

## Bibliographic Note

*The information in our guide was compiled from a combination of historical and living sources. We consulted three published ethnobotanical compilations: Melvin Rose Gilmore's *Uses of Plants by the Indians of the Missouri River Region* (1919), Patrick Munson's *Contributions to Osage and Lakota Ethnobotany* (1981), and Daniel Moerman's *Native American Ethnobotany* (1998). We also conducted a series of interviews with Dakota, Lakota, and Ojibwe individuals from nearby in Minnesota, as well as other scholars and ethnobotanists with knowledge pertaining to these cultures. Our contacts included Sean Sherman, who is an Oglala Lakota chef and the CEO/founder of *The Sioux Chef in the Twin Cities*; Darlene St. Clair, who is a Professor of American Indian Studies at St. Cloud State University; Dorene Day, an Ojibwe birthing practitioner in the Twin Cities; Julia Uleberg-Swanson, the Dacie Moses House Coordinator at Carleton and an adopted sibling of Dorene Day; Don Hazlett, an ethnobotanist at the Denver Botanical Garden; and Mike Flynn, a Carleton linguistics professor. Finally, We supplemented the more anecdotal information gleaned from these interviews with basic ecological information from native plant guides and databases such as those of the Minnesota Department of Natural Resources and the US Department of Agriculture. Thanks to Brendan Grant '12 for the cottonwood illustrations.*

*For more information, access the Carleton Arboretum's website at [apps.carleton.edu/campus/arb](https://apps.carleton.edu/campus/arb).*

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## Dakota Ethnobotany in the Carleton College Cowling Arboretum

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*Prior to colonization, the Cowling Arboretum was part of the Oceti Šakowiŋ, or the Seven Council Fires, territory.<sup>1</sup> All bands in this political-social organization, including Dakota, Nakota, and Lakota spoke closely related dialects of the same language. The two bands that lived in our area specifically for thousands of years prior to colonization spoke Dakota: the Bdewakawŋtoŋwaŋ (Mdewakanton, The Spirit Lake People) and the Waŋpekwute (Wahpekute, The Shooters Among the Leaves People).*

*Beginning with the Pike Treaty of 1805, Colonization of Dakota land 'Mni Sota Makoce' consisted of a series of treaties in which Dakota ceded land in exchange for promised government annuity payments, which often did not come to fruition. The starving Dakota led a rebellion that escalated into the U.S.-Dakota war. The mass execution of the Dakota people that followed the short-lived Dakota war in 1862 became the largest organized execution in American history. During the winter of 1862 to 1863, the Dakotas who surrendered--mostly women, children, and the elderly--were incarcerated in a concentration camp at the foot of Fort Snelling where they suffered sickness and assault, resulting in high mortality rates. The following spring, most Dakotas were exiled from the state and sent to reservations in the West. This tragic event is emblematic of the disregard for native lives that accompanied European colonization. While it is true that Dakota culture*

<sup>1</sup> The Oceti Šakowiŋ peoples, the Dakota, Nakota, and Lakota, were deemed the Sioux Nation by French traders, however, many Dakota do not support this terminology.

and lifestyles have been profoundly disrupted during the last centuries of colonization, it is important to recognize that the Dakota Nations and the Ojibwe lives on today.

This guide focuses primarily on ethnobotanical information derived from the Dakota, however, we have also drawn some information from other tribes near our area. The Ojibwe populations are concentrated more in the forested areas in Northern Minnesota and the Lakota (Teton or Teton, Dwellers of the Plains) are another band of the Seven Council Fires located to our West in South Dakota.

## White Sage

*Artemisia ludoviciana*



*A. ludoviciana*, one of a couple sage species that can be found in the Arb, is a white-wooly herb with small tight greenish clusters of flowers near the ends of the stems. Its leaves are generally elliptical, up to five inches long and one inch wide, and the whole plant can grow up to three feet tall.

