers, wood = tool handles, rakes, levers, sled runners, dishes, cog wheels, and wagon gear. As its common names indicate, the wood is hard and very difficult to work with, but the finished products are almost indestructible. Most items that used to be made with ironwood are now made of metal.

Other names: Leverwood, Indian Cedar, Black Hazel, Hard Hack



Woodland Indians war club.
Drawn from Maxwell, 1978

Wild Black Cherry (*Prunus serotina*) Rosaceae - Rose Family

Parts used: Root, bark, inner bark, twig, fruit

Medicine: A tea or syrup of Wild cherry's inner bark, gathered in fall = coughs, fevers, colds, diarrhea, lung ailments, pneumonia, dyspepsia, palpitations, measles, the early stages of consumption, and the pain of childbirth. It was taken as a blood tonic when "the blood seems thick." The root bark = a sedative tea by the Mesquakie. Dried cherries, eaten = diarrhea. Bark and root = gangrenous wounds, cuts, sores, and as a disinfectant wash by the Ojibwe. Pounded bark = poultice on burns and ulcers;

the Ojibwe applied a bandage of bark to the stub of an amputation necessitated by frostbite. Cherry roots in combination with other plants = a wash for smallpox patients. Bark and root = a pioneer treatment of tuberculosis and worms. Cherry was often used medicinally in combination with other plants and as a flavoring; its medical properties are said to be destroyed by boiling. Rafinesque noted that ingesting the bark reduced the pulse from 75 to 50.

Food: The sour cherries (“more medicinal than palatable...little else than stone and skin and very small”) (Erichsen-Brown 1979) = a fresh fruit, a good jelly, or a flavoring for alcohol. Cherries were pounded, pits and all, into dried meat to produce pemmican, and dried cherries were cooked with meat or soup. Wild cherry sap = a pleasant-tasting beverage. The fruit, fermented = a strong liquor called “rumcherry” by Appalachian settlers.

Other uses: Settlers prized the wood for furniture and gunstocks.

Chemistry: Wild cherry’s inner bark was gathered in fall when the concentration of *hydrocyanic acid* was highest to make a tea or *prussic acid* syrup, which quieted bronchial spasms and was mildly sedative.

Caution: The bark, leaves, and seeds contain a glycoside called prunasin which is similar to cyanide; in spite of this, a beverage tea is reported to have been steeped from the twigs.

Other names: Poor Man’s Cherry

White Oak (*Quercus alba*) Fagaceae - Beech Family

Parts used: Root, wood, bark, inner bark, twig, leaf, nut, oil

Medicine: An inner bark tea = fever, dysentery, ulcers, sore throat, congestion in the lungs, and chronic diarrhea. The inner bark, boiled in spring when the tannin concentration is highest = external use as an astringent and an antiseptic. Boiled bark, root, or leaves = a wash for rashes, burns, poison ivy, wounds and sore eyes. It was said that “To cure a broken skin. Bind a dry oak leaf upon it.” (Erichsen-Brown 1979). Acorns = ingredient in medicines for toothache and diarrhea.

Food: The “sweet” acorns of the white oak group = eaten raw or as the primary ingredient in the hard, dry breads made by many Woodland tribes. Acorn meal “mush” made by the Mesquakie was cooked with blueberries and seasoned with maple sugar. Oil was pressed from acorns. Dried, scorched acorns = coffee-like beverage. Some acorns gathered in fall were buried for winter use.

Other uses: The Ojibwe used sharpened oak twigs as sewing awls, and the wood = construction, ship-building, posts, furniture, barrels, and baskets.

Red Oak (*Quercus rubra*) Fagaceae - Beech Family

Parts used: Bark, inner bark, nut, gall

Medicine: The Ojibwe made a powerful heart medicine from exact proportions of the powdered, inner barks of red oak, quaking aspen (*Populus tremuloides*), balsam poplar (*Populus balsamifera*), and Seneca snakeroot (*Polygala senega*). Inner bark teas and mild *tannic* solutions = same symptoms as those made from white oak (*Q. alba*). A bark decoction = blood, heart and lung ailments, and an infusion of root bark = gonorrhea.

Food: Bitter acorns of the red oak group needed to be boiled in several changes of water, with lye made from ashes added to the final water. After this processing they could be prepared like white oak acorns.

Other uses: Red oak wood = war clubs, bowls, paddles, and ceremonial drumsticks; used by settlers mainly for barrel staves. Oak bark and oak galls = tanning leather and producing a reddish-brown dye. Oak galls = ingredient in a black dye or ink and powerful astringents and styptics in their own right.

Northern White Cedar, Arbovitae (*Thuja occidentalis*)

Cupressaceae - Cypress Family

Parts used: Root, wood, bark, bough, leaf, charcoal, oil, smoke

Medicine: Native Americans made a leaf tea = dysentery, cough, fever, scurvy, headache and colds. Leaf tea and oil = a uterine stimulant officially listed as an abortion-causing agent. Cedar charcoal = a sedative and an internal treatment for worms and fever. The charcoal = an antiseptic, internally and externally. Washes and poultices of cedar = externally on swollen feet, burns, warts, piles, bed sores, and fungus infections. Cedar was an ingredient in steam baths for rheumatism. Cedar wood = splints for broken bones. Crushed leaves, mixed with fat and boiled = a salve for rheumatism, aches and pains. A cedar charcoal compound, pushed into the temple with a needle = relief from headache and convulsions. Cedar smoke = cleanse the insides of a longhouse after an occupant had smallpox.

Food: Boiled inner bark and twig = an emergency food.

Other uses: Cedar wood = baskets, armor and helmets, and canoe frames and ribs; the rootlet = thread for sewing. Cradle boards packed with rotten cedar or sphagnum moss (*Sphagnum* spp.) = an absorbent “diaper” material. The bough = springy, temporary bedding. Used with a hardwood “fire stick,” cedar wood was the “hearth,” the base that held the tinder in fire making. Cedar charcoal = permanent tattoos, both decorative and symbolic. Bark = smoked in ceremonial pipes. Settlers used cedar wood = palisades, fences, roof beams, fuel for limekilns, and bought cedar-bough brooms from the Indians.

Lore: White cedar leaves may have been the basis of a vitamin-rich tea shown to Jacques Cartier during his explorations of Canada in 1535. His men were so debilitated by scurvy (mal de terre) that he was afraid the Natives would find out and overthrow them “Within 6 days [of taking cedar tea] the distemper relaxed its hold and health and hope began to revisit the hopeless community” (Naegele 1996). Henry David Thoreau’s recommended blood purifier - “A quart of arbor vitae to make him strong and mighty” – was an unpleasant brew to drink. The cedar was a sacred tree to the Ojibwe. Author John McPhee postulates that the frame of a canoe was fashioned after the thoracic skeleton of vertebrates (Eastman 1995).

Chemistry: Oil extracts have shown antiviral properties.

Caution: Despite its use as a medicinal agent, cedar contains the toxic compound *thujone*.

American Basswood or Linden (*Tilia americana*) Tiliaceae - Linden Family

Parts used: Bark, inner bark, sprout, twig, leaf, bud, flower, sap/tar

Medicine: Native Americans made an inner bark tea = loosen mucous, remedy lung

ailments, hoarseness, epilepsy, heartburn, dysentery, and “weak stomach.” A jelly of the inner bark = consumption. A tea of basswood twigs = lung troubles, and a tea of the flower, leaf, and bud = nervous headache, colds, restlessness, and painful digestion. Basswood flower tea = coughs, epilepsy, and nervous disorders, as a calmative, and to promote perspiration during fever. The tea, drunk hot = diarrhea. Basswood bark and leaves = poultice on burns, scalds, carbuncles, bites, stings, and to draw out boils, and the bark = an emergency bandage. A bark infusion = antiseptic wash for sore eyes. Linden tar = eczema. Blossoms steeped in water = a relaxing, sleep-inducing bath.

Food: Basswood leaves and flowers = a beverage tea substitute (see *Caution*, below). Although its sap is not as high in sugar as that of the sugar maple (*Acer saccharum*), basswood is a potential syrup tree, and the Ojibwe ate a sweet sap scraped from its inner bark. It is an important honey plant. Young flowers, unopened leaf buds, inner bark of young branches, tender tips of twigs and sprouts = food. Rafinesque reported that “the seeds can make a kind of chocolate” (Erichsen-Brown 1979).

Other uses: The wood = durable utensils and bowls. The soft, white inner tree bark and the bark of young twigs = vital sources of cordage, twine, thread, fish nets, mats and baskets.

Chemistry: *Tilleul*, steeped from dried basswood blossoms, is considered a mild sedative that calms hysteria; in a bath, it eases insomnia and cramps.

Caution: Frequent use of the flower tea may cause heart damage.

American or White Elm (*Ulmus americana*) Ulmaceae - Elm Family

Parts used: Root, bark, inner bark, fiber

Medicine: Native Americans steeped and drank elm bark = “bleeding at the lungs,” cramps, diarrhea and gonorrhea. Boiled elm bark = lotion for sore eyes by the Mesquakie.

Other uses: Elm bark was used, bark-side-in, for canoe making where birch did not grow. Elm-bark canoes were heavier and stronger than their birch bark counterparts; they typically held two people and lasted for two years. Small strips of elm bark = caulk for leaky canoes, and the inner bark = fiber for rope. Elm bark = the walls and roofs of some dwellings, a variety of barrels, bowls, and containers, including some that were buried for winter food storage, and cooking vessels that would keep their shape over a fire until the meat was cooked. The Huron made elm bark into two-gallon buckets to catch maple sap, four-gallon containers to haul sap to be boiled, and hundred-gallon vats to store sap awaiting boiling. They also made broad, shallow sap containers in which sap could freeze on several consecutive nights – each morning the ice was removed until the remaining liquid was dark and sweet.

Slippery Elm (*Ulmus rubra*)

Ulmaceae - Elm Family

Parts used: Root, bark, inner bark, inner bark fiber

Medicine: The Ojibwe prescribed an inner bark tea for sore throats. Bark teas made by soaking the “slimy” inner bark in water = indigestion, urinary



Dwelling covered with elm bark.
Redrawn from Wilbur, 1996.

tract complaints, stomach ulcers, coughs, pleurisy, diarrhea and dysentery, and as childbirth aids. Roots = a wash for sore feet, and a thick tea of the inner bark = externally on wounds, swelling, ulcers, burns, chilblains, scalds, and inflammation. One enthusiast wrote that there was “nothing within the bounds of medical knowledge equal to Elm bark.”

Food: The dried inner bark, ground = a nutritious flour, or brewed = a “wholesome tea” or broth for children, the elderly, and convalescents. A piece of inner bark = chewed to relieve thirst.

Other uses: Slabs of slippery elm bark = snow sleds for Ojibwe children. Elm bark was harvested in spring. Elm bark fiber = strong laces and ropes. Slippery elm bark fibers have been identified in fabrics found in Hopewell archaeological sites dating back over 2,000 years.

Lore: Slippery elm bark and the cut wood reportedly smell like licorice, but the colonial nickname “Piss elm” suggests that not everyone agreed with that description (Harris 2003).

Modern: Slippery elm lozenges for sore throats and coughs may still be purchased.

Shrubs and vines

Speckled or Swamp Alder (*Alnus incana*) Betulaceae - Birch Family

Parts used: Wood, bark, inner bark, leaf, cone

Medicine: Alder bark tea = nausea, cramps, fever, sore throat, toothache, syphilitic sores and diarrhea by Native Americans. During a difficult labor, a woman was given a mixture of the inner barks of alder and arrow-wood (*Viburnum acerifolium*) plus a pinch of powdered bumblebee. The chewed or boiled bark = externally for skin wounds, cuts, swelling and inflammation, and the inner bark externally = skin diseases, poison ivy, rashes, and saddle sores on horses. Dried, powdered bark steeped in water = eye infections. Chopped leaves = poultice to stop lactation.

Other uses: Alder wood = fence posts, water pipes and troughs. The bark = a dark brown dye; the cones = a black dye.

American Bittersweet (*Celastrus scandens*) Celastraceae - Bittersweet Family

Parts used: Root, inner root bark, stalk, leaf, fruit

Medicine: The root = a mild narcotic, diuretic, diaphoretic; root tea = a physic for babies, to induce vomiting, to quiet disturbed people. The inner root bark = liver, general weakness, skin problems, anemia, childbirth, venereal disease, TB, rheumatism, swelling, ulcers, and syphilis; it “increases all the secretions and excretions, particularly perspiration.” (Erichsen-Brown 1979). Leaf tea = diarrhea and dysentery. Fruit = stomach pain. The stalk = taken both internally and washed externally for skin eruptions. Boiled root = an ointment for cancerous/obstinate sores; bark simmered with grease = an ointment for burns, swellings, skin cancers, and tumors.

Food: The boiled bark of the tender stalk = food by the Ojibwe; the inner bark was reportedly cooked and eaten as a famine food for some tribes though, as one explorer later wrote, “we become thirstier and drier than the woods we ate.”

Lore: The Ojibwe name for bittersweet means “Waynabozho’s [the trickster diety’s] intestines.”

Caution: The root and bark contain the toxic substance *celastrin*. The fruit is poisonous.

Other names: Fever Twig, Waxwort, Redroot

Red Osier Dogwood, Kinnikinnick (*Cornus stolonifera*)

Cornaceae - Dogwood Family

Parts used: Bark, inner bark, branch

Medicine: Bark tea = sore throats, coughs, colds, fevers, piles, dysentery, and diarrhea.

The bark was a *quinine* substitute. A bark tea = external wash on sore eyes, rashes, poison ivy and chilblains.

Other uses: Dogwood’s inner bark = red dyes of various shades, depending on the other plants it was combined with. The inner bark, dried and grated = main ingredient for kinnikinnick, a smoking material used alone or to dilute the strong, native tobacco. Tobacco and kinnikinnick = peace offerings and were sprinkled on grave boxes to assist the dead on their journey. A utility plant, dogwood branches = baskets and frames to dry hides. Crushed stems = toothbrushes.

Lore: Eighteenth century French Canadians called dogwoods *bois de calumet* or “wood for pipes.” Alternate-leaved dogwood (*C. alternifolia*) was used as a charm on muskrat traps to ensure success.



