

HERITAGE OF THE GREAT PLAINS

FORAGING THE FLINT HILLS: A Guidebook for Identifying Edible and Medicinal Plants

by Tom Eddy

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**FORAGING THE FLINT HILLS:
A GUIDEBOOK FOR IDENTIFYING EDIBLE
AND MEDICINAL PLANTS**

by Tom Eddy

This issue of *Heritage of the Great Plains* is intended to assist readers in identifying the important edible and medicinal plants used by the Indians and early settlers in the Flint Hills region of Kansas. It also serves as an introduction to the region's geological, climatological, and vegetational history.

The primary occupation of the Native Americans who seasonally or more permanently inhabited the region known as the Flint Hills was survival. Their quest for food and healing herbs from the prairies and their bordering woodlands consumed much of their time and attention. Later, European settlers also used wild plants to supplement their crops of cultivated plants; occasionally they found some species—typically with the help of knowledgeable Indians—useful in treating various ailments.

Substantial information on prairie plants used by the Osage tribe that inhabited the Flint Hills region is available in the literature. Good records also exist for the Kiowa and Pawnee to the west, the Dakota and Lakota to the northwest and the Ponca to the south of the Flint Hills region. Although these latter tribes were peripheral to the main body of eastern Kansas Indians, their inclusion here recognizes their ancestral relationship to the Kansas region and their use of many plants common to our Flint Hills flora. The ethnobotany of the Kickapoo, Potawatomi, Kansa, Chippewa, Delaware, Wichita, Shawnee, Missouri Sacs and Iowas is poorly documented.

A few early explorers, anthropologists, naturalists and others have, through interviews and direct observations, assembled information about the lives of the North American Indians. This lore includes insights into the use of plants by various tribes. Though there was likely some exchange of plant material among the tribes, most depended on the plants of their immediate environment. These glimpses into the roles of plants in the lives of early Americans were recorded in an array of expedition journals, diaries, and various publications.

Scientists such as Kelly Kindscher in the prairie region and Melvin Gilmore in the Missouri Valley region have studied this diverse literature and organized it into regional ethnobotanies. In this issue of *Heritage* I have gleaned from these works information on edible and medicinal uses of selected plants found in the Flint Hills of Kansas. Citations in the text are largely credited to the authors of these recent summary ethnobotanies and not to the original sources.

INTRODUCTION

GEOLOGY

The Flint Hills of Kansas stretch from Marshall County southward to the Oklahoma border, embracing over five and one-half million acres of undulating prairie.

Sedimentary bedrock, dipping gently toward the west, underlies the Flint Hills. Eroded interbedded limestone, variously colored shale and cherty limestone form the east-facing Flint Hills Escarpment. The escarpment is characterized by steep hill slopes on which individual limestone beds create benches and stone lines. Toward the west thick limestone deposits cap flat hill tops and form gently dipping slopes.

Bedrock in the Flint Hills consists of the Council Grove and Chase Groups of the Lower Permian Series. Chert weathered from the Wreford and Florence Limestones forms a resistant cap over the Flint Hills uplands and serves as the source for nearly all of the gravel in the area's stream channels, as well as in old alluvial deposits found on the region's terraces.¹

SOIL

The most obvious landforms in the Flint Hills are the broad, relatively flat river valleys—for example, the Cottonwood and Neosho valleys—and the extensive uplands. Within these two basic categories of landforms are found groups of soils occurring in distinct patterns directly related to relief and drainage. This relationship is so correlated that a knowledgeable observer can predict the occurrence of specific soils along with their properties by carefully examining the Flint Hills landscape.²

These fertile Flint Hills soils are a product of thousands of years of complex biotic and abiotic interactions among the underlying calcium rich limestone rocks, the remains of past generations of prairie plants and animals, and a multitude of microorganisms.

HISTORICAL CLIMATES AND ASSOCIATED VEGETATION

Two hundred fifty million years ago during the Permian age, a vast body of water covered the area now occupied by Kansas. Then, from the close of the Permian to the lower Cretaceous (200 million years ago) various types of ferns and conifers covered much of the landscape. This type of vegetation evidently prevailed for millions of years. During the middle and late Cretaceous (175-150 million years ago) a shallow sea invaded yet again. Following its withdrawal near the end of the Cretaceous, the uplift of the Rocky Mountains occurred in the West. These mountains impacted dramatically upon Kansas by intercepting

moisture-laden winds from the Pacific Ocean and restricting the rainfall on lands immediately east to moisture from the Gulf of Mexico. Over the years the increasing aridity resulted in the formation of a drought hardy grassy type of vegetation in the area now occupied by the sprawling Great Plains. It is currently believed that this grassland type of vegetation dominated tracts of the Great Plains continuously for millions of years. In addition, students of the subjects generally assume that during the course of time vast arm-like projections of grasslands pushed out in several directions and withdrew again many times in response to changes in climate.

Millions of years after the formation of the mountains in the west, a series of events exerted significant influence upon Great Plains vegetation. During the later Tertiary (70 million years ago) gradual cooling of the climate in high latitudes signaled significant environmental changes which led to the disappearance of tropical species of plants from northern and western North America. Apparently during this period a distinct separation developed between the northern flora, predominately gymnosperms (cone-bearing evergreen trees) and the southern flora which was controlled by angiosperms (seed bearing herbaceous and graminoid plants). These two principal forms—tree types and grasslands—have maintained their identity in North America since pre-glacial times. The Tertiary period ended about 5 million years ago and was followed by widespread glaciation as cooling in the high latitudes continued. The ice movement out of the north spurred a migration of all living things southward. Entire belts of vegetation types such as tundra, bog shrub, coniferous forest and deciduous forest usually remained throughout the east and middle west while simultaneously claiming territory in the south. The width of land belt vegetation, however, varied with topography.

Further west prairie vegetation covered the treeless plains. A broad belt of tundra probably bordered this area of level land on the north. After further retreat of the ice the climate became more suitable for plant growth. Consequently, the belts of vegetation proceeded northward from the position that they occupied at the southernmost advance of the glaciers. The succession of plant migration northward took place in this order: tundra, bog shrub and conifers. The prairie grasses from the plains, however, not only invaded the immediately adjoining tundra to the north, but also succeeded in penetrating the glaciated regions of the middle west.