Sage, like cedar, belongs to the group of four sacred plants used by the Dakota and other Plains tribes for medicinal and ceremonial purposes, and is an important plant for cleansing and healing. According to the Dakota, there are both 'male' (*A. ludoviciana*) and 'female' (*A. frigida*) varieties of sage; the sage present in the Arboretum is the 'male' variety. White sage, or 'male' sage,

also put to use as a powerful medicine to help coughs, regulate blood sugar, and prevent common colds, flus and infections. One story has it that when the Asiatic cholera epidemic struck the Oglala Lakota in 1849, Chief Red Cloud tried various treatments for his people. It was a decoction of cedar leaves, used to drink and bathe in, that finally provided a cure.

Cedar, along with sage, sweetgrass, and tobacco, is one of the four sacred plants, commonly used among the Plains tribes. Among the Anishinabe Ojibway, cedar needles are employed along with the other sacred plants to prepare a place for ceremony. Before a traditional home birth, for example, a smudge of cedar, sage, and sweetgrass may be burned, with tobacco on hand as well, to cleanse the setting and attract good spirits. Before picking any of these sacred plants for medicinal or ceremonial use, however, permission is asked and an offering of tobacco is made in return for what the earth is giving up. This gesture is believed to extend the life of the medicine being used.

The Arboretum has only sparse numbers of white cedars, planted in the 1930s near the entrance to the Lower Arb as part of Harvey Stork's nursery early on in the Arb's history. The tree only occurs naturally in the northern part of the state, where it thrives in partially shady and moist environments such as peat swamps,

## White Cedar

*Thuja occidentalis*



The bark ranges from grey to reddish-brown in color and is identifiable by its shredded texture. The leaves are needle-like, forming flat branching clumps, and have a piney pungent scent when crushed.

The cedar tree is highly sacred to the Dakota, who believe the mythical thunderbird lives in a cedar in the western mountains. Given this spiritual significance, cedar boughs were often put on tipi poles to ward off lightning.

Cedar fruits, in Dakota, are known as *hanti itika*, or “cedar eggs.” Cedar needles have numerous culinary uses, fresh or dried and chopped up as an herbal seasoning, and are a common ingredient for some local Dakota cooks. Tea made from cedar needles is

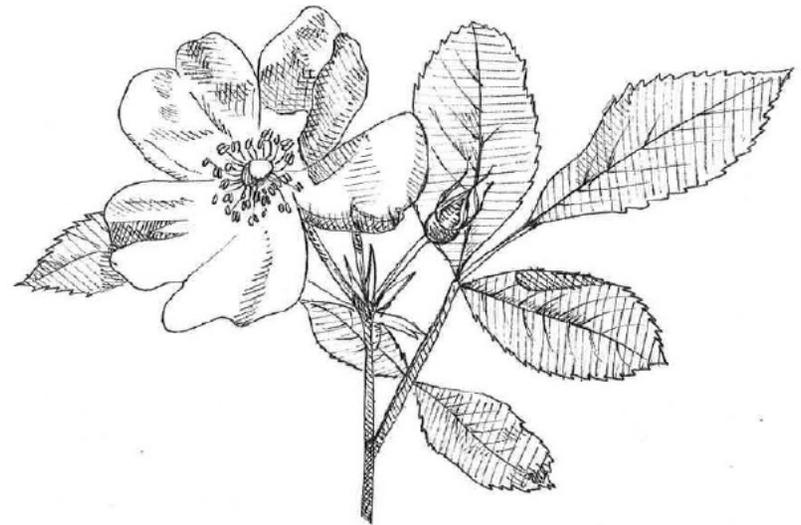
is often burned in the form of a smudge stick, a tightly tied bundle of sage. This helps to clear any sadness or other negative energy from the general area and anyone present. When smudging, a participant either uses their own hands or a feather to wash the sage smoke over themselves, making sure it reaches the body, heart, head, and hair.

Brewed into a tea, sage can aid as a decongestant or to remedy stomach trouble. The female variety (*A. frigida*) in particular can help a woman’s milk dry up after pregnancy and during the process of weaning, or can be used to regulate one’s menstrual cycle. Due to its importance as a ceremonial and medicinal herb for Dakota and Ojibwe tribes, it has been over-harvested in areas close to the Twin Cities where it is an important resource for the Dakota communities who live there.