Smoking materials included bark of red osier dogwood, cedar, willow, and leaves of mullein, cranberry, sumac and skunk cabbage. Drawn from Ritzenthaler, 1970

Eastern Leatherwood (*Dirca palustris*) Thymelaeaceae - Mezereum Family

Parts used: Root, wood, stalk, bark

Medicine: Root tea = emetic, cathartic, for kidney disease by the Menominee; root infusion = lung disease. An infusion of the stalk = a physic by the Ojibwe. Bark tea = laxative; a bark infusion = diuretic. Millspaugh called the bark a “masticatory for aching, carious [decaying] teeth” (though he notes that chewing the bark causes a burning sensation in mouth and stomach and that it is an irritant of the mucous membranes of the GI tract, bladder and nerves. He added that applying the bark to the skin causes “vesication” [blistering] and that the resultant sores are hard to cure. Root infusion = a wash to strengthen hair and a wash for chronic diseases. Pounded bark = poultice on “malign ulcers” and cancers. A combination of leatherwood bark and sarsaparilla (*Aralia nudicaulis*) = external ointment for ulcerated skin and for advanced skin disease. Rafinesque reported that the bark and root have a “peculiar nauseous smell and an unpleasant acrimonious taste.”

Other uses: Smooth, pliable bark, easily separated from the wood in vertical strips = basket weaving, bowstrings, fishing line, ropes, and cords; used to lash together the frame of a bark canoe. Leatherwood bark fibers = equal in strength to the inner bark of basswood (*Tilia americana*). Millers used the bark string to tie the tops of their flour bags. Leatherwood fibers have been found in textiles produced two thousand years ago by the Ohio Adena. This is one of those contradictory species whose primary use, bark fiber, seems impossible based on the drastic effects of the fiber-producing part on the skin.

Lore: Folk remedy for toothache, facial neuralgia, and paralysis of the tongue. Called “*bois de plomb*” or “lead wood” because the “wood is as soft and as tough as lead.” Early settlers used switches of leatherwood for whipping their children. It was commonly noted that branches could not be broken off of the shrub, even by strong men.

Chemistry: The bark contains the acrid resin *mezerin*, a poisonous glycoside *daphnin*, and a fatty oil.

Caution: The fruit has suspected narcotic properties; eating it causes nausea, vertigo, stupor, and unconsciousness. Skin contact with inner surface of bark causes severe dermatitis, blistering and sores. Even minute amounts, taken internally, cause salivation and burning of the tongue.

Other names: Moosewood, Rope Bark, Bois de plomb, Poisonberry, American Mezereon

Common and Glossy Buckthorns (*Rhamnus cathartica* and *R. frangula*)

Rhamnaceae - Buckthorn Family

Parts used: Wood, inner bark, fruit, juice

Medicine: Common buckthorn bark extract = powerful and nauseating intestinal purge; glossy buckthorn = a “mild but certain purgative”.

Other uses: Fresh fruit = a saffron-colored dye; the bark a “fine” yellow. The juice of ripe fruit of glossy buckthorn = a fine green pigment for water color (foliage in the color plates of Millspaugh’s original text was painted with this pigment). Glossy buckthorn wood = “the best charcoal for the finest gunpowder”. Buckthorn extracts are used as a purgative in veterinary practice.

Lore: Small animals that ate buckthorn and were eaten, in turn, by people, were said to retain the purgative qualities of the plant. Records of the use of buckthorn go back at least 1,000 years.

Chemistry: Buckthorns contain the powerful laxative *anthraquinone*.

Caution: Although they are labeled as edible in some texts, the fruits and bark can cause intense digestive upset.

Other names: Purging Buckthorn (Common), Black Alder (glossy)

Winterberry (*Ilex verticillata*) Aquifoliaceae - Holly Family

Parts used: Bark, leaf, fruit

Medicine: Astringent bark decoction = taken internally for blood disorders, “inflammatory complaints,” diarrhea, liver and gall bladder problems, herpes, as a tonic, and as a *quinine* substitute in the treatment of intermittent fevers. Strong bark decoction, externally = chronic skin ailments, sores, and “foul and gangrenous ulcers,” and was considered antiseptic. Fruit = expel worms.

Food: Winterberry leaves, steeped = a beverage tea.

Caution: Winterberry fruit is considered toxic.

Virginia Creeper, Woodbine (*Parthenocissus quinquefolia*)

Vitaceae - Grape Family

Parts used: Root, plant, stem, leaf

Medicine: A plant tea = jaundice; a root tea = astringent, diuretic, for diarrhea and gonorrhea. The plant = dropsy, bronchitis, and other pulmonary complaints. A leaf

tea = externally on swellings and on the rash of poison sumac, mixed with vinegar = wounds and lockjaw.

Food: The Ojibwe believed the root was a food given by their deity Waynabozho; they also cut the stem into short lengths, boiled and peeled it, and ate the sweet “sap” that jelled under the bark. The cooking water = boiled into syrup that was used as a seasoning.

Caution: Berries and leaves are considered toxic, and autumn leaves may cause dermatitis.

Staghorn Sumac (*Rhus hirta*) **Anacardiaceae** - Cashew, Sumac Family

Parts used: Root, trunk, bark, inner bark, sap, leaf, flower, fruit

Medicine: Berry = tea for bed-wetting, cough, lung ailments, rheumatism, fever, and worms, and gargled for sore throats. Flower tea = stomach pain. Leaf tea = asthma, diarrhea, dysentery, sore throat, fever, and tonsillitis. Decoction of inner bark of roots and stems = internally for gonorrhea, diarrhea, fever, dysentery, and infection of the lymph glands, and externally on skin ulcers and hemorrhages. Root and bark tea = externally on bleeding, burns, and hemorrhoids. Dried leaves = smoked for asthma. Sap = ointment for cuts, warts, scratches, and infected sores.

Food: Steeped in water for hours, the berries produced a refreshing, tart beverage; they were also dried and used in winter in a hot drink sweetened with maple sugar. Berries are high in *vitamins A* and *C*, fat, and *tannin*. Sumac berries and the dried, red, autumn leaves = smoked in pipes in combination with other plant material.

Other uses: Sumac pulp and inner bark = a yellow dye, and the berries = a red one. Berries and branches boiled together = a black, ink-like liquid. Sumac trunks, with their pith hollowed out made good flutes and excellent spiles for tapping maple trees. The leaves and bark contain *tannic acid* and were used in tanning leather.

Chemistry: Sumac contains active anti-bacterial agents, which may explain why spiles made from sumac reputedly keep tap holes open longer.

Currants and Gooseberries (*Ribes* spp.) **Grossulariaceae** - Gooseberry Family

Parts used: Root, bark, fruit

Medicine: Mixtures of currant or gooseberry root with other plants = back pain and a variety of gynecological complaints including “uterine problems due to having too many children.” Root medicines = urinary tract conditions, “female weakness,” and worms. Rafinesque reported that bark teas of black currant (*R. americana*) were gargled for fever, angina, dysentery, and hydrophobia, and that the fruits and jellies were recommended for sore throat. A root poultice = swelling, and root tea = sore eyes.

Food: Though some tribes warned against eating too many currants, gooseberry and currant fruits = staples eaten fresh, dried, or mixed with other ingredients like corn or pemmican. Native Americans removed spines from some gooseberry species by singeing them or by putting them in a skin (later, a cloth) bag and rubbing the spines off. Settlers fermented the fruit into wines and cordials.

Swamp Rose (*Rosa palustris*) Rosaceae - Rose Family

Parts used: Root, bark, inner bark, flower, fruit (hips), oil

Medicine: A root tea brewed by the Potawatomi = headache and lumbago, and by the Ojibwe = children with convulsions. Dried, powdered flowers = heartburn, and a wash made from the flower = discomfort of hay fever. The inner root bark, followed by that of the red raspberry (*Rubus idaeus* var. *strigosus*) = two-phase cataract treatment by Ojibwe. A root decoction = wounds, sore eyes and cataracts. Rose oil = eye, skin, and digestive afflictions, depression, insomnia, and headache.

Food: Rose fruit, though large-seeded = edible but somewhat laxative; the fruit was made into a nutritious syrup. Rose petals = sweet, edible, and rich in *vitamin C*.

Chemistry: Like other members of the Rose family, the plant is high in *tannin* and so was used as an astringent. Three rose hips are reputed to contain as much *vitamin C* as one orange and are richer by weight than oranges in *calcium*, *phosphorous* and *iron*.

Caution: Though the Menominee and Mesquakie prescribed the skin of the fruit to treat stomach troubles, bristles must be carefully removed from the fruit in order to avoid bowel irritation. Like other members of the Rose family (including apples), the seeds contain a *cyanide* compound which can be harmful when consumed in quantity.

Black Raspberry, Black-Cap (*Rubus occidentalis*) Rosaceae - Rose Family

Parts used: Root, leaf, shoot, fruit

Medicine: Mildly astringent, diuretic leaf tea = pregnant women. Raspberry root = diarrhea, dysentery, measles, back pain, stomach pain, hemorrhaging, cough, scurvy, vomiting, summer sickness, “female weakness,” toothache, and bowel problems in children. Leaf tea, sometimes in combination with goldthread (*Coptis trifolia*) = gargle for sore throat. A raspberry root decoction = external wash for sore eyes and early cataracts. Leaf and root tea = wash for sores and wounds. The pain of a bee sting was relieved by rubbing it with a raspberry leaf. Black raspberry tea and fruit syrup = flavor for medicine.

Food: The fruit and the fresh, peeled shoot = food; leaves and fruit = source of *vitamin C*. Roots, stems, leaves, or berries soaked in water, sweetened with maple sugar = a beverage tea by the Mesquaki.

Modern: *Fragarine*, a compound extracted from the leaves, was used in obstetrics in World War II.

Willow (*Salix* spp.) Salicaceae - Willow Family

Parts used: Root, bark, twig, leaf, bud, catkin

Medicine: Astringent willow teas and tonics = a variety of internal ailments, fever, cough, colds, asthma, fainting, trembling, vomiting, sore (and “septic”) throat, pain, arthritis, and gout. Willow was one of the substitutes for *quinine*. A root tea = to arrest hemorrhage and to promote sweating in fevers and chills. Bark washes and poultices = headaches, corns, bruises, bleeding, sores, sprains, “gangrenous ulcers,” cancers, and rashes, including poison ivy. A strip of bark tied over a cut = a styptic, an astringent, and an antiseptic, and the bark was smoked = asthma. Some willow species = worming medicines.

Other uses: Shredded willow bark = a tobacco substitute. Willow branches and bark = an important source of building and weaving material for snow shoes, cordage, bows, fish nets, bags and baskets. Rafinesque reported that “the seed wool of some species may be spun” (Erichsen-Brown 1979). The roots of some species = a red dye.

Lore: For millennia, this aspirin pre-cursor has been used as an analgesic and anti-inflammatory; these properties are strongest in the inner bark. Because of the bitter *tannin*, it is hard to ingest a therapeutic amount of a pure bark preparation, so leaf teas were also used. The bitterness in a willow species was believed to be directly proportional to its concentration of *salicin*. *Acetylsalicylic acid* was synthesized in the laboratory in the 1850's. Catkins were thought to be an aphrodisiac, but a decoction of willow twigs and buds was considered anti-aphrodisiac, an early method of birth control. A willow wash was alleged to stimulate hair growth.

Poison or Swamp Sumac (*Toxicodendron vernix*)

Anacardiaceae - Cashew, Sumac Family

Parts used: Root, sap

Medicine: Root = counterirritant poultice applied by some Native Americans for ringworm, to draw blood to a wound or infection, to open a swelling; treatments practiced only by the most skilled healers. White practitioners used poison ivy (*T. radicans*) and sumac as counterirritants to treat a variety of palsies and paralytic conditions because their “stimulating action on the nervous system” caused “twitches...and prickling of the affected limb” (Erichsen-Brown 1979).

Other uses: According to one 16th century account, Indians at war along the St. Lawrence dipped their arrowheads in poison sumac sap and also practiced chemical warfare by burning the plant so that its smoke traveled downwind to their enemies, spreading both a fetid odor and the persistent irritant *urushiol*. Boiled sap = an indelible black writing ink or cloth dye, an ingredient in frontier varnishes, and a “dressing” (polish or waterproofing) applied in the factory to new boots and shoes, to the distress of some of the laborers (Millsbaugh 1974).

Lore: Some Native Americans believed that if you approached poison sumac with apprehension about catching it, you would have a more severe case.

Caution: A related species is the base of a high-quality varnish in Japan, but contact with some sumac-based varnishes can cause a rash in susceptible people.

Other names: Poison Elder, Varnish Tree, White Sumach.

Large Cranberry (*Vaccinium macrocarpon*) Ericaceae - Heath Family

Parts used: Branch, leaf, fruit

Medicine: Steeped branches = pleurisy. Leaves = kidney disorders, fever, and nausea. Fruit = blood disorders, fever, dropsy, dysentery, hemorrhoids, erysipelas, and scurvy. Astringent, crushed fruit = poultice on wounds, inflammations, and skin cancers.

Food: Cranberries = prized food, often sweetened by maple sugar; they were ingredients in pemmican and were mixed into other dishes. Berries = nutritious, thirst-quenching juice that was said to “lessen the heat of the body.” Cranberries were an early food export from North America because they spoiled very slowly when shipped in barrels. The leaf = smoked with other plants.

Other uses: Berries = red dye.

Chemistry: Cranberries contain the anti-bacterial chemical *hippuric acid*, which helps fight and prevent urinary tract infections. They are high in *vitamin C*.

Blueberry (*Vaccinium angustifolium* and *myrtilloides*) Ericaceae - Heath Family

Parts used: Root, leaf, fruit

Medicine: Leaf and root teas = tonics, cramps, hiccups, hysteria, epilepsy, colic and labor pains; a mildly astringent fruit syrup = diarrhea. Blueberry leaves and fruit are listed in many old references as a diabetes treatment.

Food: Fresh or dried fruit = important food. Dried berries = baked into breads or pounded into strips of dried venison to make the winter staple, pemmican. Early French Canadians cooked blueberries for 10 hours or more to produce a concentrated paste called "*Sauvage Cheese*" that could be used as a trail food or could be dried, stored, and mixed with other foods.

Other uses: Blueberry leaves = tanning leather.

Lore: A cup or two of leaf tea daily was said to lower blood and urine sugar and to cure urinary tract infections. The Ojibwe trickster deity Waynabozho taught that burning the dried flowers and having "crazy" people inhale the smoke would cure their craziness.

Chemistry: Chemically, *quinic acid* in the leaves may be effective against gout and kidney stones. Both the berries and the plants are mildly astringent and diuretic and may act as vasoconstrictors, and the berries contain antioxidants, now recognized as cancer and heart disease preventatives.