As the climate improved, the dry period gradually ended. Then the oaks, hickories, elms, ashes, cottonwoods and maples of the deciduous forests followed the retreating grasses in a westward direction. As the short grasses (grammas and buffalo grass) retreated westward they took with them taller species from the humid south (bluestems, panicums and sorgastrum) and as a more arid climate pattern returned to the high plains the more drought resistant grasses came to occupy the drier positions, whereas the more moisture dependent grasses became

established on the eastern border of the grasslands and in wetter and more protected sites westward into the plains.³

PRESENT CLIMATE

The climate of the Flint Hills in east-central Kansas is of the sub-humid, continental type, characterized by substantial daily, monthly and yearly variations in temperature and precipitation. Winters are short and cold; summers long and hot; the vernal and autumnal transitional seasons are generally short. The mean annual temperature is about 55° F (13° C). The coldest recorded temperature for Emporia, on the eastern edge of the Flint Hills is -23° F (February 13, 1905); the hottest temperature is 116° F (June 15, 1934). The frost-free growing season averages more than 180 days, but varies annually from less than 170 to more than 200 days. The precipitation in the Flint Hills averages around 35 inches (90 cm) per year, most of which comes during the April-September growing season. Approximately two years in 10 have more than 43 inches of precipitation. Most of this precipitation is supplied by air movement from the Gulf of Mexico. Strong thunderstorms, hail and tornadoes occur occasionally, particularly during late spring and early summer. The region's rivers are susceptible to flooding because of the relatively impermeable bedrock and the high precipitation rates during these storms. In fact, serious flooding can occur in the Flint Hills at any time of the year.⁴

VEGETATION

The Flint Hills survive as the only extensive area of tallgrass prairie in the eastern Great Plains because the rocky soils are not suitable for traditional cropland agriculture. Fire remains an important ecological factor in the distribution of the flora of the region. Big bluestem, little bluestem, Indian grass and switchgrass dominate these communities, with other tall and mid-grasses assuming subordinate roles. The diverse topography—rugged rocky hillsides, flat or rolling uplands, lowland stream areas—offers many suitable niches for different prairie species.⁵

Little bluestem, for example, dominates on the drier uplands while big bluestem does well in areas that receive run-off from the upper slopes. Where the underlying layer of rock outcrop in the uplands, the sequence for the bluestems is often interrupted. Topography does not directly determine plant distribution but it does affect the water content of the soil by influencing the amount of run-off and percolation. Where the soil is especially thin, small patches of the short grasses may occur or occasionally may assume a continuous cover over the dry site.

Among the grasses and in the woody growth in the streamside environment are found many of the herbs, trees and shrubs used by Native American and immigrant settlers for food and medicine.

"The dominant character of a region's vegetation is always an important factor in shaping the culture of that region, not only directly through the raw material which it supplies or withholds, but also indirectly through the floral influence on the coexistent fauna."⁶

PLANT DISTRIBUTION

It would be interesting if we could determine, with any degree of accuracy, the efficiency of the factors involved in the redistribution of vegetation over the ice-devastated region after the glacial retreat. What role did distance, velocity, and direction and the active agents eolian, hydrographic, faunal, and anthropic, or the various currents play in the resurgence of the floral life over the region formerly covered by ice?⁷ Although these sources of plant immigration into the plains are recognized, the human factor in plant distribution prior to European impact is not obvious. But the people of the resident Indian tribes traveled extensively and received visitors from distant groups. Their needs and desires created a demand for a large number of plant species from mountain, plain and valley, from prairies and woodland, from regions as remote from each other as the Rio Grande Valley and the Great Lakes and the St. Lawrence River. The plants cultivated by the Indians were of Mexican origin: squashes, pumpkins, gourds, and watermelons, garden beans (15 or more varieties) and corn (from 15 to 30 varieties).⁸

The way Native Americans viewed the plant life around them and their means of acquiring knowledge of plants' values was eloquently described by the renowned ethnobotanist Melvin R. Gilmore in *Uses of Plant by Indians of the Missouri River Region*.

In the process of experiment some plants would be found which, though not proving useful for food, would disclose properties which could be used as correctives of unhealthy conditions of the body; some would be found to allay fevers, some to stimulate certain functions, others having the effect to stop hemorrhage, and so on. Certain persons in every tribe or social group, from taste and habit, would come to possess a fund of such knowledge, and to these all simpler folk, or those occupied with other things, would resort. These wise ones then would know how to add the weight and dignity of ceremony and circumstance so that the laity should not fail to award due appreciation to the possessors of such knowledge; thus arose the rituals connected with the uses and the teaching of the

same. Persons who desired to acquire such knowledge applied to those who possessed it, and if of approved character and prudence they, upon presentation of the customary fees or gifts, were duly instructed.

A people living with nature, and largely dependent upon nature, will note with care every natural aspect in their environment. Accustomed to observe through the days and the seasons, in times of stress and of repose, every natural feature, they will watch for every sign of the impending mood of nature, every intimation of her favor and every monition of her austerity. Living thus in daily association with the natural features of a region some of the more notable will assure a sort of personality in the popular mind, and so come to have place in philosophic thought and religious ritual.

Throughout the range of the Plains tribes they saw everywhere the cottonwood, the willow, and the cedar. These trees by their appearance impressed the imagination of the primitive mind. The cedar, appearing to be withdrawn into lonely places, and standing dark and still, like an Indian with his robe drawn over his head in prayer and meditation, seemed to be in communion with the Higher Powers. The willow was always found along the watercourses, as though it had some duty or function in the world in connection with this element so imperatively and constantly needful to man and to all other living forms. The cottonwood they found in such diverse situations, appearing always so self-reliant, showing such prodigious fecundity, its lustrous young leaves in springtime by their sheen and by their restlessness reflecting the splendor of the sun like the dancing ripples of a lake, that to this tree also they ascribed mystery. This peculiarity of the foliage of the cottonwood is quite remarkable, so that it is said the air is never so still that there is no motion of cottonwood leaves. Even in still summer afternoons, and at night when all else was still, they could ever hear the rustling of cottonwood leaves by the passage of little vagrant currents of air. And the winds themselves were the paths of the Higher Powers, so they were constantly reminded of the mystic character of this tree.⁹

Common Names: Golden Alexanders
Technical Name: *Zizia aurea* (L.) Koch
Indian Names: Not available

DESCRIPTION: Golden alexanders is a smooth, erect perennial herb, 2-7 dm (3/4-2 1/2 ft.) tall with stems branched above. The lower leaves are pinnately compound, with egg-shaped and toothed leaflets. Small yellow flowers appear in flat-topped clusters at the ends of branches.

PARTS USED: Leaves, flower stalks

MEDICINAL ASPECTS

Indian: Used with leaves of beebalm and daisy fleabane to make a powder that was used as a snuff to treat headache.