White sage can be found in dry upland environments with lots of sun. Look for the plant in open prairies and along roadsides.

## Prairie Rose

*Rosa arkansana*



Prairie rose is a native shrub found throughout western and southern Minnesota. The plants can grow up to 40 inches tall and, as with other rose species, the stems are covered with thorns. Flowers are small and pale pink with five petals, and they bloom in June and July. After bloom, the base of the flower swells into a small round red fruit known as a “hip” that attracts animals for seed dispersal. Alternatively, prairie rose can spread by sending out stems underground that then grow into a new plant a few feet away. The species does well in sun as well as partial shade and can be found in open prairies and fields, and along the edges of roads and woods.

Prairie rose can be used to flavor foods and teas and is regarded as beneficial for the “emotional heart.” The rose hips in particular are high in nutrients, especially vitamin C. The fruits have often been used to help tide people through periods of winter scarcity. Dakota, as well as many other Native American tribes, think of various plants and animals as having their own songs or stories. The following is an English translation of a Dakota story about the prairie rose. It was taken from *Prairie Smoke*, published in 1929 by ethnobotanist Melvin Gilmore:

*The prairie was gray and drab, no beautiful flowers brightened it, it had only dull greenish-grey herbs and grasses, and Mother Earth's heart was sad because her robe was lacking in beauty and brightness. Then the Holy Earth, our Mother, sighed and said: “Ah, my robe is not beautiful, it is somber and dull. I wish it might be bright and beautiful with flowers and splendid with color. I have many beautiful, sweet, and dainty flowers in my heart. I wish to have them upon my robe....”*

*Then a sweet little pink flower said, “Do not grieve, mother. I will go upon your robe and beautify it.” So the little pink flower came up from the heart of Mother Earth to be upon the prairie of her mother's robe.*

*Now, when the Wind Demon saw the pink flower there, he said, “Indeed she is pretty, but I will not have her trespassing in my playground.” So the Wind Demon rushed at her, shouting and roaring, and blew out her life, but her spirit returned to the heart of Mother Earth. And when the other flowers ventured, one after another, to come out upon the prairie, which was Mother Earth's robe, the Wind Demon destroyed them also...*

*At last Prairie Rose offered to go and brighten the appearance of Mother Earth's robe, the prairie. Mother Earth said fondly, “Yes, dear, sweet child, I will let you go... So Prairie Rose made the toilsome journey up through*



The distinctive corky ridges of the bark make hackberry one of the most easily identifiable trees in the Arb. Each tree has the same number of ridges throughout its entire life, and the ridges grow deeper and more robust as the tree ages. Trees produce small berry-like fruit called drupes which are green, purple, or reddish in color depending on the season. Leaves are about two to five inches long with jagged edges, a round base, and a pointed tip.

One Dakota name for the tree is Yamnumnugapi from the word yamnumnuga, which means "to crunch" and refers to the manner in which animals crunch the berries. Among the Dakota, the berries were traditionally dried and ground, seeds and all, and then used to season meat. When Dakota people were first exposed to black peppercorns as a ground seasoning, they likened it to yamnumnugapi, calling it “white man's yamnumnugapi.” Other Native American tribes have used hackberry as a gynecological aid in order to induce abortion, regulate menstrual cycles, and treat venereal diseases. Finally, ground hackberry seeds have also been used to help sore throats, or can be mixed with fat and corn to form porridge.