Caution: The leaves of many members of this family are considered toxic.

Viburnums (*Viburnum* spp.) Caprifoliaceae - Honeysuckle Family

Parts used: Bark, inner bark, stem, fruit

Medicine: Inner bark tea = sedative, nervine, emetic, anti-inflammatory, diuretic, for asthma, cramps, uterine spasms after childbirth, prevention of miscarriage and abortion, skin cancers. Bark infusion = contraceptive by the Iroquois, for stomach and menstrual problems by the Menominee and the Ojibwe. High-bush cranberry (*V. opulus*) = emetic, anti-spasmodic, for whooping cough, swollen glands and mumps, scurvy, stomach cramps, bodily pain, leg cramps, colic, and sore eyes.

Food: Fruit of some species = eaten fresh from the hand, but not gathered for future use. Sour fruit of high-bush cranberry = eaten cooked with sugar or made into jelly.

Other uses: Bark = smoked. Stems, hollowed = frontier popguns, with the pistons made of Juneberry (*Amelanchier* sp.), using wads of elm bark, chewed paper birch bark (*Betula papyrifera*) or *Artemisia* as ammunition.

Lore: A 19th century pharmaceutical bulletin stated, "It tones up the system, preventing or removing those harassing nervous symptoms that so often torment and wear out the pregnant woman."

Chemistry: Contemporary research suggests that viburnums have anti-inflammatory, anti-spasmodic, uterine-sedative qualities and that they contain the aspirin precursor *salicin*.

Caution: The unripe berries of all species are potentially poisonous; ripe fruit of some viburnums may cause nausea.

Other names: Cramp-bark, Marsh Elder, Pembina, Nannyberry

Wild Grape (*Vitis riparia*) Vitaceae - Grape Family

Parts used: Root, sap, leaf, fruit

Medicine: Root decoction = Ojibwe treatment for diabetes and rheumatism. Leaf tea = internally for diarrhea, hepatitis, thrush, and headache; leaves = poultice for fever, headache, and rheumatism.

Food: Young leaves = cooked greens or additions to rice or meat. Fruit = eaten raw or dried for winter consumption. Old, thick grapevine, tapped = clear, watery, drinkable sap.

Lore: In the first century AD, Greek physician Discorides wrote that “to drink the juice of the leaves doth help the dysenterical, the blood spitters, and women that lust” (Vitale 1997).

Chemistry: Both leaf and seed extracts are antioxidant. Seed extracts have proved valuable in treating some varicose vein, circulatory and bruising disorders.

Common or Northern Prickly-Ash (*Zanthoxylum americanum*)

Rutaceae - Rue Family

Parts used: Root, bark, inner bark, leaf, fruit, oil

Medicine: Prickly-ash bark and fruit = strong tonics, cough syrups, and expectorants, for rheumatism, hemorrhage and tuberculosis by the Mesquakie. Berry tea and bark infusion = colds, coughs, sore throat, tonsillitis, cholera, typhoid and typhus; goldenrod galls were added = kidney problems. A tea of the inner bark alone = heart, kidney and lung ailments, cramps and nervous debility; a mixture of the bark boiled with several other plants = strengthen a sick person. The Winnebago prescribed an inner bark tea = gonorrhea. Berry tea sprayed on the chest = bronchial disease; prickly ash bark = poultice on sores, and a root bark preparation = injected into swellings with a garfish tooth by the Menominee. Some topical “salves” included prickly ash and bear grease. The seriously unpleasant-tasting powdered inner bark was moistened and applied to toothache, though Rafinesque tried it and wrote of “the burning sensation which it produces on the mouth, merely mitigating the other pain, which returns afterwards” (Erichsen-Brown 1979). Prickly ash fruit = stimulant and antispasmodic and for toothache. The Ojibwe used a root decoction as a wash to strengthen the legs and feet of “weakly” children.

Food: Prickly ash berries = a seasoning.

Other uses: *Zanthoxylum* means “yellow wood;” prickly ash = a yellowish dye.

Chemistry: The lemony-smelling oil contains an alkaloid resembling *berberine*, a mild sedative.

Other names: Toothache Tree

Herbaceous Dicotyledons

Common Yarrow, Milfoil (*Achillea millefolium*) Asteraceae - Composite Family

Parts used: Entire flowering plant

Medicine: Antispasmodic, astringent, analgesic, hemostatic, antiseptic, styptic, antibiotic, sweat-inducing yarrow plant tea and tonic = fever, ague, colds, rheumatism, indigestion, diarrhea, cramps, coughs, anorexia, kidney problems, internal irritation or bleeding, infection, menstrual problems, and to speed childbirth. Fresh leaves = poultice on skin infection, bruising, spider bite, and wounds. A yarrow root decoction = a wash for skin eruptions. Fresh leaves = chewed for toothache. The Winnebago put a wad of yarrow leaves in the nose to stop nosebleeds and in the ear for earache. Vapor of yarrow flowers thrown on coals = inhaled for headache. Yarrow was one of several species used as a *moxa*; a short length of stem was inserted under the skin, and the other end was ignited. The stem was allowed to burn down to the skin for pain relief or as a form of counterirritant.

Other uses: Yarrow flowers = yellow and olive green dyes. Yarrow was planted in gardens to keep destructive insects away; dried plant = insect repellent in the bedding of animals.

Lore: Roman soldiers called it “*herba militaris*”. For many Native American tribes yarrow was a sacred sweat lodge herb, and its flowers were smoked ceremonially. The Potawatomi threw flowers on hot coals to produce a smudge to counteract evil spirits – this herb has long use in Europe and Asia in both conjuring up and repelling the devil and witchcraft. In North America, a wash or paste of pounded leaves was applied by the shaman of some western tribes before ceremonies that involved their handling or walking on hot coals or putting them in the mouth. Another of its many common names, “Old Man’s Pepper” referred to the belief that yarrow was an aphrodisiac.

Chemistry: Over 120 chemical constituents have been identified in yarrow, including *sesquiterpene lactones* that are antimicrobial, cytotoxic and possibly anti-cancer. Other elements have fever-reducing, skin-soothing, antispasmodic, expectorant, and pain relieving action (Kindscher 1992).

Caution: Yarrow tonics may be beneficial, but overuse is harmful due to the toxic chemical *thujone*. Some people get a skin rash from handling it.

Other names: Nosebleed, Sneezefoil, Soldier’s Woundwort.

White Baneberry (*Actaea pachypoda*) Ranunculaceae - Buttercup Family

Parts used: Root, leaf

Medicine: A root tea = a nervine, vermifuge, for headache due to eye strain, to revive a patient at the point of death, in childbirth and for post-partum pain, to induce lactation, for convulsions, rheumatism, coughs, colds, constipation, stomach and urinary problems, as a substitute for digitalis, and as a “last recourse for a fatty or irritable heart”. Leaf = poultice on wounds, strains, swellings, and boils. Some tribes



Carved wooden flute or “flagelot.” Often used in courtship. Drawn from Vidler, 1976

restricted the red baneberry (*A. rubra*) for male urinary problems and the white for a female medicine.

Caution: The root, foliage, and fruit are poisonous; as few as six berries cause vomiting and, eventually, “paralysis of respiration”.

Other names: Doll’s Eyes, Squawroot, Cohosh

Hog Peanut (*Amphicarpa bracteata*) Fabaceae - Pea Family

Parts used: Seed

Food: Seed produced by the above-ground flowers = eaten like peas, though some sources label them inedible and others recommend a thorough boiling. Petal-less, self-fertilizing flowers at the base of the plant produce single-seeded pods found just below the ground, and these seeds, reminiscent of peanuts, were cooked after their tough outer shell was removed by boiling. Seed contains 25% protein, the best protein source of any wild plant used by Native Americans.

Lore: Native American women of some tribes robbed mouse and other rodent caches of hog peanuts in fall and early winter (and often left corn in trade).

Hepatica (*Anemone acutiloba* and *americana*) Ranunculaceae - Buttercup Family

Parts used: Root, leaf

Medicine: Native Americans used hepatica relatively little; roots = digestive and intestinal complaints, fever, chills, coughs, early tuberculosis, and convulsions. Tea brewed from the roots and leaves = vertigo. Hepatica root mixed with maidenhair fern (*Adiantum pedatum*) = “female disorders” by the Menominee. Hepatica = a poultice on inflammations and bruises. There was a long tradition of medicinal use by Europeans of related Old-World species.

Other uses: The roots = dye for mats and baskets.

Lore: Hepatica roots = charm on or near traps set for fur-bearing animals. The Cherokee brewed a tea of hepatica and walking fern (*Asplenium rhizophyllum*) = ward off dreams of snakes. The Mesquaki used hepatica as a wash, a steam, and a tea for facial “deformities;” like twisted mouth or crossed eyes; the treatment continued until the face returned to normal. In accordance with the Doctrine of Signature, hepatica was used in Europe for liver ailments and that custom continued in the New World. During a “liver tonic boom” in 1883, over 450,000 pounds of domestic and imported hepatica were processed for consumption in America, and for a short time hepatica leaves became a trade item for some tribes. Although it was agreed that the medicine was ineffective, a contemporary commentator remarked that “demand was created for it by manufacturers of prominent proprietary medicines” (Coffey 1993).

Other names: Moose-ear, Liverwort, Heartleaf

Ground Nut (*Apios americana*) Fabaceae - Pea Family

Parts used: Root, tuber, seed

Medicine: A root tea = a general physic, and the root = poultice some external cancers.

Food: John Bartram, a contemporary of Ben Franklin, wrote that the above-ground seed = a pea-like food. Tubers, some larger than walnuts, growing in strings on the

roots at or below ground level = an important source of plant protein eaten raw, or peeled, then scalded, roasted, boiled, combined with other food, or dried and stored for winter use. Their flavor has been variously described as tasting like mushrooms, artichokes, parsnips, truffles, chestnuts, and potatoes.

Lore: The tuber became a staple of the early colonists, who passed a law in 1654 forbidding Indians to collect ground nuts on “English” land on pain of whipping (first offense) or incarceration. A semi-cultivated plant could produce five pounds of high-quality food.

Other names: Bog Potato, Hopniss, *Pomme de terre*.

Wild Columbine (*Aquilegia canadensis*) Ranunculaceae - Buttercup Family

Parts used: Rhizome, plant, flower, seed

Medicine: A rhizome tea = uterine bleeding, diarrhea, stomach trouble, and throat and mouth irritation. The Mesquakie chewed the rhizome = bowel and stomach problems and combined it with the bark of prickly ash (*Zanthoxylum americanum*) “when contents of the bladder are thick.” A plant infusion = externally on poison ivy rash. Native Americans used very small quantities of crushed columbine seeds = internally for headache, fever, and to speed childbirth, and externally on head lice.

Food: Flower spur = chewed for the nectar.

Lore: Men from some tribes of the lower Midwest crushed the seeds, usually by chewing them, and spread the paste on their clothes as a perfume and a love charm. A similar paste rubbed on the legs of men and horses before a race encouraged stamina. Root and leaf teas bestowed the powers of persuasion, and seed capsules, smoked with tobacco = a love charm.

Caution: Columbine leaves contain *prussic acid*, which is potentially poisonous, and chewing or ingesting them can result in an unpleasant narcotic effect.

Wild Sarsaparilla (*Aralia nudicaulis*) Araliaceae - Ginseng Family

Parts used: Root, leaf, seed

Medicine: A root tea = backache, rheumatism, gout, weakness, cough, chest pain, cardiac problems, stomach ache, during pregnancy and childbirth, as a stimulant, and as a blood purifier. Sarsaparilla was often used in combination with other plants. A leaf tea = fainting and fits. Dried, powdered sarsaparilla root, inserted directly into the nose = nosebleeds, by the Ojibwe. Fresh root, mashed or chewed = poultice on sores, burns, swelling, wounds, ulcers and ringworm.

Food: Sarsaparilla root = food consumed during lengthy hunting journeys and wars. Root and seeds = ingredients in beverages. Fruit = jelly.

Lore: The Ojibwe soaked their gill nets in a mixture of water, sweet flag (*Acorus calamus*), and sarsaparilla in order to attract fish. The name “sarsaparilla” is shared with various species of greenbriers (*Smilax* spp.).

Swamp Milkweed (*Asclepias incarnata*) Asclepiadaceae - Milkweed Family

Parts used: Root, stem fiber, leaf, flower, pod, silk

Medicine: The Mesquakie brewed a strongly laxative and emetic root tea reputed to

rid sufferers of their internal parasites in one hour! A root tea = diuretic, laxative, bronchodilator, and in a tonic bath for weak patients. Swamp milkweed = Colonial medicine for asthma, rheumatism, dysentery, syphilis, worms, and as a heart tonic.

Food: Cooked in several changes of water, the tender greens = a potherb. Milkweed flowers have a high sugar content = boiled to make a sweet syrup. Silk from the young, tender pods = eaten.



Burden strap or tumpline made of fibers from nettle, basswood, or milkweed. Redrawn from Tunis, 1959

Other uses: Fiber extracted from swamp milkweed stem = small cordage for belts, fish nets and burden straps; this fiber has been identified in Hopewell Indian archaeological sites in Ohio dating from 300 BC to 500 AD.

Caution: Milkweeds' bitter sap is toxic when raw due to potentially fatal cardiac *glycosides*, which are similar to *digitalins*; however, one-half of the lethal dose is said to produce vomiting sufficient to prevent the other half of the dose from being ingested.

New England Aster (*Aster novae-angliae*) Asteraceae - Composite Family

Parts used: Root, plant

Medicine: A strong root tea = internally for diarrhea and fever; and externally = variety of skin eruptions, poison ivy and poison sumac. A plant infusion mixed with the rhizome of the lady fern (*Athyrium felix-femina*) = "mothers who have fevers in their intestines." Smudged plants = revive an unconscious patient and as fumigating agents. A root infusion of large-leaved aster (*Aster macrophyllus*) = externally for headaches. Purple-stem or swamp aster (*Aster puniceus*) = a cold remedy by the Iroquois. Some aster species were considered nervines = spasms, epilepsy and hysterics,

Food: Large-leaved aster root = cooked with soups; the Ojibwe consumed the young leaves, boiled, with fish in the belief that the leaves had medicinal as well as nutritive value.

Lore: Aster root was smoked with tobacco and used in a variety of other ways to attract game. Rafinesque proposed that the more strongly scented the aster, the more likely the species was to be an effective "valerian" or nerve medicine.