Euroamerican: Once used as a nerve stimulant. The plant is potentially toxic and can cause vomiting.¹⁰



Common Names: Jerusalem artichoke, Tuberous sunflower
 Technical Name: *Helianthus tuberosus* L.
 Indian Names: Pawnee: *kisu-sit* (tapering long)

DESCRIPTION: Perennial herbs from tuber-bearing rhizomes, 1-3 m (3-10 ft.) tall, branching near tops. Leaves mostly opposite, but upper ones alternate, egg-shaped to lance-shaped, 10-25 cm (4-10 in.) long, surfaces hairy, margins usually coarsely toothed. Flower heads at ends of branches from August to October; ray florets 10-20, up to 4 cm (1 5/8 in.) long, yellow, disk florets yellow. Fruits dry, egg-shaped, 5-7 mm (3/16-1/4 in.) long, hairy.

PARTS USED: Roots (tubers)

FOOD ASPECTS

Indian: Used widely by Plains Indians; [Pawnee] Ate only raw roots (other Plains tribes often ate them boiled or roasted)

Euroamerican: Tubers are high in inulin and therefore largely indigestible. Slow baking of tubers would likely improve their flavor (sweetness) and digestibility.¹¹



Common Names: New England Aster, Aster
 Technical Name: *Aster novae-angliae* L.
 Indian Names: No area tribe names found

DESCRIPTION: Perennial herbs 5-12 dm (1 1/2-4 ft.) tall, stems erect, glandular-hairy, especially toward the top, often clustered; leaves alternate, simple entire, lance-shaped to egg-shaped, clasping at the base, 2-10 cm (3/4-4 in.) long, 1-2 cm (3/8-3/4 in.) wide, the lowermost typically absent at blooming, the uppermost greatly reduced. Flower heads clustered near ends of branches, from September to October; ray flowers 50-100, up to 2 cm (3/4 in.) long, bluish-purple; disk flowers yellow. Fruits dry, silky-hairy achenes less than 2 mm (1/16 in.) long, with numerous tiny bristles at the tip.

PARTS USED: All parts

MEDICINAL ASPECTS

Indian: [Pawnee] Used as moxa (stem pieces were placed on skin in a painful area and burned)

Euroamerican: Flowers used as an expectorant, emmenagogue, and a cure for croup. Some may accumulate toxic amounts of selenium.¹²



Common Names:	Beebalm, Wild bergamot
Technical Name:	<i>Monarda fistulosa</i> L.
Indian Names:	None available

DESCRIPTION: Perennial herbs from creeping rhizomes, 3-12 dm (12-48 in) tall; stems square, usually hairy above, sometimes branched, leaves opposite, oval to lance-shaped, 3-110 cm (1 1/4-4 in) long, lower surfaces hairy, margins toothed or nearly entire, fragrant. Flowers in round clusters at ends of branches from June to September; petals fused into tubes, separating into two sections, upper 1 erect, lower 1 bent backwards, 2-3.5 cm (3/4-1 3/8 in) long, pale to dark lavender, rarely white. Fruits dry, hard, 1.5-2 mm ($\pm 1/16$ in) long, brownish or blackish.

PARTS USED: Leaves

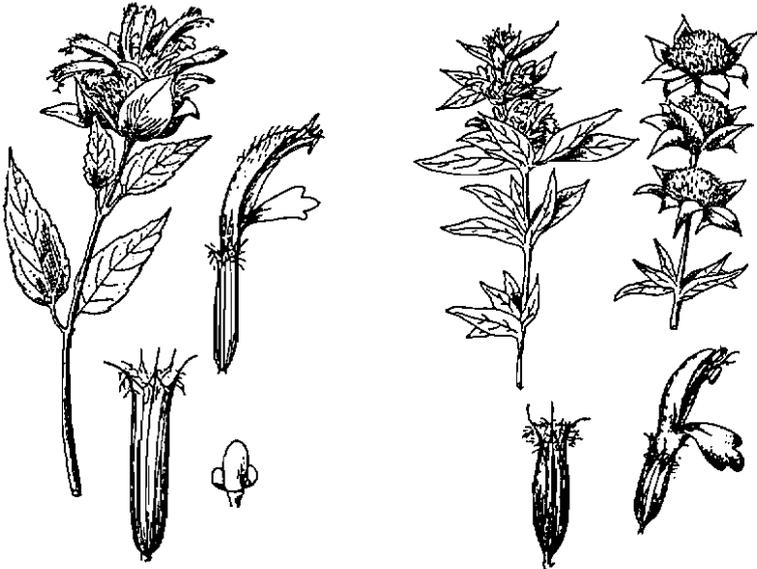
FOOD ASPECTS

Indian: [Lakota] Leaves were chewed for fragrance and taste while singing and dancing¹³

MEDICINAL ASPECTS

Indian: [Lakota] Flower tea was used for treating fever and colds. Leaf teas were used as a treatment for coughs and for people who had fainted.

Euroamerican: Listed in *U.S. Pharmacopeia* since 1950 as an antifungal, antibacterial, and treatment for hookworm. Treatment of headache and fever.¹⁴



Common Names:	Illinois bundleflower
Technical Name:	<i>Desmanthus illinoensis</i> (michx.) Macm.
Indian Names:	Pawnee: <i>atikatsatsiks</i> (spider-bean) and <i>kisitsaris</i> (bad plant)

DESCRIPTION: Illinois bundleflower is a perennial herb, 3-10 dm (12-40 in.) tall with smooth, alternate, twice-pinnately compound leaves. The tiny, white, tubular flowers are in small, dense, spherical clusters giving a fluffy appearance. The fruits are flat, crescent-shaped, and remain on the stems into the fall.

PARTS USED: Seeds, sprouts

FOOD ASPECTS

Euroamerican: Sprouts were found to be of good flavor. Popped seeds edible.

MEDICINAL ASPECTS

Indian: [Pawnee] Leaves were boiled to make a solution to relieve itch.

Euroamerican: Found to contain materials that were antibacterial and restricted growth of certain harmful caterpillars.¹⁵



Common Names: Prickly pear cactus
 Technical Name: *Opuntia macrorhiza* Engelm.
 Indian Names: [Pawnee] *pidahatus* (not translated)

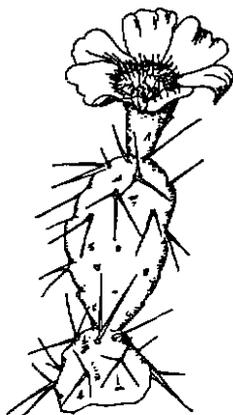
DESCRIPTION: Perennial, low-growing in clumps, less than 12 cm (4 3/4 in) tall; stems bluish green with flattened, roundish segments (pads), to 10 cm (4 in) long, bearing clusters of tiny spines with 1-6 larger spines to 5 cm (2 in) long. Leaves cylindrical, fleshy, falling off readily. Flowers solitary near margins of older stem segments, usually yellow, sometimes reddish. Fruits fleshy, narrowly egg-shaped, to 5 cm (2 in) long, purple to red, bearing clusters of tiny spines, seeds disk-shaped, with broad rims.