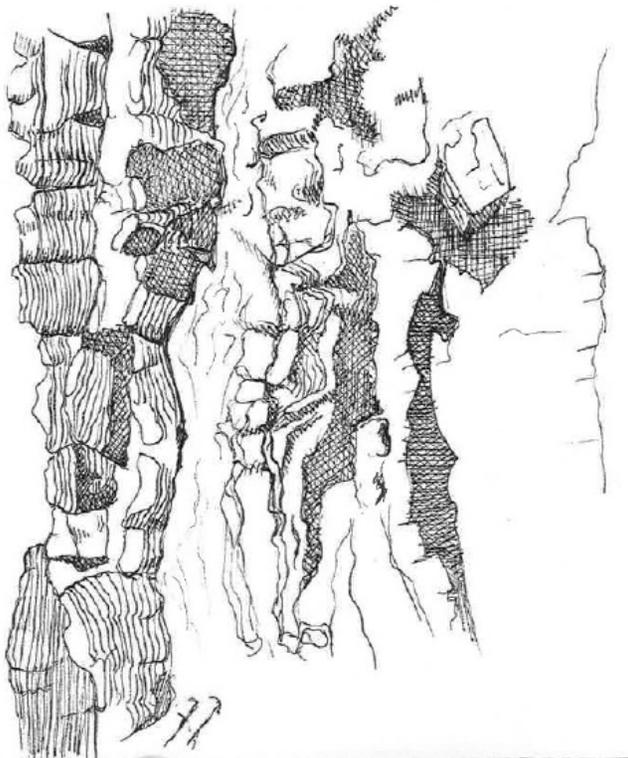
Hackberry is a popular tree for landscaping as it can grow in a variety of soil types and soil richness, and is fairly drought and flood tolerant. Its natural habitats, however, are hardwood and floodplain forests, and areas near river banks.

to treat fever and pain, and has served as a precursor to aspirin. In the 1840's, chemists isolated salicylic acid from willows and found that it has strong antipyretic (fever reducing) and analgesic (pain-killing) effects. Modern aspirin (acetylsalicylic acid), which contains synthetic salicylic acid, got its name from *Salix*. Julia Uleberg Swanson, the manager of the Dacie Moses House at Carleton and adopted member of an Ojibwe family, explained that many modern pharmaceuticals are derived from native knowledge. A 2001 study by the World Intellectual Property Organization estimated that more than 45 percent of medicinal patents belong to or are derived from native knowledge systems.

All willow species prefer wet soil, and the black willows in the Arb are no exception. Large willows can be found immediately adjacent to the Cannon River and Spring Creek, often leaning out over the river.

## Hackberry

*Celtis occidentalis*



*the dark ground and came out upon the sad gray prairie....*

*Now, when the Wind Demon saw Prairie Rose, he rushed at her, shouting, and said, "Indeed, though she is pretty, I shall not allow her to be upon my ground. I will blow out her life." So he came on, roaring and drawing his breath in strong gusts. Just then he caught the fragrance of the breath of Prairie Rose. "Ah," he said, "how sweet her breath is! Why, I do not have it in my heart to blow out the life of such a beautiful little maiden whose breath is so sweet!... I must make my voice gentle and sing a melodious song, for I wish not to frighten her with my awful noise."*

*So he became quiet and breathed gentle breezes which pass over the prairie grasses whispering and humming little songs of gladness. Then the other flowers came up through the dark ground and out upon the dull gray prairie and made it bright and joyous with their presence. And the wind came to love all the flowers and all the grasses.*

*And so the robe of Mother Earth became beautiful because of the loveliness and sweet breath of Prairie Rose. Sometimes the Wind forgets his gentle songs and becomes loud and boisterous, but he does not harm a person whose robe is ornamented with the color of Prairie Rose.*

## Black Raspberry

*Rubus occidentalis*

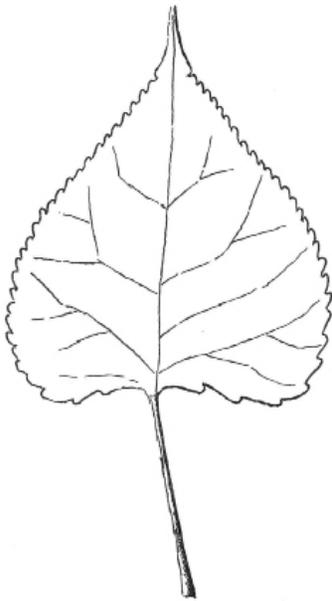


This native plant is recognizable by its purplish arching stems which are covered in thorns and can grow up to 12 feet long. Black raspberry is common throughout much of southern Minnesota. Unlike the fruit of blackberry plants with their cylindrical white center, the fruit of the black raspberry has a hollow center, just like red raspberries. Peak ripeness for berries starts in late July, lasts through the later half of mid-summer, and is generally over in September. When ripe, the berries turn a deep blue-black with only the faintest hints of red. Until they reach this stage however they remain quite tart.