Beggars' Ticks (*Bidens* spp.) Asteraceae - Composite Family

Parts used: Root, leaf, juice, seed

Medicine: Root tea = severe cough and croup, and leaf tea = croup and internal parasites. Beggar's tick root and seeds together = expectorant, and its seeds alone = female disorders. Heated leaves = chewed to relieve sore throat or poulticed on the chest and throat for bronchitis and laryngitis. Plant juice = styptic, and was dropped into the ear for earache. Europeans used a root infusion = cathartic, astringent, diaphoretic, and to induce menstruation and urination.

Other uses: Beggar's tick = orange, brown, or yellow dye for wool or silk.

Lore: Because of the symbolic "stick-tight" powers of the seeds, they were used as charms.

Caution: Concentrations of *nitrogen* in some species of beggars' ticks make them toxic to grazing cattle.

Marsh Marigold, Cowslip (*Caltha palustris*) Ranunculaceae - Buttercup Family

Parts used: Root, leaf, leaf juice, flower

Medicine: A root tea = promote sweating, treat colds, emetic and expectorant. A tea of root or leaf = childbirth aid. Leaf tea = “fits”, and as diuretics and laxatives. The iron-rich leaves, boiled in several changes of water = anemia. The Ojibwe mixed marsh marigold with maple sugar for a cough syrup. Boiled root, powdered or mashed = poultice on scrofulous sores, and leaf juice = externally on warts and scrofulous sores.

Food: Acrid, young leaves, boiled in several changes of water = potherbs.

Other uses: Marsh marigold flowers = yellow dye for yarn.

Chemistry: Marsh marigold contains *anemonin* and *protoanemonin*, which have exhibited minor anti-tumor activity.

Caution: All parts of the plant may irritate the skin or mucous membranes; sniffing the bruised stem can induce sneezing, and eating raw leaves or flower buds reportedly results in intoxication.

Blue Cohosh (*Caulophyllum thalictroides*) Berberidaceae - Barberry Family

Parts used: Root, seed

Medicine: A root tea = fever, menstrual problems, abdominal cramps, rheumatism, hiccups, dropsy, hysteria, urinary tract infection, lung ailments, venereal disease, epilepsy, warts, sore throat, mouth ulcers, colic, as an emetic, a contraceptive, and an antispasmodic in infant convulsions. Early explorer naturalists reported that Native American women took cohosh for two or three weeks before labor to promote labor and ease childbirth. Crushed root = warts.

Food: Cohosh seeds = a coffee substitute.

Chemistry: The seeds, root, and leaf contain the alkaloid *methylcystine*, which produces effects similar to nicotine, and *glycosides* which stimulate the contraction of smooth muscles, including those of the uterus and of the blood vessels of the heart. Extracts in low doses have inhibited ovulation in laboratory rats.

Caution: Cohosh is still used medicinally today, but ingesting the plant can be dangerous to the heart and kidneys, has been lethal to children, and is not recommended during pregnancy. Susceptible people get a contact dermatitis from the leaf and root.

Other names: Squaw-root, Papoose-root, Lion’s-foot

Lamb’s Quarters, Pigweed (*Chenopodium album*)

Chenopodiaceae - Goosefoot Family

Parts used: Plant, leaf, seed, oil

Medicine: Lamb’s quarters = Native American treatment for stomach aches, scurvy prevention. A cold plant tea = diarrhea. The leaves = applied to burns and gout. An oil, *ascaridole*, extracted from the leaves = worms.

Food: Young leaves = eaten as greens, boiled with fat, were rated “sweeter than spinach.” The seeds = ground into meal, baked into bread, or added to cornmeal to make a mixed-grain bread.

Lore: Although lamb’s quarters is listed in many books as an introduced species, its seeds have been found in archaeological sites in Michigan and Ohio dating back to about

1300 AD and 1,000 BC, respectively. If it came from the Old World, it arrived considerably before Columbus did.

Common or Spotted Water Hemlock (*Cicuta maculata*)

Apiaceae - Carrot Family

Parts used: Root, seed

Medicine: Root = very small amount on consecutive days = abortion. A small piece of root chewed for four consecutive days = an oral contraceptive that could bring permanent sterility, though some tribes considered it a crime to use the plant this way. Root = externally as a poultice. White settlers reportedly used hemlock powder to relieve the pain of certain cancers. In the early 19th century, one treatment for headache was to insert tender hemlock leaves in one's shoes, and a cure for old sores involved taking, twice a day, small pills of flour mixed with mashed hemlock stems.

Other uses: Water hemlock seeds, mixed with tobacco = reportedly smoked by the Ojibwe and also thrown into the campfire as a hunting lure or charm. Water hemlock was also used as a quick-acting suicide agent, (not the same species that killed Socrates).

Caution: All parts of the water hemlock contain *cicutoxin*, a highly poisonous toxin of the central nervous system that causes excessive salivation, tremors, convulsions, pain, nausea, delirium and death within about thirty minutes. The root, which "smells edible" and has been fatally misidentified as a harmless parsnip relative, contains the highest concentration of toxins. A walnut-sized piece of the root can kill a cow, and children have been poisoned by using the stalk as a pea shooter. Hemlock seeds look like the related caraway, anise and fennel seeds – browsers beware! Several herbal treatments were used by Native Americans to counteract this potent poison, all called for immediate and violent purges of the digestive tract, often using elder root bark (*Sambucus* spp.).

Three-Leaved Gold-Thread (*Coptis trifolia*) Ranunculaceae - Buttercup Family

Parts used: Root, leaf, stalk

Medicine: Root tea = internally for colds, respiratory problems, childbirth, dyspepsia, for "strengthening the viscera," promoting digestion, and to prevent pinworm in children. Root preparation = externally on canker sores, thrush, the gums of teething babies, for sore eyes, ears, mouth, gums, and throat. Goldthread mixed with white ash (*Fraxinus americana*) = deafness. Tea made from goldthread root and goldenseal (*Hydrastis canadensis*) = "release the driving desire for alcoholic beverages" (Naegale, 1996). Root tea = "for mouths irritated by too much tobacco smoking".

Other uses: The roots, leaves and stalks = yellow dye for skins and porcupine quills.

Lore: "The writer would not like to dig what would be a pound of the dried root for any amount that could be obtained for it," stated a description in a Toronto leaflet in the late 1860's. Ten years later, the thread-like dried roots were fetching 7 ½ cents a pound, and by the mid 1880's the Shakers paid 37½ cents a pound for the dried plants.

Chemistry: Gold-thread contains anti-inflammatory, antibacterial, and mildly sedative berberine.

Other names: Yellow-root, Golden-seal, Canker-root

Queen Anne's-lace, Wild Carrot (*Daucus carota*) Apiaceae - Carrot Family

Parts used: Root, flower, leaf, seed, oil

Medicine: Flower tea = diabetes by the Algonquin and the Mohegan. Root tea = by Europeans as a diuretic, to prevent and dissolve kidney stones, to eliminate worms, and to treat spasmodic vomiting. Seed oil = eliminate roundworms. Seed infusions = relieve flatulence and promote menstruation. Seeds, historically, were powdered and mixed in wine = spider bites.

Food: The small, white root of the first-year plant can be cooked like carrots. Queen Anne's lace is the parent plant of the commercial carrot, a plant breeding accomplishment that occurred in France in the early 1600's. The plant soon traveled to England and then to America, where it was cultivated by the colonists.

Other uses: The leaves = a yellow dye.

Lore: Queen Anne's lace has had traditional and contemporary folk use as a "morning-after" contraceptive. The French and the Germans fermented a carrot-based liqueur.

Chemistry: Seeds are diuretic due to their high *potassium* content. Science confirms antibacterial, diuretic, hypotensive, and anthelmintic properties. Plant extracts are said to produce uterine contractions; there are reports that seed extracts have, experimentally, hampered implantation of fertilized ova. The root is rich in *vitamin A* and *beta-carotene*, which benefit vision.

Caution: Queen Anne's lace vegetation may cause dermatitis or blisters in some who handle it. It contains *furocoumarin*, which may also cause a rash on susceptible people who contact the leaves in sunlight.

Round-Leaved Sundew (*Drosera rotundifolia*) Droseraceae - Sundew Family

Parts used: Plant, juice

Medicine: Native Americans had few uses for round-leaved sundew. Sundew plant tea = an anti-spasmodic and expectorant for dry cough, asthma, whooping cough, "tobacco cough," bronchitis, hypertension and arteriosclerosis. Leaves = poultice on corns and warts. Settlers mixed the plant with milk = sunburn and remove freckles.

Food: Its juice in milk could "set" or curdle milk.

Lore: According to the Doctrine of Signatures, "because sundew holds onto its moisture, ingesting it should help men's bodies preserve their natural humidity." Considered an aphrodisiac, it was nicknamed "Lustwort", because, according to Gerard, "Cattell of the female kind are stirred up to lust by eating even a small quantity" Italians distilled a liquor called "Rossoli" from its juice, and the leaf of a five inch long species was used as flypaper in Portugal. Linear-leaved sundew (*Drosera linearis*) was used in the same manner as round-leaved sundew. It was said to be a cure for old age.

Chemistry: Sundew contains enzymes with minor antibiotic qualities.

Caution: Its juice is reported to raise blisters.

Daisy Fleabane (*Erigeron philadelphicus*) Asteraceae - Composite Family

Parts used: Plant, plant oil, flower

Medicine: A plant tea = diuretic, astringent, for diarrhea, kidney stones, fevers, stomach pains, diabetes, gout, "gravelly complaints", painful urination, rheumatism,

childbirth, menstrual ailments, lameness, and “hemorrhage of the digestive tract”. The Lakota name for this plant means “sore mouth medicine” and they administered fleabane tea to children with sore mouths. Powdered disk flowers = snuff used by the Mesquaki to cause sneezing and break up a head cold. Steeped, smoked, or inhaled flowers = headache, colds and fever. Distilled oil = externally on wounds and sores as a styptic.

Other uses: Disk flowers = smoked by the Ojibwe to attract buck deer during a hunt. A mixture of the flowers with the brain, gall, and spleen of bison was used by the Lakota to bleach and tan hides.

Lore: The common name “fleabane” comes from the practice of burning the plant to dispel flies, gnats, fleas, and other pests.

Chemistry: Rafinesque reported that the oil was so powerful that two or three drops dissolved in alcohol arrested uterine hemorrhage, a use that continued into the 20th century.

Spotted Joe-Pye Weed (*Eupatorium maculatum*) Asteraceae - Composite

Parts used: Root, leaf, flower

Medicine: Native Americans employed a leaf tea = internally to induce sweating in typhus, as a diuretic for gout, for kidney infection, dropsy, and rheumatism. A leaf tea = external wash by the Ojibwe for joint inflammation, in strengthening baths, and as a calming bath to help a child to sleep. In order to ensure a strong child, the Flambeau Ojibwe bathed children in a root decoction of Joe Pye weed until they were 6 years old. The pinkish flower indicated that it was a medicine used to treat disease in women, in this case, venereal disease.

Lore: Joe Pye Weed was named for a (possibly fictional) Mohegan healer in colonial Massachusetts who is said to have used it effectively during a typhus epidemic. The Mesquaki used the root for a love charm; a young man chewed its root while talking to a woman he wanted to woo. The Potawatomi used the flower as a good luck charm, especially when gambling. Folklore attributes to Joe-Pye weed the ability not only to counteract poisons but also to provide immunity from them.

Other names: Gravel Root, Kidney Root

Boneset, Thoroughwort (*Eupatorium perfoliatum*) Asteraceae - Composite

Parts used: Root, plant, leaf, flower

Medicine: Boneset leaf tea = sweating during fevers, flu, colds, malaria, for rheumatism, muscle pains, spasms, pneumonia, pleurisy, urinary tract problems, gout, and malaise. The root = snakebite by the Mesquaki; the leaves and flower = worms. Recommended “for the same purposes for which Peruvian bark [*quinine*] is employed,” boneset helped quell a yellow fever epidemic in Philadelphia in 1793, malaria, agues, and parasites suffered by Confederate troops during the Civil War, and was reportedly useful in flu epidemics. Boneset = a spring tonic still considered a boost for the immune system. Vapors of the boiling plant, inhaled by Native American women = aches and pains. The white flower of boneset marked it a “male” medicine in traditional Native practice (primarily for treating venereal disease).

Lore: The Ojibwe applied a mixture of boneset and Common milkweed (*Asclepias syriaca*) to deer whistles before hunting as a charm. Boneset's name comes from its use in treating dengue or "break bone" fever; its ability to "break" the fever made it a common remedy of Native Americans and settlers. In 1828 Rafinesque wrote of boneset that it was "common in swamps, marshes and near streams...where it appears to have been stationed by the benevolence of nature, wherever men are liable to local fever...the only objection to its general use is its nauseous and disagreeable taste" (Erichsen-Brown 1979). Because of the way the stem punctures boneset's perfoliate leaves, the Doctrine of Signature indicated that it be used for mending broken bones; boneset tea was (and still is) taken for that purpose. The *Eupatoriums* were among the most prized medicinal plants on the frontier.

Caution: Boneset contains the alkaloid *pyrrolizidine*, with potential to harm the liver. Contact with the leaves may cause dermatitis.

Other names: Ague-weed, Indian Sage

White Snakeroot (*Eupatorium rugosum*) Asteraceae - Composite Family

Parts used: Root, leaf, plant

Medicine: Native Americans drank a root tea = ague, diarrhea, fever, and a variety of urinary tract disorders. Root = poultice on snakebite, and leaves = chewed for toothache. Smoke from the burning plant = "smelling salts" for an unconscious person.

Lore: According to folklore a woman named "Aunt Cherokee," a Native American fugitive from the forced relocation of Indians, pointed out the connection between snakeroot and milk sickness in 1830, but the connection was lost and rediscovered several times before it was scientifically verified in 1917. Since early Native Americans did not keep dairy animals, they were not afflicted with milk sickness.

Caution: All parts of the plant contain the poisonous alcohol "*tremetol*," which is soluble in milk fat. Cows that grazed on it got "the trembles," and both their calves and the people who drank milk from those cows fell sick with the frequently-fatal milk sickness.

Other names: Thoroughwort, White Sanicle, White-top

Wild Strawberry (*Fragaria virginiana*) Rosaceae - Rose Family

Parts used: Root, leaf, fruit, juice

Medicine: An astringent leaf or root tea = stomach ailments, diarrhea, "*cholera infantum*," lung ailments, gonorrhea, fever, jaundice, gout, sore throat, and urinary problems, and as a nerve tonic. A leaf tea = externally for eczema, gum problems, and chilblains. Due to their *vitamin C* content, the fruit effectively treated or prevented scurvy, and the juice is said to dissolve tartar on teeth. A tea of the leaves of the wood strawberry (*F. vesca*) = a wash for sunburn.