PARTS USED: Fruits, pads, and flowers

FOOD ASPECTS

Indian: [Pawnee] Dried green fruit was stored and used with meat and other food at a later time. Boiled despined fruits for 10 to 12 hours until they thickened into a sauce that was allowed to ferment. [Cheyenne] Ate the fruits of the prickly pear raw and dried. Before the Europeans occupied the southern part of the plains, the gathering, drying, and storing of the fruit of the cactus was one of the Southern Cheyenne women's important duties.

Euroamerican: Kindscher reports the observation by Blakenship in Montana that "the taste of raw prickly pear pads is similar to that of raw okra or cucumber. Early settlers from Montana reported that the pads can be prepared by boiling, which loosens the skin, so that it and the prickles can be easily removed; then the soft, pulpy interior can be fried for an excellent dish."¹⁶



Common Names: Eastern red cedar, Red cedar, Juniper
Technical Name: *Juniperus virginiana* L.
Indian Names: (Pawnee) *tawatsaako* (no translation given)

DESCRIPTION: Pyramidal to columnar evergreen trees to 15 m (50 ft. tall); bark reddish-brown to gray, fibrous, and splitting into long, flat strips. Leaves opposite, simple, green to blue-green, scalelike and 0.2-0.3 cm (1/16-1/8 in.) long or needle like and 0.6-1.2 cm (1/4-1/2 in.) long. Male and female cones on separate trees, from April to May; male cones yellowish-brown, papery, 0.2-0.4 cm (1/16-3/16 in.) long; female cones dark blue, waxy, berrylike, 0.4-0.7 cm (3/16-1/4 in.) long, ripening September through October.

PARTS USED: Leaves and berries

MEDICINAL ASPECTS

Indian: [Kiowa] Berries were chewed as a remedy for canker sores. Used cedar heartwood to make "courting flutes." [Pawnee] Inhaled smoke from burning twigs to relieve nervousness and bad dreams.

Euroamerican: Steeped seeds of related species such as creeping juniper to make a drink for treatment of kidney problems.¹⁷



Common Names: Ground cherry, husk tomato
Technical Name: *Physalis heterophylla* Nees
Indian Names: [Pawnee] *nikakispak* (forehead, to pop)

DESCRIPTION: Perennial herbs with erect, hairy stems 1.5-5 cm (5/8-2 in.) tall, sometimes much branched. Leaves alternate, egg-shaped to 4-angled, 5-10 cm (2-4 in.) long, both surfaces hairy, margins irregularly wavy or toothed. Flowers solitary among leaves, nodding, from May to October; each one 1.5-2.5 cm (5/8-1 in.) wide, petals fused into bell-shaped tubes, with 5 shallow lobes at tops, yellow with 5 dark spots at bases of tubes. Fruits fleshy, round, yellowish, enclosed in papery, inflated coverings, egg-shaped and 3-4 cm (1 1/4-1 5/8 in.) long.

PARTS USED: Ripe fruit (raw or cooked), roots, fruits

FOOD ASPECTS

Indian: Fruits have tomato taste and were widely used as food for Indians. [Kiowa] Fruits were used in making jelly and children enjoyed "popping" the husks for the sound effect.

Euroamerican: Ripe fruit is edible. Green fruits and other parts of the plant may be poisonous.¹⁸

MEDICINAL ASPECTS

Indian: Tea from root used for treatment of headaches and stomach pains; smoke from burning roots was inhaled to relieve headaches or nerve problems.

Euroamerican: Children have been poisoned from eating unripe fruits. The symptoms of poisoning in livestock and humans are stomach and intestinal irritation and inflammation, troubled breathing, trembling, weakness, and paralysis.¹⁹



Common Names: Prairie clover, White prairie clover
 Technical Name: *Dalea candida* Michx. ex Willd.
 Indian Names: [Pawnee] *kahts-pidipatski* (small medicine) *kiha piliwus hawa stat* (broom weed, tough stems to sweep lodges)

DESCRIPTION: Perennial herbs from thick taproots, stems 1-several, 3-10 dm (12-40 in.) tall, ribbed, sometimes dotted with glands. Leaves alternate, pinnately compound, 1.5-7 cm (5/8-2 3/8 in.) long; leaflets in 3-5 pairs, egg-shaped to elliptic or oblong, surfaces with minute dots. Flowers in oval to cylindrical groups at tops of stems, from May to September; petals 5, white, upper one larger and erect, lower two boat-shaped, 2 wings at sides. Fruits dry, oval, 2.6-4.5 mm (1/16-3/16 in.) long, dotted with glands sepals persisting around bases.

PARTS USED: Roots, leaves (for tea)

FOOD ASPECTS

Indian: Roots chewed for sweet taste. [Kiowa] Ate roots after peeling outer root cover.²⁰

MEDICINAL ASPECTS

Indian: The roots were pulverized, boiled and the liquid portion drunk to prevent diseases.²¹



Common Names: Compass plant, rosin weed
 Technical Name: *Silphium laciniatum* L.
 Indian Names: [Pawnee] *Kahts-tanga* (rough medicine), *nakisukiitsu*
 (possibly in reference to piney-tasting sap)

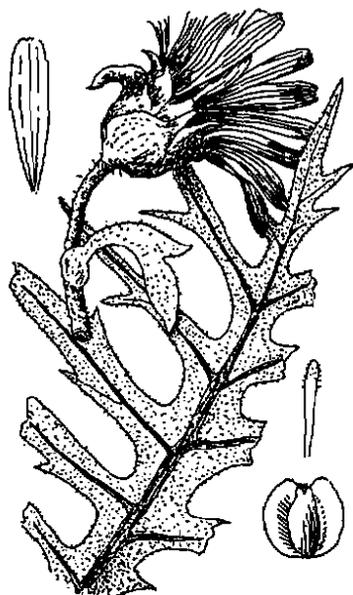
DESCRIPTION: Coarse perennial herb 10-30 dm, (3 1/4-10 ft.) tall, with massive woody rootstocks; stems erect, stiff-hairy, resinous, usually single and unbranched. Leaves alternate, stiff, stalked below, gradually reduced up the stem; basal leaves prominent, up to 4.5 dm (1 1/2 ft.) long and 3 dm (1 ft.) wide, deeply pinnately divided, with the segments mostly linear and coarsely toothed. Flower heads 5-10 cm (2-4 in.) wide, bell-shaped, in spike-like groups above the basal leaves, from June to September; ray flowers yellow; numerous, up to 4 cm (1 1/2 in.) long; disk flowers yellow. Fruits broad, flattened achenes about 1.3 cm (1/2 in.) long, notched at the tip.