Dakota, along with all plains tribes, ate, and continue to eat, raspberries fresh in season or dried for the winter. Young leaves can also be steeped into a tea-like beverage. Raspberry root is also chewed by other native American tribes in order to treat coughs. Black raspberry plants prefer open woods, prairies, and meadows, and are frequently seen in disturbed areas such near roadsides, hiking trails, fences, and railroads.

### Eastern Cottonwood

*Populus deltoides*



and potentially fatal as they contains hydrocyanic acid. Boiling or drying the fruit, however, neutralizes the hydrocyanic acid. Chokecherry trees can thrive in a range of shady and sunny environments, and are often found in open woods, on trail edges, near roads, and along riverbanks.

### Black Willow

*Salix nigra*

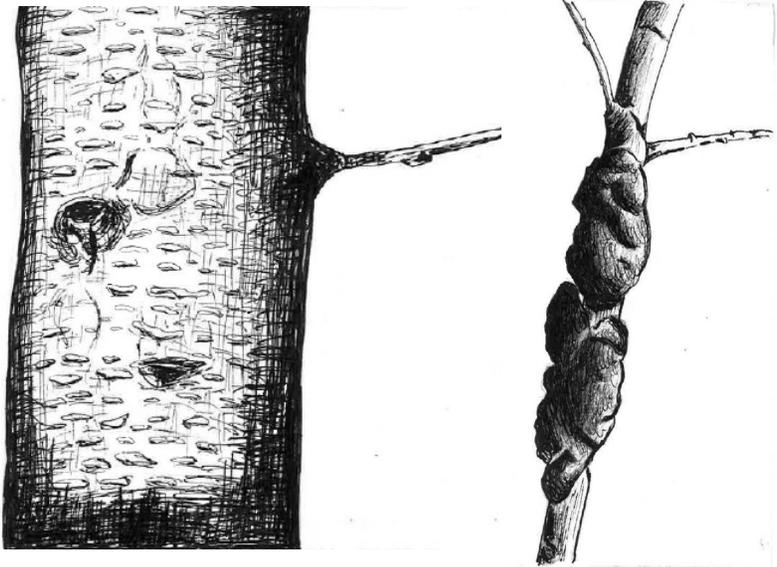


Black willows have deeply furrowed bark, short, stout trunks that often branch out near the base, and narrow, serrated-edge, lance-shaped leaves. The life span for a black willow averages 65 years with a range of 40 to 100 years. Older trees tend to rot out inside, eventually toppling but remaining alive at the base. One such example is the toppled tree where the trail into the lower Arb meets the Cannon River that marks a popular spot to start tubing during warm weather.

Willow poles were traditionally used as a building material by the Dakota to sustain the thatch of earth lodges and to form the frame of the bath lodges. Tea made from willow bark can be used

## Chokecherry

*Prunus virginiana*



Chokecherry is a native, thicket forming, shrubby tree with bark that starts as a smooth reddish-brown and becomes dark gray and furrowed with age. The bark also has noticeable horizontal lenticels (raised pores). It can also be easily identified by the black native fungus that often grows on its branches, called black knot. It typically stays short and the trunk rarely reaches a diameter over five inches at chest height. This is one of the most common trees in North America.

Though the chokecherry was a staple for many native tribes, it is particularly important to the Dakota tribes who used the stem of the plants to make arrows and gave the name to one of their calendar months, Canpásapa Wi, “the- month-when-cherries-are-ripe” or “black-cherry-month.” Chokecherry fruit is eaten fresh and also dried for winter use in various forms. Wasna, meaning “all mixed up” in Lakota, is a popular, traditional Dakota dish made of a mix of dried buffalo, dried cherry, and fat, and has been stored throughout the winter. Another chokecherry dish is made by pounding the cherries into a pulp, straining out the peel and seeds, leaving the pulp to dry out in the sun, and then forming it into cakes and balls. The seeds when eaten fresh are poisonous

The eastern cottonwood is the largest native tree in the Arb. It can reach a trunk diameter of seven feet or more and a height of 100 feet. The tree has broad, triangular leaves, and fruits which are green and shaped like eggs. When these fruits split, they release large amounts of cotton-like seeds into the wind. In the winter, the thick, deeply furrowed brownish-gray bark is the most recognizable feature of eastern cottonwoods.