Food: Fruit = eaten fresh or dried, or formed into small cakes. Strawberry leaves = a beverage tea by the Winnebago; berries mixed with water and maple sugar = a refreshing beverage by the Iroquois.

Lore: The Iroquois marked the annual re-appearance of strawberries with ceremonies giving thanks.

Cleavers, Annual Bedstraw (*Galium aparine*) Rubiaceae - Madder Family

Parts used: Root, plant, leaf, seed, juice

Medicine: A plant tea = diuretic, laxative, astringent, anti-inflammatory, for bladder and kidney inflammations and stones, bed wetting, fever, and ague. Bedstraw is in the same family as “Peruvian Bark” or *cinchona*, the source of *quinine*. An infusion of cleavers and elder blossoms (probably *Sambucus* sp.) = scarlet fever and smallpox. The juice = stomach ulcers. Plant tea = topically on sores, ulcers, and burns. Cleavers’ refrigerant qualities = sunburn, skin problems, scarlet fever and measles. Other bedstraw species have been used medicinally for eczema, asthma, coughs, bronchitis, psoriasis, ringworm, and scrofula.

Food: Bedstraw is also in the same family as coffee; its roasted seeds = a coffee substitute; and its dried leaves = beverage tea. Tender, non-hairy, young foliage = excellent boiled greens. Because an enzyme in cleavers causes milk to curdle, it has been used as a vegetarian substitute for rennet in cheese making, resulting in a common name “Clabbergrass.”

Other uses: The root = a permanent red dye used by Native Americans to color porcupine quills and by French Canadian women to dye clothes. Bedstraw foliage was packed in mattresses, where it reputedly retained its “loft” when compressed.

Lore: Gerard wrote of cleavers’ ability to “cause lanknesse and keep them from fattnesse;” its reputation as a weight reducing herb was probably due to its diuretic properties. Other folk uses included a wash to remove freckles, a remedy for some cancers, and the belief that the addition of the plant to bedding discouraged fleas.

Chemistry: Extracts contain an anti-inflammatory compound. Fragrant Bedstraw (*G. triflorum*) contains *cumaric anhydride*, an anti-coagulant.

Caution: Cleavers’ juice may cause contact dermatitis.

Wild Geranium, Cranesbill (*Geranium maculatum*)

Geraniaceae - Geranium Family

Parts used: Rhizome

Medicine: Rhizome preparation = internally for ulcers, consumption, bronchitis, ague, dysentery, sore throat, sore gums, and as a birth control agent. Dried and powdered rhizome = styptic applied externally to canker sores, tooth extractions, nosebleed, small wounds, gum inflammation, mouth ulcers, hemorrhoids, burns, inflammations, and eye problems. The rhizome boiled with Wild grape (*Vitis* sp.) = oral thrush.

Chemistry: Geranium rhizome is quite astringent due to a high concentrations of *tannic* and *gallic acid*, their *tannin* content is greater than that of oak. Modern tests show possible antibiotic action.

Other names: Old Maid’s Nightcap, Fluxweed

Orange Jewelweed (*Impatiens capensis*) Balsaminaceae - Touch-me-not Family

Parts used: Whole plant, plant juice, young shoot, leaf, seed

Medicine: Jewelweed plant tea = stomach cramps and chest colds by both Native Americans and settlers. Tannin-rich juice from the crushed leaves and stem, picked before flowering = externally on sores, bruises, burns, cuts, rashes, eczema, warts and athletes’ foot, to relieve the itch of poison ivy, nettle sting, mosquito bites, and

ringworm. Fresh juice = rubbed on the head for headache and boiled down into an ointment for sprains.

Food: Young jewelweed shoots = eaten like asparagus, and the ripe seeds are edible and tasty.

Other uses: Boiled juice = orange-yellow dye.

Lore: According to folklore, drinking jewelweed tea prevents poison ivy.

Chemistry: The juice exhibits antifungal and anti-inflammatory properties.

Other names: Impatiens, Touch-me-not, Wart-wort, Silverleaf, Waxleaf

Great Blue Lobelia (*Lobelia siphilitica*) **Lobeliaceae** - Lobelia Family

Parts used: Root, leaf

Medicine: Leaf tea = emetic, for colds, fever, stomach trouble, worms, croup, and nosebleed, by Native Americans Tea of lobelia root combined with May-apple (*Podophyllum peltatum*) and Wild cherry (*Prunus serotina*) = symptoms of syphilis. Lobelia leaf teas = gargled for coughs. Root = poultice on wounds, inflammation, and skin cancer. Leaves = poultice on headache and stubborn sores.

Lore: Great blue lobelia's Latin name comes from its use in the treatment of syphilis, which was apparently endemic in pre-Columbian North America; the first case was recorded in the Old World in 1493. Syphilis seems to have been far more virulent in the Old World than in the New; within ten years it spread through Europe, India, and the Orient. Based on Native American use of the plant, lobelia was imported to Europe, where it failed to relieve the symptoms of the Europeans. The Mesquaki used lobelia roots as love charms.

Caution: The juice of the lobelia plant is considered toxic.

Bugleweed, Water-Horehound (*Lycopus* spp.) **Lamiaceae** - Mint Family

Parts used: Root, plant

Medicine: A plant tea = internally as a sedative ("one of the best narcotics in existence"), for diarrhea, dysentery, diabetes, cough, fever, "inflammatory diseases of drunkards," bleeding in the lungs, stomach, and bowels, fast pulse ("lowers the pulse like digitalis without side effects"), hyperthyroidism, throat infection, and goiter. Plant tea = both internally and externally as a styptic and astringent.

Food: Roots, called "crow potatoes," = dried, boiled and eaten by the Ojibwe.

Other uses: Roots of some species = dye.

Chemistry: Experiments suggest that leaf extracts have positive effects on hyperthyroidism. It is considered anti-spasmodic, nervine, and sedative.

Wild or Field Mint (*Mentha arvensis* var. *canadensis*) **Lamiaceae** - Mint Family

Parts used: Plant, leaf

Medicine: Native Americans steeped mint leaves in water = flatulence, colic, indigestion, nausea, pleurisy, coughs, colds, fevers, sore throat, and headaches, as a tonic for the blood, and to strengthen the heart. Mixed with two other mint species by the Menominee = pneumonia. The whole plant = sweat baths.

Food: Roasted mint leaf = food, seasoning for stew. Leaf = a beverage tea and a flavoring in other beverages.

Other uses: Mint leaves = deodorizers and fumigants for dwellings, ingredient in hair oils. Animal traps were boiled in mint to disguise the scent of blood.

Lore: Native Americans had a long history of using mint medicinally, so the small bottles of concentrated peppermint oil brought by the white explorers and traders were immediately perceived as a superior product. They became an important trade article, and the distinctive blue or green peppermint bottles are common in archaeological excavations of Indian villages from the mid-1700's to mid-1800. Mint leaves were chewed and placed on the body to improve one's love life.

Bogbean, Buckbean (*Menyanthes trifoliata*) Menyanthaceae - Buckbean Family

Parts used: Root, leaf

Medicine: A tea of the dried leaf or root = fever, rheumatism, liver ailments, gout, scurvy, dropsy, worms, and skin diseases, and as a tonic to aid digestion. It is astringent and styptic.

Other uses: In Sweden, historically, two ounces of the leaves of this circumboreal species were used per pound of hops in brewing ale and beer.

Chemistry: Buckbean contains *phenolic acid*, which may account for its bile-secreting, digestive, and tonic uses.

Caution: The fresh plant may cause nausea.

Other names: Marsh Trefoil, Marsh Clover

Wild Bergamot, Horsemint (*Monarda fistulosa*) Lamiaceae - Mint Family

Parts used: Root, leaf, flower, oil

Medicine: Leaf or root tea = digestive ailments, cholera, colds, fevers, congestion, nosebleed, whooping cough, insomnia, heart trouble; promoted sweating in measles, and as a stimulant following childbirth. Root and flower, taken together = expel worms, and flower tea = relieve colds and coughs. Plant infusion = cardiac stimulant by the Winnebago. Bergamot root = chewed to treat swollen glands in the neck. Pounded bergamot leaves = externally on pimples, headache, burns, insect bites, and stings; leaves steeped in a bath = chills. Chewed leaves = inserted in the nostrils to alleviate headaches or put under bandages on wounds as a styptic. Leaves, wrapped in a soft cloth, = laid on sore eyes overnight. The Ojibwe inhaled the steam from boiling dried leaves or from bergamot oil = bronchial ailments.

Food: Bergamot leaves = beverage tea by some American Indians. Settlers adopted this use after the Boston Tea Party. The leaf = a seasoning and a preservative when cooking meats.

Other uses: Bergamot oil was an ingredient in a hair pomade.

Chemistry: Bergamot leaves contain high concentrations of *carvacrol*, a substance that is considered anesthetic, anthelmintic, anti-oxidant, anti-inflammatory, and diuretic, and *thymol* which is antiseptic and antibacterial.

Bullhead or Pond Lily (*Nuphar variegata*) Nymphaeaceae - Water-lily Family

Parts used: Rhizome, seed

Medicine: Native Americans used a rhizome tea = blood diseases, chills with fever, heart trouble, and gum and stomach inflammations. Mashed, boiled rhizome = poultice for cuts, sores, ear infections, skin cancers, and rheumatism. Cut, grated or powdered rhizome = externally on swelling, boils, and skin inflammation. Dried, powdered rhizome = a styptic by the Sioux.

Food: Bullhead lily seeds = eaten poached, roasted, popped like popcorn, or dried and stored. The starchy rhizome of the early-blooming *N. variegata* = prepared like potatoes (a seventeenth century journalist commented that the root “tastes like sheep’s liver when well boiled.”). Native American women collected rhizomes by wading or diving for them. Rhizomes of other species, like the later-blooming *N. advena*, are not edible.

Lore: Bullhead lily was a folk remedy for impotence. Its rhizomes are favored by moose, which some Native Americans hunted by closing in while the moose grazed with its head underwater. The Menominee believed that the bullhead lily was a powerful medicine that belonged to the Underneath Spirits and that it made the fogs that float over a lake.

Other names: Spatterdock Lily, Yellow Pond Lily

Common Evening-Primrose (*Oenothera biennis*)

Onagraceae - Evening-primrose Family

Parts used: Root, plant, shoot, leaf, flower, seed

Medicine: A root tea = obesity and intestinal pain. Chopped root, boiled with honey = soothing, anti-spasmodic cough syrup for asthma, whooping cough and hiccups. Leaf tea = stomach aches. Root poultice = piles, bruises, and sore muscles; root = rubbed on muscles in order to increase an athletes’ strength. Crushed leaf = externally on wounds. Plant soaked = poultice on bruises and a lotion for skin disease.

Food: The leaf, shoot, flower, and seeds = eaten; the first-year root tastes “peppery but palatable” by some accounts, and “sweet” or “nutty” by others. Cooking the root for several hours in two waters modifies its strong taste.

Lore: In 1614, evening primrose from America was introduced to Europe, where it was quickly adopted as a food plant.

Chemistry: Evening primrose seed contains *gamma linolenic acid* (GLA) which is anti-inflammatory and analgesic and which may benefit acne, alcoholism, obesity and schizophrenia. Research suggests that the seed oil is effective in treating burns, asthma, migraine, inflammation, some eczema, PMS, diabetes, arthritis, and alcoholism. Seed also contains *tryptophan*, available as a non-prescription sedative.

Other names: Coffee Plant, Fever Plant, Evening Star

Broad-Leaved Plantain (*Plantago major*) Plantaginaceae - Plantain Family

Parts used: Root, leaf, seed

Medicine: Leaf tea = tonic, for cough, diarrhea, dysentery, and lung and stomach ailments. Seeds = internally as a worm remedy and a laxative - the source of commercial *Metamucil* is a plantain relative. Plantain leaf tea = externally on burns, wounds, scalds, and on stings and bites of insects, nettle, and poisonous snakes. The

Menominee applied heated leaves to swellings. Fresh, pounded leaves = poultice on rheumatism, bruises, sprains, sores, minor infections, and a variety of skin problems including poison ivy rash, where it was said to stop the itch and to curtail further spread of the rash. Plantain leaf juice, dropped into the ear = earache (some said the treatment made hearing more acute). Crushed seeds = placed on sores. Plantain leaf, bound to sore feet = relief during a long march. Plantain root tea = mouthwash for toothache.

Food: Nutrient-rich plantain leaf = fresh or boiled spring greens. Dried leaf = a tea substitute.

Lore: The powdered root was carried as a charm against snakebite. Plantain and several other introduced plants earned the name “White man’s foot” because they followed in the footsteps of the settlers.

Chemistry: Plantain leaf contains *potash*, *potassium*, *wax*, *pectin*, *resin*, and *citric* and *oxalic acids*; they have proven anti-microbial action and are said to speed up healing.

May-Apple, Wild Mandrake (*Podophyllum peltatum*)

Berberidaceae - Barberry Family

Parts used: Root, plant, fruit

Medicine: Both the Native Americans and settlers drank a root tea = a strong purgative, liver cleanser, vermifuge, emetic, and to cure jaundice, incontinence, fever and syphilis. May-apple was sometimes employed as a purge before religious ceremonies.

Food: The fruit, edible (according to most, but not all, references) only when completely ripe and best picked as the plant is withering, was described by some as vaguely lemony or insipid and by others as tasting like pawpaw or strawberries. Fruit = eaten fresh or mashed and dried into cakes as travel foods. Mashed fruit = mixed with Madeira and sugar for a fine potable during the Civil War.

Other uses: The Menominee boiled the plant in water and applied this liquid to potato plants to kill potato beetles. Potatoes, a New World plant from South America, were brought to Europe and then back to the New World and were introduced to Woodland Indians. Potato beetles, native to the American west, took advantage of the settlers’ kitchen gardens to hopscotch from the Rockies to the Atlantic between 1854 and 1874. Corn seeds were soaked in a May-apple solution before planting in order to encourage germination and discourage pests.

Lore: New York governor DeWitt Clinton listed an increased commerce in May-apple as one of the positive effects of building the Erie Canal. May-apple was reputed to be used by Native Americans as a homicide and a suicide plant. An observer in the early 1700’s noted that “They [women] are very subject to poisoning themselves at the least grief that betakes them: the men also poison themselves sometimes. To leave this life they use the root of the hemlock or of citron [may-apple], which they swallow.” May-apple root was formerly an ingredient in “Carter’s Little Liver Pills.”