PARTS USED: Stems and roots

MEDICINAL ASPECTS

Indian: Chewed plant parts for sap. [Pawnee] Pounded roots for a tea used to treat "general debility"; .

Euroamerican: Chewed plant parts for resinous sap to clean teeth and freshen breath.²²



Common Names: Purple coneflower, Black sampson
 Technical Name: *Echinacea angustifolia* DC.
 Indian Names: [Pawnee] *ksapitahako* (hand to whirl); *saparidu hahts* (mushroom medicine)²³

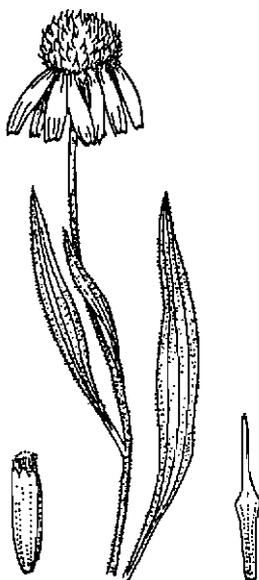
DESCRIPTION: Stem conspicuously hairy or occasionally glabrous; 5-15 dm (1/2-2 ft.) tall. Leaves broad (1.5-5 times as long as wide) usually somewhat toothed; the basal long-petioled, stem leaves progressively less so. Disc florets bronzy.²⁴

PARTS USED: Roots and entire plant

MEDICINAL ASPECTS

Indian: The purple coneflower was the most widely used medicinal plant of the Plains Indians. It was used as a painkiller and for a variety of ailments, including toothache, coughs, colds, sore throats, and snake bite; [Kiowa] cough medicine.

Euroamerican: Root was used by early settlers in Oklahoma to treat human ailments and to stimulate the appetite of livestock. The roots are know to be mild antibiotics against *streptococcus* and *staphylococcus aureus*. Contains materials that stimulate the immune system in man.²⁵



Common Names: Texas croton, Croton
 Technical Name: *Croton texensis* (Kl.) Muell. Arg.
 Indian Names: [Kiowa] *tai-me* (meaning "sun dance weed")²⁶

DESCRIPTION: Free branched and usually strong-scented herb, 2.3-7.5 dm (3/4-2 1/2 ft.) tall; often grayish from many branched hairs; those in this area are monoecious. Lower leaves alternate, but upper sometimes opposite or whorled. Pistillate flowers usually at base of staminate cluster; the terminal inflorescence often appears to be axillary, as branches lengthen beyond them.²⁷

PARTS USED: Leaves, entire plant

MEDICINAL ASPECTS

Indian: [Lakota] used the leaves in a tea to treat stomach pains; [Pawnee] Leaf tea was used as a bath to treat sick babies.
 Euroamerican: Once used in Europe for a variety of medical treatments. Today oil is a reported carcinogen, known to cause dermatitis and is highly toxic (20 drops are lethal).²⁸



Common Names: Dogbane, Indian hemp dogbane
 Technical Name: *Apocynum cannabinum* L.
 Indian Names: [Kiowa] *ghola* (no translation)²⁹

DESCRIPTION: Stems usually branched and erect, 2-10 dm (3/4-3 1/4 ft.) tall, branches often reddish, lateral branches usually overtop inflorescence. Leaves of primary stem generally narrowed at base to distinct petioles 2-7 mm long; those of branches often without petioles. Terminal cymes of ascending flowers; the central cyme flowering first.³⁰

PARTS USED: Roots, plant sap (latex)

MEDICINAL ASPECTS

Indian: Tea made from boiled roots was used as an oral contraceptive; [Kiowa] milky latex used as a chewing gum.
 Euroamerican: Early settlers used root as a tonic febrifuge and purgative. Also recognized it as poisonous. Root was regarded as a cardiac stimulant in the *U.S. Pharmacopoeia* from 1831 to 1916.³¹



Common Names: Kansas gayfeather, dotted gayfeather, Blazing star
 Technical Name: *Liatris punctata* Hook.
 Indian Names: [Pawnee] *kahtsu-dawidu* (round medicine)

DESCRIPTION: Perennial herbs, 1-8 dm (4-32 in.) tall, stems single or in clusters from rootstocks. Leaves alternate, linear, up to 15 cm (6 in.) long, closely spaced, arching upwards, surfaces dotted. Flower heads as tufts arranged in cylindrical groups at tops of branches, from July to October; florets tubular, 9-12 mm (3/8-1/2 in.) long, pink-purple, with 5 pointed lobes and long straplike styles protruding. Fruits dry, 10-ribbed, 6-7 mm ($\pm 1/4$ in.) long, each with a tuft of feathery bristles.

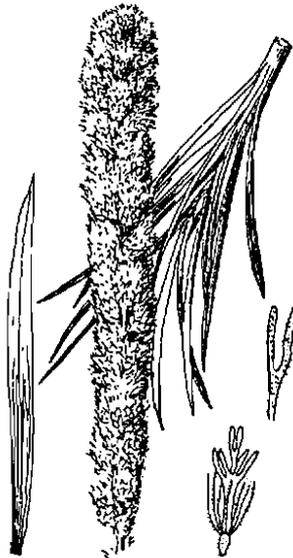
PARTS USED: Roots

FOOD ASPECTS

Indian: [Kiowa] Gathered roots in spring and baked over a fire; plant is drought resistant and therefore a dependable food source.
 Euroamerican: Because of a lack of knowledge of its medicinal characteristics it cannot be recommended as a food.³²

MEDICINAL ASPECTS

Indian: [Pawnee] Roots and leaves were boiled and fed to children as a tea to control diarrhea.
 Euroamerican: Roots used as remedy for sore throats and cure for rattlesnake bites.³³



Common Names: Groundplum, milkvetch
Technical Name: *Astragalus crassicarpus* Nutt.
Indian Names: [Dakota] *pte ta wote* (buffalo food)