For the Dakota, the eastern cottonwood is a symbol of fidelity and is used as the central object in the religious ritual of the Sundance. The Sundance is a ceremony practiced by the Dakota, allowing participants to achieve renewal and cleansing. It requires men to make a sacrifice by dancing for hours circling around the cottonwood, attached to the trunk by a bone piercing with a leather extension. Although formerly banned in the United States, the dance has been widely practiced in many forms after the passing of the Native American Religious Freedom Act in 1978. Additionally, the inner bark of young sprouts has been eaten by the Dakota, prized for its sweet taste and high nutritional value. The value of young cottonwood branches for horse forage was also commonly known among the Dakota peoples, European trappers, and travelers alike, and was said to be “good for them as oats.”

Eastern cottonwoods do well in sun and partial shade, and are a common sight in most wooded areas, lowland forests, and floodplains along rivers and lakes.

## Boxelder or Ash-leaved Maple

*Acer negundo*



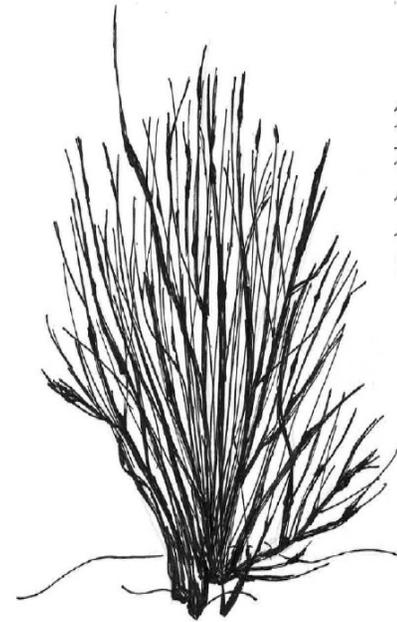
The boxelder is most identifiable by the blocky, vertical ridges and furrows in its bark. It is often not recognized as a maple due to its compound leaves, each comprising multiple leaflets attached to one stem. The male and female flowers grow on separate trees and hang in clusters, appearing in early spring.

This common, large, cold-hardy native tree has been tapped by the Dakota who use its sap to make a sweet syrup and sugar. As the sweeter sugar maples that are more commonly used for syrup do not grow in prairie regions, boxelders offered an important alternative sap source. With sap that flows throughout the entire winter, boxelders have helped provide nourishment and tide people through the end of winter when supplies ran low. Additionally, the Dakota have used the wood of the boxelder to make charcoal for ceremonial painting and tattooing.

Boxelder trees prefer moist and at least partially sunny habitats. Look for them throughout the woods of the Arboretum and near the Cannon.

## Redosier dogwood

*Cornus sericea*



Also called red willow, redosier dogwood is recognizable in the winter by its rich, red bark. During the summer, its twigs are more of a greenish-red and can be flaked with grayish-white lenticels (pores). It is distinguishable from other flowering shrubs by its clusters of four-petaled small, white flowers and its prominent, arching, lateral, leaf veins.

The Dakota have historically smoked this species; the outer bark is removed and the inner bark is scraped and dried for smoking in the sacred pipe. The Dakota call this dried bark Cansasa, but it is also commonly called Kinnikinnick meaning 'mixture' in Algonquian. It is often smoked along with tobacco (not native to Minnesota) or bearberry (native only to the northern half of Minnesota). Silky dogwood (*Cornus amomum*), also found in the Cowling Arboretum, may be smoked and added to Kinnikinnick mixtures as well. Though tart and bitter, the berries were also eaten. Redosier dogwood is not especially shade-tolerant but can be found in sunny wetland areas of the Arboretum.