Chemistry: May-apple root and resin contain *podophyllotoxin*, which prevents and inhibits cell division. Compounds derived from it are used medicinally today for malaria, small-cell lung cancer, venereal warts, childhood leukemia and some brain tumors.

Caution: The root, stem, and leaf are poisonous; the root may be allergenic.

Other names: Citron, Wild Lemon, Raccoon-berry, Pomme de mai

Bloodroot (*Sanguinaria canadensis*) Papaveraceae - Poppy Family

Parts used: Root, plant, juice

Medicine: A root tea = fever, asthma, rheumatism, bronchitis, laryngitis, coughs, colds, jaundice, rattlesnake bite, and sore throat. Tiny amounts of the fresh root = an appetite stimulant. Powdered root, fresh or dried = externally on skin eruptions, cuts, warts, ringworm, poison ivy, and slow-healing sores. It was said to draw out slivers and was considered somewhat anesthetic. The caustic root juice = warts, an application that corrodes and destroys tissue and produces a mass of dead cells. The Mesquakie chewed the root and spit the juice on burns; juice from the stem = warts and fungal growths. The Ojibwe squeezed the (terrible-tasting) root sap onto a piece of maple sugar and held it in the mouth to treat sore throats; pioneers also consumed a drop of juice on a sugar lump for coughs and colds. The whole plant, including the root = expectorant in small doses, nauseating and emetic in larger doses. Bloodroot was used to induce vomiting in religious ceremonies.

Other uses: Dried root = yellow and orange dyes; the sap = decorative stain for clothing and baskets and for the skin. Root = insect repellent.

Lore: Indian women selected to share overnight quarters with Capt. John Smith in the Plymouth Colony reportedly painted themselves beforehand with bloodroot. The Winnebago name for bloodroot means “to make the gourd red.”

Chemistry: *Sanguinarine*, a chemical in bloodroot with antiseptic and anesthetic properties was used in some commercial toothpastes to inhibit plaque. There are some claims that the juice, actually a *latex*, is effective against mild skin cancer.

Caution: Internal use of bloodroot is considered very dangerous. The root is considered poisonous, and one author reported experiencing tunnel vision from nibbling it (*sanguinarine* is reputed to cause glaucoma). Eating the root was reported to cause abortions. Powdering the dried root for use in dyes often affected the nose and throat of the worker. Like other members of the poppy family, bloodroot contains narcotic *opium-like alkaloids*.

Other names: Red-root, Puccoon, Tetterwort, Sweet Slumber

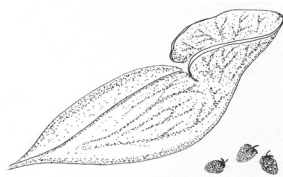
Purple Pitcher Plant (*Sarracenia purpurea*)

Sarraceniaceae - Pitcher Plant Family

Parts used: Root, plant, leaf

Medicine: Native Americans took pitcher plant root infusions = smallpox and claimed that its use lessened the duration and severity of the disease and the subsequent scarring. Pitcher plant tea = liver and lung ailments, dyspepsia, fever, chills, spitting up blood, as a childbirth aid, a diuretic, and a laxative. A tea of dried leaf = fever, chills and shakiness. Pitcher plant tea = to bring forgetfulness of sorrows.

Other uses: Pitcher plant leaves were used by Native Americans as drinking cups, children's toys, and containers for berries; sometimes the outside was inscribed like scrimshaw. Its shape was copied in basket decorations.



Pitcher Plant leaf used as a drinking cup, berry basket and children's toy.

Lore: The use of pitcher plant to treat smallpox was endorsed enthusiastically in the early 1700's by Dr. Sarrazin of Quebec, whose account so impressed Linnaeus that the plant was named after him. Its efficacy was generally discounted by other white doctors. Pitcher plant was a symbolic plant for medicine men in training – just as the leaf kept the insects that fell into it, so drinking its liquid would help their minds retain the knowledge acquired. A Michigan man who lived to the age of 125 attributed his longevity to drinking the liquid from pitcher plant leaves.

Other names: Frog-leggings, Whip-poor Will's Shoes

Bittersweet Nightshade (*Solanum dulcamara*) Solanaceae - Nightshade Family

Parts used: Leaf

Medicine: Native Americans mixed nightshade leaves with grease = poultice on sores, eczema and psoriasis. Traditional European uses = internally as a diuretic, laxative, pain killer and narcotic, and externally on skin sores and inflammations, warts, leprosy, eczema, cancers and felons.

Lore: Berry juice of a related plant, Belladonna ("beautiful woman"), was used by some European women during the Renaissance to dilate their pupils - dark, seductive eyes being a standard of beauty at the time. One of a group of plants brewed by witches "in the shade of the night," nightshade was an ingredient in a "flying ointment" that witches rubbed on their bodies. The presence of the narcotic chemical *solanidine* – related nightshade species contain *atropine* – may explain what kind of "flying" they did.

Chemistry: Nightshade's significant tumor-inhibiting activity is due to *beta solamarine*; it is also a steroid precursor.

Caution: Bittersweet nightshade fruit can be toxic to livestock and small children.

Other names: Bittersweet or Purple Nightshade, Felonwort

Canada or Common Goldenrod (*Solidago canadensis*) Asteraceae - Composite

Parts used: Root, leaf, flower

Medicine: Leaf tea = fever, and flower tea = fever, sore throat, kidney stones, tuberculosis, hay fever and snake bite. An infusion of root and flower = pain in the side. Goldenrod root and root teas = poultice on cramps and burns. Boiled leaf = lotion for wounds and ulcers; and powdered leaf = poultice on toothache and protective dressing on wounds. Crushed flower = chewed for sore throat.

Other uses: Flowers of many species = yellow dye. Goldenrod = flavoring for medicine.

Lore: Goldenrod was part of a combination of herbs employed by the Mesquakie to wash a baby who had not learned to talk or laugh, so that the baby "would grow up with its faculties intact."

Chemistry: Scientific research suggests that the leaf has antiseptic qualities.

Dandelion (*Taraxacum officinale*) Asteraceae - Composite Family

Parts used: Root, leaf, flower, sap

Medicine: Root tea = lactation, heartburn and chest pain by the Mesquakie. Dandelion = traditional blood medicine, diuretic, tonic, laxative, for liver and gallbladder

problems, weakened digestion, dyspepsia, and to promote appetite. Milky sap = warts and pimples. Tea of dried leaves = laxative.

Food: Root = eaten in fall, raw or dried, and young leaf = eaten in spring. Flower = wine, and root = non-caffeinated coffee substitute. The Iroquois boiled dandelion leaves with fatty meats. Dandelion is raised commercially for its root.

Lore: Dandelion has been an important food, beverage and medicine plant for millennia; it was introduced to America in 1620 as a medicinal plant. “*Taraxacum*” means “disorder” or “disquiet”, and “*officinale*” is a reference to its medicinal status. Its juice is considered diuretic – a children’s game that involved splitting its stem with the tongue resulted in ingesting enough juice to cause bed-wetting and in an old English saying, “Pick a dandelion and wet the bed” (and in the common names “Piss-a-bed” and “Pee-a-bed”) (Werner 1988).

Chemistry: The leaf and root contain weak anti-inflammatory compounds. Experimentally, the root stimulates weight loss and is mildly antibiotic for yeast infections. Leaves and flowers are rich in *vitamins A* and *C*.

Caution: Millsbaugh lists symptoms of dandelion overdose as agitation, pains, headache, insomnia, white tongue, and frequent urination. Latex in the stems and leaves caused contact dermatitis in susceptible people.

Stinging Nettle (*Urtica dioica*) Urticaceae - Nettle Family

Parts used: Root, stem, stem fiber, shoot, leaf, seed, juice

Medicine: When this species was introduced by settlers, its European plant lore merged with that of the Native Americans. Seeds = cough and shortness of breath. Nettle leaf = poultice on boils, sores and heat rash. Nettle juice = externally for arthritis and for the sting of nettle. Jewelweed (*Impatiens capensis*) juice also provides relief from nettle encounters. A leaf pressed by the tongue against the roof of the mouth = nosebleed. Nettle is a traditional European blood purifier and blood builder, diuretic, and astringent = for anemia, ague, diabetes, gout, glandular diseases, rheumatism, urinary problems, uterine hemorrhage, internal bleeding, to enhance coagulation and to aid in formation of hemoglobin.

Food: Young, boiled shoots, rich in protein, minerals, and *vitamins A*, *C*, and *D* = eaten like spinach (the “sting” is destroyed by cooking). Dried, powdered nettle = a flour and a stew thickener. Nettle tea can curdle milk in cheese-making.

Other uses: Stem fiber, woven = a linen-like material eight times as strong as cotton. The fiber, extracted from the stem by soaking, then rolling or pounding the stem, was used as a thread to weave clothing, table linens, tents, and covered wagon covers, and was twisted into twine for fishing lines and hobbles for horses. Stem fiber of the false nettle (*Boehmeria cylindrica*) = bow strings. Nettle root = a yellow dye.

Lore: During World War II, nettle was cultivated for its fiber. A folk remedy for chronic rheumatism called “urtication” or “flogging with nettles” rationalized that the body’s formation of histamines in response to chemicals injected by the stinging nettle



Ojibwe flat bow made of hickory. Bowstrings were sometimes made of nettle fiber. Redrawn from Tunis, 1959

benefited rheumatism; some people subject themselves to honeybee stings for the same reason. A wash of nettle water was applied externally to enhance the complexion and as a hair-growth stimulant.

Chemistry: Contemporary scientific research suggests that chemicals found in nettles aid blood coagulation, depress the central nervous system, and may be beneficial in treating some kidney, gall bladder and prostate conditions.

Mullein (*Verbascum densiflorum*) *Scrophulariaceae* - Snapdragon Family

Parts used: Leaf, flower, seed, oil

Medicine: Mullein leaf = cough medicine effective for both people and cattle; a leaf tea = dysentery, colds, chest congestion, and a mild sedative said to induce sleep. Leaves = poultice on ulcers, piles and tumors. Smoke from burning leaves, inhaled = cough, asthma, and bronchitis; hot water poured over leaves and flowers produced a steam = asthma and nasal congestion. Mullein's hairy leaf "rubs the pain" out of nettle, sunburn and other skin irritations. The early Swedish settlers wrapped mullein leaves around their feet and arms when they suffered from ague. Mullein oil, distilled from fresh leaves, was rubbed on bruises, sore ears and frostbite and was a favorite treatment for deafness due to excessive earwax.

Other uses: Dried leaves = smoked as a tobacco substitute. Native Americans adopted from the early settlers the practice of insulating their moccasins and shoes with a layer of thick, hairy mullein leaves. Due to their *rotenone* and *coumarin* content, the seeds = effective fish poison in ponds, (a method of capturing fish still practiced). Mullein flowers = brown, green, or yellow dye, depending on the other ingredients used; yellow mullein dye has been used for centuries as a hair dye.

Lore: Mullein has been called "candlewick" because the leaves made good lamp wicks, and "Quaker rouge" because Quaker women rubbed their cheeks with the leaves to produce a "blush" when their suitors visited. Like yarrow (*Achillea millefolium*), mullein had folk use in spells both to repel and attract witches, demons and magic.

Chemistry: Mullein leaves, high in soothing mucilage, are anti-inflammatory, expectorant, and anti-viral. The compound *verbascoside* is immunosuppressant, anti-tumor, anti-bacterial and antiseptic.

Caution: Mullein leaves may irritate skin (not recommended as a wilderness toilet paper substitute) and contain *rotenone* and *coumarin*.

Violet (*Viola* spp.) *Violaceae* - Violet Family

Parts used: Root, plant, leaf, flower

Medicine: Native Americans used many violet species interchangeably. The Ojibwe took a root decoction = "pains near the bladder" and as an expectorant for coughs and bronchitis. Tea of the dog violet (*V. labradorica*) = heart problems, while the root of an unspecified yellow violet = sore throat and heart disease. Mixtures of violet root and leaf induce vomiting, and the leaf = poultice on boils and swellings. In historic European use, a concoction made from violets was drunk to treat overindulgence of food and drink and was administered as a laxative and as an emetic. Crushed plant = poultice on burns, wounds, impetigo, scabies, and pain from cancerous growths,

especially in the throat. A violet flower tea = inflammation of the lungs and side, hoarseness, to “allay the extream [sic] heat of the liver, kidneys and bladder” (Erichsen-Brown 1979), and for agues.

Food: Violet leaf = eaten raw or cooked; the dried leaf = steeped for a beverage tea.

Lore: A violet wreath on the head “drove away vipers”.

Chemistry: Violet leaf is rich in *vitamins A and C*. The *salicylic acid* found in violets is an active disinfectant and tissue solvent that was applied externally in ointments to soften hard skin, corns and warts; it is also fungicidal.

Herbaceous Monocotyledons

Water Plantain (*Alisma subcordatum*) Alismataceae - Arrowhead Family

Parts used: Root, leaf, seed, young plant

Medicine: Root tea = lame back, lung and kidney ailments, and indigestion. Root = poultice for bite of rabid dogs. Powdered seeds = astringent and styptic. The acrid leaf = poultice for bruises and swellings. Although water plantain leaf is irritating if rubbed on the skin, a 17th century reference advises edema sufferers to “lay them whole to legs to draw out water between skin and flesh” (Coffey 1993).

Food: Root = edible after cooking or thorough drying. Cooked young plant = edible and salty-tasting.

Chemistry: Experiments suggest that water plantain has therapeutic properties including diuretic effects for kidney and other ailments; and that it may lower blood pressure, glucose levels and fat levels in the liver.

Other names: Water-suck Leaves, Scurvy-leaves, Mad-dog-weed

Wild Leek (*Allium tricoccum*) Liliaceae - Lily Family

Parts used: Bulb

Medicine: The Ojibwe made an emetic decoction that was “quick in its effect.” Crushed bulb = insect stings and bites.

Food: Leek bulb = a food and a flavoring, often cooked with venison

Lore: The shoreline plain at the south end of Lake Michigan where leeks grew in abundance was called by the Menominee “shika ‘ko” [Chicago] or “skunk place” because of the leek’s odor.

Chemistry: Leeks are rich in *phosphorous* and *sulfur*, *vitamins A and C* and protein.