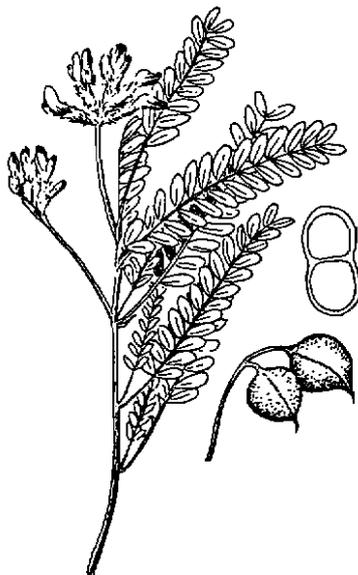
DESCRIPTION: Perennial herbs from thick, woody taproots; several stems usually lying on the ground, 1-6 dm (4-24 in.) long, hairy. Leaves alternate, pinnately compound, 4-13 cm (1 5/8-5 in.) long, with 15-27 leaflets, elliptic to oblong, lower surfaces hairy. Flowers in elongated groups among leaves, from March to June; petals 5, upper one large and erect, lower two boat-shaped, two wings at sides, purple, light blue, or rarely whitish.

PARTS USED: Green pods (raw, cooked, pickled)

FOOD ASPECTS

Indian: [Pawnee] Ate spring fruits to prevent thirst.

Euroamerican: Pods taste like a sweet, watery green pea and are a good snack food. The large rounded fleshy fruits distinguish the groundplum from its poisonous relatives (locoweeds, poisonous milkvetches, etc.).³⁴



Common Names: Wild Indigo, False Indigo
Technical Name: *Baptisia spp.* (blue and white species)³⁵

DESCRIPTION: Herbaceous perennial herbs, 2-6 dm (8-24 in.) tall, usually much branched, the lateral branches often exceeding the central in length. Leaves commonly palmately trifoliolate. Inflorescence: terminal racemes of usually showy flowers.³⁶

PARTS USED: All parts

MEDICINAL ASPECTS

Indian: [Pawnee] ground seeds mixed with buffalo fat and rubbed on abdomen to treat colic; [Osage] used unspecified plant part as an eyewash.

Euroamerican: Moderate doses increase respiration and reflex action.³⁷ Blue species used as a fabric dye.



Common Names: Leadplant, Tea plant
Technical Name: *Amorpha canescens* Pursh
Indian Names: [Omaha & Ponca] *te-huntonhi* (buffalo bellow plant)³⁸

DESCRIPTION: Shrubby plant, usually densely gray-hairy; 3-8 dm (1-2 1/2 ft.) tall. Leaves odd-pinnate, with 15-25 pairs of rounded leaflets, these rarely more than 17 mm long.³⁹

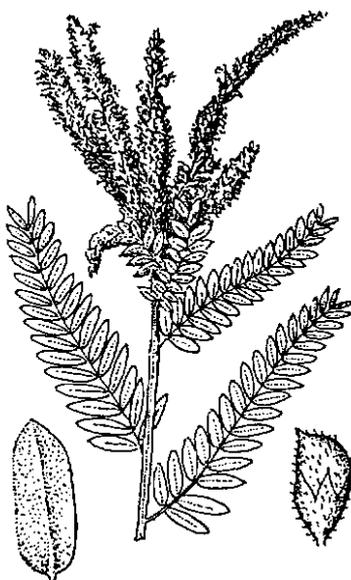
PARTS USED: Leaves, twigs

FOOD ASPECTS

Indian: [Omaha] leaves dried and used as tea (from late spring and summer).⁴⁰

MEDICINAL ASPECTS

Indian: [Omaha] leaves which contain astringent properties were used to promote healing of wounds.⁴¹



Common Names: American licorice, Wild licorice
Technical Name: *Glycyrrhiza lepidota* Pursh
Indian Names: [Pawnee] *pitahatus* or *pitahatusakitstsuhas* (not translated)

DESCRIPTION: Perennial herbs from deep, woody rhizomes; stems 3-10 dm (12-40 in.) tall, branching, dotted with glands. Leaves alternate, pinnately compound; leaflets 7-21, oblong to lance-shaped with sharp points at tips, up to 5 cm (2 in.) long, surfaces scaly when young and dotted with glands later. Flowers in narrow, elongated groups among leaves, from May to August; petals 5, white or yellowish, top one larger and erect, lower two boat-shaped, two wings at sides. Fruits dry, oblong, 1-2 cm (3/8-3/4 in.) long, covered with hooked prickles; seeds olive green to brown, smooth.

PARTS USED: Roots, leaves

FOOD ASPECTS

Indian: Root was eaten raw or baked.
Euroamerican: The roots were chewed for their pleasant licorice taste.⁴²

MEDICINAL ASPECTS

Indian: [Pawnee] Plant was probably used as medicine.
Euroamerican: Recently used to mask unpleasant tasting drugs. Useful treatment for gastric ulcers but causes unpleasant side effects. Also can cause circulatory system problems.⁴³



Common Names: Purple poppy mallow, Cowboy rose, Winecup
Technical Name: *Callirhoe involucrata* (T. & G.) Gray
Indian Names: [Lakota] *Pezhuta nantiazilia* (smoke treatment medicine)⁴⁴

DESCRIPTION: A perennial herb with numerous spreading or erect stems, 7 dm (28 in.) long. The leaves alternate and are palmately lobed, with numerous linear segments. The showy, five-part, rose to purple flowers are solitary on short stalks.⁴⁵

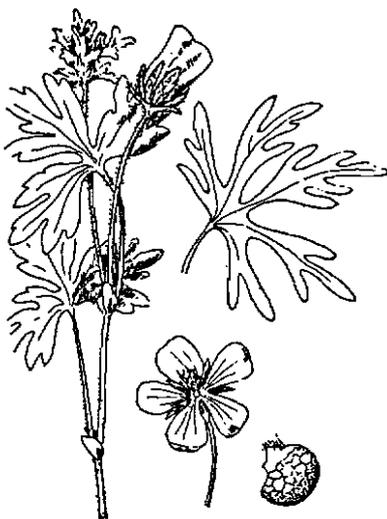
PARTS USED: Roots (cooked), leaves

FOOD ASPECTS

Indian: [Osage] Dug roots and stored for winter food.
Euroamerican: Edible roots. Mucilaginous leaves are good for thickening soup.⁴⁶

MEDICINAL ASPECTS

Indian: [Lakota] used as a smoke treatment for head colds by inhaling fumes from slowly burning roots. [Dakota] boiled roots and used as a medicinal tea or as a bathing treatment for external aches and pains.⁴⁷



Common Names: Butterfly milkweed, Butterfly weed
 Technical Name: *Asclepias tuberosa* L.
 Indian Names: [Omaha and Ponca] *makan saka* (new medicine); *kiu makan* (wound medicine)

DESCRIPTION: Perennial herb 3-9 dm (1-3 ft.) tall, with woody rootstocks; stems erect, long-hairy, numerous, mostly unbranched, containing watery sap. Leaves alternate, simple, crowded, lance-shaped, shiny green and mostly smooth above, velvety beneath. Flowers in showy, rounded to flat-topped groups near ends of branches, from May to August; petals 5, bent downward, orange to red or sometimes yellow, topped by a crown of 5 erect hoods, each one containing a short horn.⁴⁸

PARTS USED: Root

FOOD ASPECTS

Indian: Large tuber was boiled.⁴⁹

MEDICINAL ASPECTS

Indian: [Omaha and Ponca] Ate root for bronchial and pulmonary ailments and as a treatment for old wounds.

Euroamerican: Once called pleurisy root because it was thought to cure lung ailments.⁵⁰

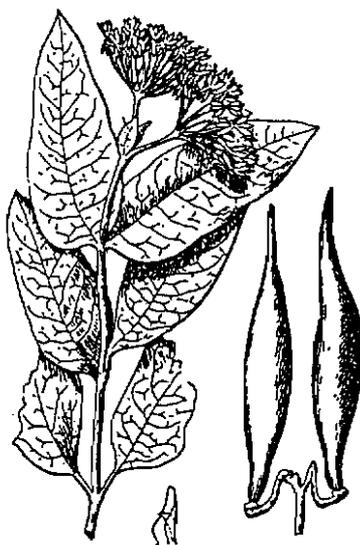


Common Names:	Common milkweed
Technical Name:	<i>Asclepias syriaca</i> L.
Indian Names:	[Pawnee] <i>kari'piku</i> (no translation); [Dakota] <i>pannun' pala</i> (two little workbags of women)

DESCRIPTION: Perennial herbs with erect stems 6-20 dm (24-80 in.) tall, hairy, containing milky white juice. Leaves opposite, oval to elliptic or oblong, hairy. Flowers small, in rounded clusters at ends of stalks among upper leaves, from May to August; petals 5, bent downward, pinkish to purple, topped by a crown of 5 erect lobes, pinkish to white.

FOOD ASPECTS

- Indian:** [Osage] Compared cabbage to milkweed and used young sprouts and flower buds.
- Euroamerican:** Chewing gum (dried milky sap). Experimentally used as a substitute for latex. Silky fibers enclosed in pod were used in life jackets during World War II. Kansas State University is breeding a hybrid milkweed that may be used as an alternative crop in Midwestern agriculture.⁵¹



Common Names: Cut-leaf nightshade, Nightshade, Carolina nightshade
 Technical Name: *Solanum triflorum* Nutt. and *Solanum carolinense* L.
 Indian Names: [Lakota] *canhlog anskiski'ta* (rough weed)

DESCRIPTION: Strong-smelling annual herb 3-4 dm (1-1 1/4 ft.) tall; stems typically much branched from the base, somewhat hairy. Leaves alternate, deeply pinnately divided, 2-5 cm (3/4-2 in.) long, about 2 cm (3/4 in) wide. Flowers in groups of 2-3, arising from bases of leaves, 8-12 mm (5/16-1/2 in.) wide, from May through September; petals 5, white, fused at the bases. Fruits small, spherical, black berries containing tiny yellowish seeds.

PARTS USED: Berries, roots.

MEDICINAL ASPECTS

Indian: [Lakota] Berries of the cut-leaved nightshade were used to treat stomach aches.

Euroamerican: The only native nightshade in the Prairie Bioregion used by medical doctors was the horse nettle, *S. carolinense* L. Its fruits or berries were used as a sedative and an antispasmodic by doctors.⁵²



Common Names: Wild onion, Prairie onion
Technical Name: *Allium canadense* L.
Indian Names: [Osage] *monzonxe* (earth, to bury); [Pawnee] *osidiwa*⁵³

DESCRIPTION: Stem stout, up to 2-9 dm (8-35 in.) tall; plant with strong odor. Leaves very narrow, soft, flaccid, smooth, flattish; basal except sometimes a few very low on stem. Inflorescence; umbel usually consisting only of white to purplish sessile, small bulbs. Flowers, rarely present, pedicelled.⁵⁴

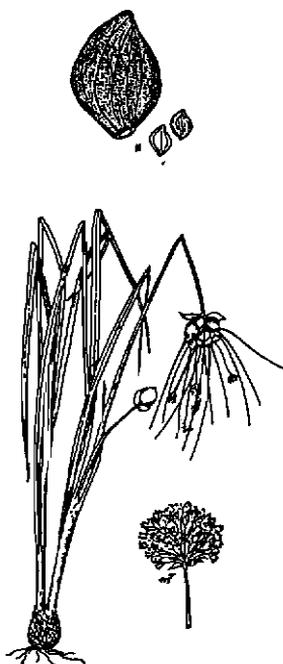
PARTS USED: Bulb (raw, pickled, cooked); leaves (raw or uncooked)

FOOD ASPECTS

Indian: Wild onions are probably the best known wild food.
Euroamerican: Used for greens and flavoring. Onions contain quantities of inulin which is difficult for humans to digest. Plants can be confused with a poisonous prairie plant, death camas (*Zygadenus nuttalli*).⁵⁵

MEDICINAL ASPECTS

Indian: Variety of medical uses.
Euroamerican: Known to cause gastroenteritis in children; cures scurvy-like illness. High in vitamins A and C.⁵⁶



Common Names: Prairie parsley, Carrot-leafed lomatium
 Technical Name: *Lomatium orientale* (Nutt.) Coult. & Rose
 Indian Names: [Pawnee] *pezhe bthaska* (flat herb)

DESCRIPTION: Perennial herbs 1-5 dm (4-20 in.) tall, growing from thickened taproots, no stems. Leaves clustered at base, oval to oblong, 1-20 cm (3/8-8 in.) long, divided into three segments, each of these dissected into narrow segments. Flowers in round, flat clusters on stalks rising above leaves, from March to May; petals 5, separate, small, yellow. Fruits dry, oval to oblong, 5-12 mm (3/16-1/2 in.) long, with longitudinal ribs and wings.