Jack-in-the-Pulpit (*Arisaema triphyllum*) Araceae - Calla or Arum Family

Parts used: Corm, root, fruit, seed

Medicine: Dried corm = tea for colds, dry cough, asthma, laryngitis, bronchitis, colic, bowel problems, headache, fever, including malaria and debilitation caused by typhoid fever. Corm infusion = contraceptive by Iroquois women. A tea of powdered corm mixed with Common milkweed (*Asclepias syriaca*) = produce temporary sterility in women by Mohawk. Corm = counterirritant poultice for rheumatism, sores, boils,

abscess, ringworm, and swelling from snakebite. Powdered corm dusted on the head = headache and as a counterirritant for rheumatism. Root decoction = poultice on sore eyes.

Food: Dried corm = sliced and eaten, or peeled, shredded, pounded, cooked with venison, and ground into a “cocoa-like” flour. Dried berries = eaten.

Other uses: A mixture of corm and fruit was used to kill insects. Jack-in-the-Pulpit also found its way into the laundry, where it served as a starch for gentlemen’s ruffled shirt collars. Gerard reported that “The most pure and white [laundry] starch was made from the roots of the Cuckowpint, but most hurtful to the hands of the Laundresse that hath the handling of it, for it choppeth, blistereth and maketh the hands rough and rugged, and withal smarting” (Gerard 1994).

Lore: Mesquakie shamans used Jack-in-the-Pulpit seeds as a diagnostic portent. If, placed in water, seeds spun four times and then sank, there would be a cure; any other reaction boded ill for the patient. Rafinesque heard that “the Indians can handle rattlesnakes with impunity, after wetting their hands in the milky juice of the root of this plant.” According to the Doctrine of Signature, the plant was considered an aphrodisiac. It was called “memory-root” because anyone who nibbled the raw plant was sure to remember it.

Caution: Arums contain *calcium oxalate* crystals that cause burning and swelling in the mouth and throat if eaten, but these become harmless after the plant is dried for five to six months before cooking.

Other names: Indian Turnip, Starchwort, Hopnis, Cuckowpint

Small Yellow Lady’s-Slipper (*Cypripedium parviflorum*)

Orchidaceae - Orchid Family

Parts used: Root

Medicine: Root tea of yellow, pink (*C. acaule*), and showy (*C. reginae*) lady’s slipper = mild and safe non-narcotic sedatives and tranquilizers capable of “causing a sense of mental quiet and lassitude” (Millspaugh 1974), although over-dosing could produce hallucinations. Root tea = worms, epilepsy, insomnia, hysteria, depression, tremors, spasms, nervousness, nervous conditions of women including childbirth, and “mental depression due to sexual over-indulgence” (Clymer 1905). Mixed with other herbs = tuberculosis and kidney disease. Native Americans moistened the dried, powdered root into a paste = toothache. A concoction made with the root of showy ladies-slipper (*C. reginae*) “and its fungus” = poultice for a toothache or for a decayed tooth that was, reputedly, so strong that it sometimes drew out the nerve of the tooth! A journal from 1859 recorded that “the root of yellow lady’s slipper can always be found in drugstores” (Erichsen-Brown 1979).

Lore: The Menominee used the root to bring dreams of the supernatural.

Caution: The fresh root and the hairy leaves and stems of the lady’s slippers may cause dermatitis.

Other names: American Valerian, Yellow Indian-shoe, Nerve-root, Squirrel-shoe

Northern Blue Flag (*Iris versicolor*) Iridaceae - Iris Family

Parts used: Root, leaf

Medicine: The root = powerful cathartic, often used before religious ceremonies, cultivated by south-eastern tribes for this purpose. Root = dropsy, syphilis, hydrophobia, and chronic rheumatism. Crushed, boiled root = poultice for skin infections, bruises, rheumatism, felons, bodily pain, sores, sore eyes, and, mixed with water or saliva, for earache. Iris is “among the most widely used of herbal medicines” (Werner 1988).

Other uses: Leaf = green dye, fiber for weaving mats and fishing nets.

Lore: The Ojibwe carried pieces of root as protection against snakebite and rubbed the pieces to produce an odor, believing the scent protected them (Eastman 1995).

Caution: Irises are considered poisonous.

Common Reed Grass (*Phragmites australis*) Poaceae - Grass Family

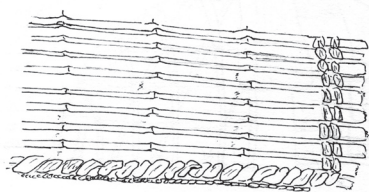
Parts used: Rootstalk, shoot, stalk, sap, fiber, seed

Food: Native Americans ground seeds = flour. Young shoot, powdered = heated and eaten like marshmallows. Rootstalk and young shoot = starchy vegetable. A sap from the stem = candy-like gum. Sugar from the stem = a sweet beverage. Seeds = reed porridge in Europe;

Other uses: Reed stalk = berry-drying frames, woven mats and screens, and, reinforced by hardwood twigs inserted in the hollow reed, arrow shafts. Reed fiber = rope and nets. Hollow stalks stuffed with tobacco to make re-usable cigarettes have been found in archaeological sites in Arizona, where reed stalks were also used as roofing insulation. In the Old World, plant = a source of pen points, livestock fodder, and cellulose, a traditional English roof thatching material, a bank stabilizer in Europe, and a land reclamation plant in Holland.

Lore: Eastman (1995) suggests that this cosmopolitan plant of rich fens may be the most widely distributed seed plant in the world. Reed grass is so abundant in marine and freshwater wetlands that research is being done to find native “Phrag blockers” that can out-compete phragmites in mid-Atlantic coastal marshes.

Other names: Marsh Reed, Reed Grass, Bog Reed, Phragmites



Section of a reed or rush mat. Used as bedding, wall and floors for shelters, and capes. Often sewed with basswood fiber. Drawn from Miles, 1963.

Solomon's Seal (*Polygonatum pubescens*) Liliaceae - Lily Family

Parts used: Rhizome, shoot

Medicine: Rhizome tea = physic, blood purifier, for indigestion, lung ailments, “female weakness,” sleep problems, poison ivy, and “general debility.” Fresh rhizome = poultice on painful joints, piles, sore eyes, black eyes, bruises, poison ivy, wounds, boils, carbuncles, and skin inflammations. Steam from rhizome tea = inhaled for headache. The Menominee mixed the dried, crushed root with cedar twigs (*Thuja occidentalis*), and burned it as a smudge to revive unconscious or dying patients.

Food: Young shoot = eaten like asparagus, and dried root, ground = flour.

Lore: Of the properties of a related European species, Gerard commented that “the root of Solomon’s Seal, stamped [pounded] while it is fresh and greene, and applied, taketh away in one night, or two at most, any bruise, black or blew spots gotten by fals or women’s wilfulnesse, in stumbling on their hasty husband’s fists or such like.” According to modern folklore, the plant can increase one’s psychic ability.

Broad-leaved Arrowhead, Wapato (*Sagittaria latifolia*)

Alismataceae - Arrowhead Family

Parts used: Rhizome, tuber, leaf

Medicine: Rhizome or leaf tea = indigestion, tuberculosis, and rheumatism. Rhizome = poultice for wounds and sores, and to stop lactation; rhizome decoction = wash for babies with fevers.

Food: The starchy, egg-sized tubers that form at the ends of long runners from the rhizome were harvested in fall and eaten boiled, roasted, or cooked into gruel; or were dried, powdered and mixed with flour for bread. The Ojibwe dried the thinly-sliced tuber like apples and cooked it with meat. Dried tubers reconstituted with maple syrup reportedly taste like sweet potatoes. Native American women collected the tuber by wading into the cooling waters of lakes and ponds in fall and loosening the tuber with bare toes. The Ojibwe appropriated arrowhead tubers from caches of foods stored by muskrats.

Other names: Muskrat-potato, Duck-potato

Skunk Cabbage (*Symplocarpus foetidus*) Araceae - Calla or Arum Family

Parts used: Rhizome, root hair, leaf, odor

Medicine: Dried rhizome = cramps, hysteria and “fits,” scurvy, hay fever, convulsion, toothache, asthma and other lung problems by Native Americans. A dried leaf tea or infusion = a mild sedative. Dried, powdered rhizome was moistened and sprayed onto wounds or made into a salve for ringworm, rheumatism, and itchy skin. Skunk cabbage rhizome and leaf = poultice on wounds, ulcers, blisters, herpes, sores, swellings, and tumors; it was said to draw out splinters. The odor, inhaled = headache and congestion. The Mesquakie boiled the rhizome to make a mouthwash = sore gums and gum disease. Fine root and root hairs = compressed on toothache. The Menominee applied both root hairs and powdered rhizome as a styptic. Powdered rhizome mixed with other herbs = a tattoo solution that was supposed to act as both a cure and a talisman against the return of disease.

Food: Dried leaf = added to soup and stew, and the dried rhizome = ground into a “cocoa-like” flour. The fresh leaf may be eaten as an emergency food only after it is boiled in successive changes of water to diminish the *calcium oxalate* crystals.

Other uses: Leaf = smoked like tobacco. Skunk cabbage was reportedly used both as a flavoring for other medicines and as a deodorant.

Caution: Arums contain *calcium oxalate* crystals that cause burning and swelling in the mouth and throat if eaten. The fresh root of skunk cabbage is toxic but rarely fatal because it’s so noxious that it would be hard to eat a lethal amount.

Large-Flowered Trillium (*Trillium grandiflorum*) Liliaceae - Lily Family

Parts used: Rhizome, rhizome bark, young leaf

Medicine: Trillium rhizome = cramps, female problems, and to control bleeding in childbirth. The Ojibwe injected a white trillium decoction beneath the skin with needles fastened to a wooden handle = “dizzy headaches,” neuralgia, and rheumatism. Boiled rhizome bark = sore ears. Freshly dug rhizome = externally on eye inflammation and swelling by the Menominee. Rafinesque was enthusiastic about its external use on tumors and “putrid ulcers,” and reported that chewing the rhizome caused salivation, tearing and “heat in the throat,” and then “a sensation of coolness over the whole system” (Erichsen-Brown 1979).

Food: Young leaf = salad green.

Lore: The rhizome was chewed to “cure instantly the bite of rattle-snakes, both in men and in cattle.”

Other names: Birthroot, Trinity-flower, Squaw-root

Broad-Leaved or Common Cattail (*Typha latifolia*)

Typhaceae - Cattail Family

Parts used: Rhizome, shoot, leaf, flower heads, pollen, seed, fluff

Medicine: A rhizome decoction = cramps, diarrhea, and fever, and young flower head, eaten = diarrhea. The jelly-like, pulverized rhizome = poultice on wounds, sores, inflammation, carbuncles, boils, burns, and scalds. Fluff from mature flower head = burns and to prevent chaffing in babies.

Food: Some part of the cattail is edible year round. The starchy rhizome is nutritious from fall to spring. With its outer layer removed, the rhizome's starchy core = eaten raw or roasted. Flour is made by separating the starch from the rhizome. New buds and shoots from the rhizomes = a less fibrous food than the rhizome, itself. Bright, yellow pollen = a substitute or supplement for wheat flour; the green female flower head = steamed or boiled, eaten like corn. Roasted seeds are edible.

Other uses: The Menominee constructed rain and snow-repellant coverings for their winter lodges from cattail leaves. Mats woven from cattail leaves were often sewn together with fiber from nettle (*Urtica* sp.) or basswood (*Tilia americana*). The Ojibwe wove cattail leaves into duck-shaped, floating children's toys. Cattail fluff = a diaper material, an insulation and padding in baby quilts, moccasins, and cradle boards. Some Forest tribes dried newborns in a pile of cattail fluff. Settlers used the fluff as a quilt stuffing (it got lumpy when used in mattresses) and built an industry around collecting leaves for caning chair seats. Cattail leaves, twisted together = padding under horse collars and rope used by colliers to hold barrels together. Pounded rhizome = a jelly-like caulking material for leaky boats. In 1830, Rafinesque wrote that cattail “pollen was



Child's doll made of cattail leaves. Drawn from Densmore, 1974.

equal to Lycopodium in medicinal use and pyrotechny” (the spores of club mosses, *Lycopodium* spp., were the original flash powder for cameras).

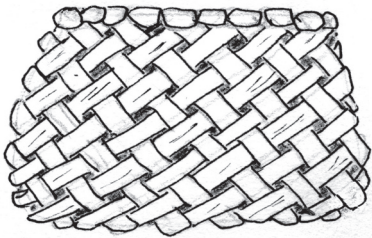
Lore: Cattail fluff used as a “war medicine” was thrown in the face of the enemy to blind him. Despite the attitude of early settlers that wetlands were impediments to agriculture and breeders of disease, they were so important to American Indians that intertribal wars were fought over them. Cattails certainly provided a good reason to fight.

Chemistry: Contemporary research suggests that the food value of cattail approaches that of corn and rice.

Wild Rice (*Zizania aquatica*) Poaceae - Grass Family

Parts used: Seed

Food: The importance of this vital cereal food to the Menominee (the Wild Rice People), Winnebago, and Ojibwe cannot be overstated. Wild rice was cultivated, with distinct strains deliberately isolated in different lakes. Seeds were collected by beating the



Ojibwe cedar bark bag for wild rice. Slippery Elm fiber was also used. Drawn from Taylor, 1992

ripened seed heads over an open canoe. After parching, beating and winnowing, the grain was boiled, often with blueberries, and sweetened with maple syrup. Wild rice was also used as thickening in soups.

Caution: Infrequently, an ergot fungus may grow in place of some of the seeds, contaminating them.

Non-flowering Plants

Field and Water Horsetails (*Equisetum arvense* and *fluviatile*)

Equisetaceae - Horsetail Family

Parts used: Root, plant, stalk

Medicine: A plant tea = diuretic, for urinary tract infection, gonorrhea, internal or external bleeding, childbirth and post-partum care. Root tea = dropsy and syphilis. Ashes of the plant = internally for sour stomach and dyspepsia, externally on bad burns or mouth sores. Plant tea mixed with horsemint (*Monarda punctata*) = constipation and stomach ailments. Plant = astringent poultice on eye and skin irritations, sores and putrid wounds, and burned as a disinfectant. The boiled stalk = a flea, louse, and mite shampoo by Western tribes. A folk remedy for gout, horsetail was also considered a “re-mineralizer” to restore the body’s mineral balance.

Food: Young, fertile stalk cooked like asparagus or fried in butter. Root = eaten. Ancient Romans used the plant as a tea and a thickening agent.

Other uses: The plant = yellow dye. Stalk = scouring/sharpening arrows by some western tribes; settlers tied a bunch of stalks together = scouring pads to brighten tins, floors, woodenware. Stalks of taller species = mats, brooms, wicks, and thatch. Jointed stalk = perennial toy for children, its uses include home-made pan pipes. Horsetail is still used as a sanding device to shape reeds of oboes and clarinets.

Lore: A whistle made from stem was said by the Winnebago to give the ability to summon snakes. Pieces of stem were carried by some Native Americans as good luck charms. Because horsetail species have an affinity for gold in solution and concentrate it in their roots, they have been used in assays for gold. Equisetums were the first vascular plant to sprout in the ash after the eruption of Mt. St. Helens.



Whistle - Central Great Plains Drawn from photo. Taylor 1992.

Chemistry: Rich in calcium, it has been suggested as beneficial in healing broken bones. Horsetail may be effective against some edema, burns, and wounds and as part of a therapy for urinary tract infections,

Caution: Horsetails illustrate the classic “Tasty vs. Toxic” contradiction seen in researching some plants. For every account of toxicity to livestock, especially horses, there is an eyewitness testimonial to the benefits of using horsetail as winter fodder and for fattening ponies. The fresh plant contains an enzyme that destroys *vitamin B-1* in the body, but cooking inactivates that enzyme. Horsetails may pick up and pass on heavy metals from soil, and high levels of silica can irritate the urinary tract. *Equisetic* acid is similar to *aconitic* acid, a potent and potentially dangerous heart and nerve sedative.

Other names: Pipes, Jointed Rush, Mare’s Tail, Squeaky Noise-weed, Gunbright

Ferns Families - Pteridaceae, Ophioglossaceae, and Osmundaceae

Parts used: Bulb, root, plant, stem, leaf, juice

Medicine: Mucilaginous juice from stem of royal fern (*Osmunda regalis*, Family Osmundaceae) = internally for cough and diarrhea; externally on bruises and broken bones. Plant tea of maidenhair fern (*Adiantum pedatum*, Family Pteridaceae) = expectorant, emetic, cooling, anti-rheumatic, for nasal congestion, asthma, sore throat, fever, flu, pleurisy, and menstrual discomfort. The leaf = poultice for rheumatism. A root poultice of rattlesnake fern (*Botrychium virginianum*, Family Ophioglossaceae) = cuts, sores, bruises, and snake bite (for snake bite, the powdered root was sprinkled on grease from a raccoon or wild cat). Ferns were highly valued by 19th century practitioners, who used them in combination with other plants.

Food: Fiddlehead of the Royal fern family = eaten as a spring green, cooked like asparagus, or as an ingredient in soup and stew. Its bulb, called the “bog onion” or “bulb of Osmund” = eaten and thought to have “tonic” properties because of the bog water it grew in.

Other uses: The matted root of *Osmunda* species was the base in early attempts to propagate wild orchids. Stem of maidenhair fern = hair wash for shiny hair by Woodland tribes, and a decorative fiber in basketry. American maidenhair ferns were considered more potent than their European counterpart and became a trade item for Native Americans.

Lore: A root decoction of rattlesnake fern, sprinkled on the ground = keep snakes out of lodges of Native Americans.

Chemistry: Root extracts of some Wood ferns, (Family Dyopteridaceae) are a source of *aspidia*, a drug used for expelling tapeworms.

Caution: Members of the Wood fern family are not considered edible.

Sphagnum Moss (*Sphagnum* spp.) Sphagnaceae - Sphagnum Moss Family

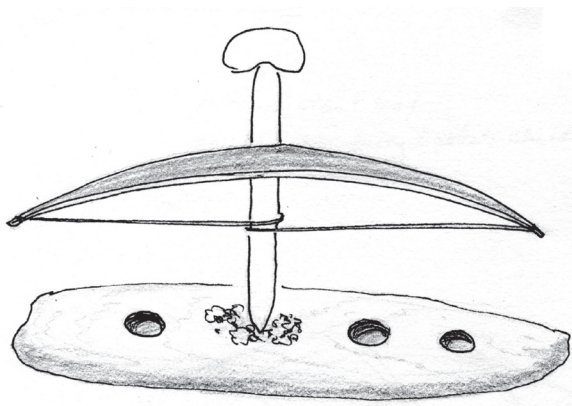
Parts used: Plant

Other uses: Dried sphagnum moss absorbs twenty times its weight in liquid, making it a primitive feminine hygiene product and an absorbent, anti-bacterial diaper material when packed into a cradle board. Some Native Americans stuffed pillows and mattresses with it, and early settlers chinked their log cabins and stuffed their mattresses with sphagnum.

Chemistry: *Sphagnol*, a peat tar distillate, soothes and heals skin ailments like eczema. Sphagnum's acidity prevents bacteria from forming and made it an ideal bandage or wound packing through World War I.

Caution: Its desirable anti-bacterial, probable anti-viral, and according to one source, anti-cancer properties are somewhat offset by the possibility of contracting a pulmonary or a boil-like fungal skin infection, *sporotrichosis*, from being in contact with contaminated sphagnum moss (*sporotrichosis* is also found in contaminated thorny plants and bales of hay).

Bow drill for fire starting. The base, or hearth, that held the tinder was made of cedar. Drawn from Hanson, 1992.



GLOSSARY OF TERMS

- Ague** – any of a number of recurring fevers accompanied by chills and sweating.
- Analgesic** – relieves pain.
- Antibiotic/antibacterial** – inhibits or kills bacteria or other microorganisms.
- Anticoagulant** – thins the blood and slows clotting.
- Anthelmintic** – causes internal worms to be expelled.
- Anti-inflammatory** – reduces inflammation or swelling.
- Anti-spasmodic** – prevents or relieves spasms and cramps.
- Astringent** – causes tissues to contract, harden, or stop seeping.
- Cathartic** – a powerful, thorough laxative or purgative that cleans the bowels.
- Carminative** – causes gas to be released from the stomach or intestines.
- Chilblains** – painful, itchy, recurrent swelling of the skin due to exposure to the cold.
- Contact dermatitis** – an external rash caused by contact with an allergen.
- Counterirritant** – stimulates circulation to an affected area by producing irritation.
- Decoction** – a preparation made by boiling the desired plant part in water.
- Dermatitis** – skin rash.
- Diaphoretic** – encourages sweating.
- Diuretic** – encourages or increases urine flow.
- Dropsy** – an old fashioned term for edema, or fluid retention.
- Dyspepsia** – indigestion, or difficult digestion.
- Eclectic** – a white practitioner open to the potentials of native herbal treatments.
- Emetic** – induces vomiting.
- Erysipelas** – a disease caused by strep, with fever and red, inflamed skin.
- Expectorant** – keeps mucous secretions liquid, allowing them to be coughed out of the lungs.
- Felon** - painful swelling of the deep tissues near the nail of a finger or toe.
- Infusion** – a medicine made by soaking a plant part in hot or cold water.
- Hemostatic** – slows or stops bleeding or hemorrhage.
- Laxative** – causes the bowels to empty.
- Lumbago** – a painful rheumatism of the lower back
- Nervine** – a tranquilizer, sedative, or anti-spasmodic.
- Pemmican** – a concentrated food made by pounding lean, dried meat into a powder, mixing it with hot fat, and cutting it into cakes after cooling. Fruits were sometimes added for flavor.
- Physic** – a medicine, often referring to a cathartic or purgative.
- Poultice** – a soft, moist, warm or hot mass of plant material compressed directly onto the skin or with a cloth between the skin and the poultice.
- Purgative** – cleanses the bowels, often with cramping.
- Refrigerant** – allays thirst, makes fevered or sunburned skin feel cool.
- Scrofula** - a form of tuberculosis that affects bones and lymph nodes and expresses itself with oozing skin abscesses.
- Sedative** – soothes the nervous system.
- Simple** – an herbal preparation with only one ingredient.
- Stimulant** – increases activity of an organ, tissue or organism.

Styptic – checks or stops bleeding by constricting blood vessels; usually an astringent.
Thrush – a fungus or yeast infection of the mouth.
Tonic – helps muscle tissue regain its tone.
Valerian – a tranquilizer, sedative.
Vermifuge – kills internal parasites.

REFERENCES

- Abbe, E. 1981. *The Fern Herbal*. Comstock Publishing Associates, Ithaca, NY.
- Bartram, W. 1955. *Travels of William Bartram*. M. van Doren, ed. Dover Publications, Inc, New York, NY.
- Bezella, D.A. 1992. A preliminary survey of archaeological sites surrounding Cedarburg Bog. *Field Station Bulletin* 25(2): 1-9.
- Berglund, B, and C.E. Bolsby. 1971. *The Edible Wild*. Charles Scribner's Sons, New York, NY.
- Brown, T. 1985. *Tom Brown's Field Guide - Wild Edible and Medicinal Plants*. Berkley Publishing Group, New York, NY.
- Coffey, T. 1993. *The History and Folklore of North American Wildflowers*. Houghton-Mifflin, Boston, MA.
- Clymer, R.S. 1905. *Nature's Healing Agents*. The Humanitarian Society, Quakertown, PA.
- Densmore, F. 1974. *How Indians Use Wild Plants for Food, Medicine and Crafts*. Dover Publications, Mineola, NY.
- Eastman, J. 1993. *The Book of Swamp and Bog*. Stackpole Books, Mechanicsburg, PA.
- Eastman, J. 1995. *The Book of Forest and Thicket*. Stackpole Books, Mechanicsburg, PA.
- Eastman, J. 2003. *The Book of Field and Roadside*. Stackpole Books, Mechanicsburg, PA.
- Elpel, T.J. 2001. *Botany in a Day: Thomas J. Elpel's Herbal Field Guide to Plant Families*. HOPS Press, Pony, MT.
- Erichsen-Brown, C. 1979. *Medicinal and Other Uses of North American Plants*. Dover Publications, Inc, Mineola, NY.
- Foster, S. and J. Duke. 1990. *A Field Guide to Medicinal Plants*. Houghton-Mifflin, Boston, MA.
- Fredlund, G.G, J.R. Brozowski, and J.W. Oh. 1995. A late Quaternary pollen record from Cedarburg Bog, Wisconsin. *Field Station Bulletin*, Vol. 28(2): 11 – 17.
- Folsum, J. *Plant Trivia TimeLine*. www.huntington.org/BotanicalDiv/Timeline.html.
- Gerard, J. 1994. *Gerard's Herbal*. Woodward, M, Ed. Senate (Studio Editions Ltd.), London, England
- Gilmore, M.R. 1991. *Uses of Plants by the Indians of the Missouri River Region*. University of Nebraska Press, Lincoln, NE.
- Gleason, H.A., and A. Cronquist. 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 2nd Ed. The New York Botanical Garden, Bronx, NY.
- Greene, J. D. 1993. *The Chippewa*. Franklin Watts Publishers, New York, NY.
- Harris, M. 2003. *Botanica North America*. HarperCollins Publishers, Inc, New York, NY.
- Hanson, A. 1992. *Indians of Wisconsin and the Surrounding Area*. Published by author.

- Kalm, P. 1966. *Travels in North America*, Vols. I and II. Benson, A.B, Ed, Dover Publications, Inc., Mineola, NY.
- Kindscher, K. 1992. *Medicinal Wild Plants of the Prairie*. University of Kansas Press, Lawrence, KA.
- Krochmal, A, and C. Krochmal. 1973. *A Guide to the Medicinal Plants of the United States*. Quadrangle/The New York Times Book Co., New York, NY.
- Maxwell, J. 1978. *America's Fascinating Indian Heritage*. The Readers Digest Association, Inc. Pleasantville, NY
- Mecker, J.E., J.E. Elias, and J. Helm. 1993. *Plants Used by the Great Lakes Ojibwa*. Great Lakes Indian Fish and Game Commission, Odanah, WI.
- Miles, C. 1963 *Indian and Eskimo Artifacts of North America*. Henry Regnery Company, Chicago, IL.
- Millspaugh, C.F. 1974. *American Medicinal Plants*. Dover Publications, Inc, Mineola, NY.
- Naegele, T.A. 1996. *Edible and Medicinal Plants of the Great Lakes Region*. Wilderness Adventure Books, Davisburg, MI.
- Newcomb, L. 1977. *Newcomb's Wildflower Guide*. Little, Brown and Company, Boston, MA.
- Osinski, A. 1987 *The Chippewa*. Children's Press, Chicago, IL
- Peterson, L.A. 1977. *A Field Guide to Edible Wild Plants*. Houghton Mifflin Company, Boston, MA.
- Pojar, J, and A. MacKinnon. 1994. *Plants of the Pacific Northwest Coast*. Lone Pine Publishing, Vancouver, BC.
- Reinartz, J.A. 1990. Vascular plants of the UWM Field Station area. *UWM Field Station Bulletin*, Vol. 23(1): 1 - 35
- Ritzenthaler, R. E. & P. 1970. *The Woodland Indians of the Western Great Lakes*. Waveland Press, Inc. Prospect Heights, IL.
- Runkel, S.T., and D. Roosa. 1989. *Wildflowers of the Tallgrass Prairie: The Upper Midwest*. Iowa State University Press, Ames, IA.
- Saunders, C.F. 1976. *Edible and Useful Wild Plants of the United States and Canada*. Dover Publications, Inc, Mineola, NY.
- Swerdlow, J.L. 2000. *Nature's Medicines: Plants That Heal*. National Geographic, Washington, DC.
- Taylor, Colin F. 1992. *The Native Americans: The Indigenous People of North America*, Smithmark Publishers, Inc., New York, NY.
- Tunis, E. 1959. *Indians*. The World Publishing Co. Cleveland OH
- Vidler, V. 1976 *American Indian Antiques* A.S. Barnes, South Brunswick, NJ.
- Vitale, A.T. 1997. *Leaves in Myth, Magic and Medicine*. Stewart, Tabori and Chang, New York, NY.
- Weiner, M.A. 1972. *Earth Medicine, Earth Food*. Collier Books, New York, NY.
- Werner, W.E., Jr. 1988. *The Life and Lore of Illinois Wildflowers*. Illinois State Museum, Springfield, IL.
- Wetter, M.A, T.S. Cochrane, M.R. Black, H.H. Iltis, and P.E. Berry. 2001. Checklist of the Vascular Plants of Wisconsin, Technical Bulletin No. 192. Department of Natural Resources, Madison, WI.
- Wilbur, C. K. 1996. *The New England Indians*, Globe Pequot Press Old Saybrook, CN.