PARTS USED: Root, seeds, other unspecified plant parts

FOOD ASPECTS

Indian: [Unspecified tribes] Dried roots ground into flour and baked into cakes or biscuits.
 Euroamerican: Edible leaves have a strong parsley taste and are good in salads.⁵⁷

MEDICINAL ASPECTS

Indian: [Pawnee] Used seeds and other plant parts as love charms. Believed that the seeds would make them attractive to all persons.⁵⁸



Common Names: Prostrate pigweed
 Technical Name: *Amaranthus grecizans* L.
 Indian Names: [Lakota]wahpe'-maka'yata'pi-iyec'eca (leaves spread out on ground); yus'pu-la-ota (pulling off many things with the hand)

DESCRIPTION: Annual herbs with prostrate stems 1-6 dm (4-24 in.) long, forming mats. Leaves alternate, oval to elliptic or spoon-shaped, 8-40 mm (5/16-1 1/2 in.) long, pale green, smooth, usually white-margined. Flowers small, in dense clusters among leaves, from June to October; male and female separate, sepals 4, oblong, green with white margins, no petals. Fruits dry, roundish, 2.5-3.2 mm ($\pm 1/8$ in.) long, sometimes reddish, each containing one seed, lens-shaped, black and shiny.

PARTS USED: Foliage, seeds

FOOD ASPECTS

Indian: Young plants (spring best) cooked; seeds (fall) eaten raw, cooked as cereal or mush, or used as flower. Long history of use as evidenced by seeds in archeological remains. Amaranth seeds found in Two Deer Site near El Dorado, Kansas, which was occupied 800 to 100 A.D.

Euroamerican: Current interest in growing amaranth for commercial use.⁵⁹



Common Names: Wild plum, American plum, Osage plum
 Technical Name: *Prunus americana* Marsh.
 Indian Names: [Pawnee] *niwaharit* (plum) or *niwaharit-nahaapi* (plum tree)

DESCRIPTION: Shrubs or small trees, 3-8 m (3-24 ft.) tall, usually forming thickets, small branches sometimes spiny. Leaves alternate, egg-shaped to oval 6-10 cm (2 3/8-4 in.) long, upper surfaces shiny green, lower surfaces slightly hairy, margins sharply toothed. Flowers in groups of 2-5 at ends of branchlets, usually appearing before leaves in April and May; petals 5, separate, oval, 8-12 mm (5/16-1/2 in.) long, white. Fruits fleshy, oval, 2-2.7 cm (3/4-1 1/16 in.) long, reddish-purple or yellowish, each containing one seed.

PARTS USED: Ripe fruits, bark, roots

FOOD ASPECTS

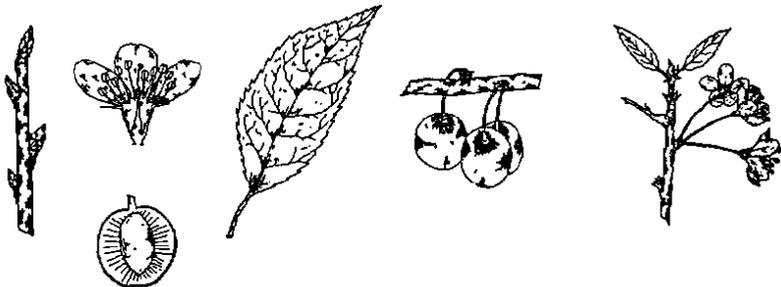
Indian: Raw, cooked, in jelly or jam, and dried; [Pawnee] Dried plums without removing the pits; [Omaha] Planted traditional cultivated crops when wild plums bloomed.

Euroamerican: Used extensively by early settlers in Kansas for sauce, pies, puddings, jelly and preserves.⁶⁰

MEDICINAL ASPECTS

Indian: [Omaha] Scraped and boiled bark from roots and applied to skin abrasions.

Euroamerican: Known to have astringent and sedative qualities, bark used as a tonic, and barks and roots have antibacterial properties.⁶¹



Common Names: Pussy toes
 Technical Name: *Antennaria* species
 Indian Names: [Lakota] *canhlo'gan hu wanji'la* (weed with one stem)
 or *poi'piye* (to doctor swellings with)

DESCRIPTION: These perennial herbs 10-30 cm (4-12 in.) tall form colonies. The leaves, covered with dense, whitish hairs, are spoon-shaped and mostly basal. Flower heads are compact, fuzzy, and at the tip of short stalks. The name "pussy-toes" refers to the shape of these heads, which later contain small, dry fruits that are dispersed in late spring. Pussy-toes are widespread in North America.

PARTS USED: Leaves, stems, entire plant

MEDICINAL ASPECTS

Indian: Rattlesnake bite cure, stems chewed as cough remedy, leaves used as an ingredient in Indian tobacco *kinnikinnik*.

Euroamerican: Described as an excellent remedy for liver inflammation and mild recurrence of former hepatitis symptoms—a tablespoon of the chopped plant steeped in water. It is also a good non-irritating astringent for intestinal irritations above the ileocecal valve.⁶²



Common Names: Common Ragweed, Little Ragweed
Technical Name: *Ambrosia artemisiifolia* L.
Indian Names: [Kiowa] *ko-'khad-la-tzan-go-pan-ya* (horse worm plant) or a *'sahe* (green plants) may refer to plant's bitter taste

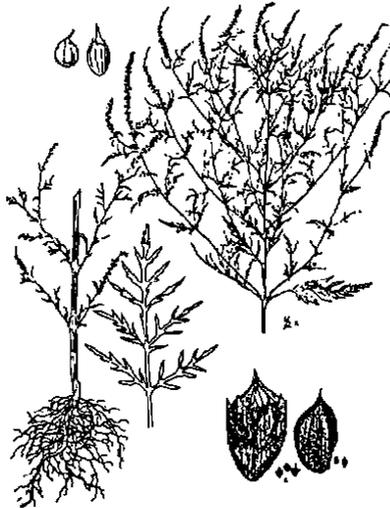
DESCRIPTION: The plant contains both male and female flowers; the male flower is the more conspicuous with its copious pollen. It grows to 10 dm (3 1/2 ft.), with a coarse stem that branches frequently. The male flowers are found on the small stems and are like tiny buttons of yellow pollen. The female flowers are tiny, green and found in clusters at the junction of the leaf and stem. The leaves are up to four inches long, fern-like and deeply toothed. Ragweed blooms from July to September.

PARTS USED: Entire plant

MEDICINAL ASPECTS

Indian: [Kiowa] Rubbed pieces of boiled ragweed on sores as medicine and as a remedy for a skin disease of horses. Found in large quantities at archeological sites.

Euroamerican: May be responsible for up to 90% of pollen-induced allergies in the United States.⁶³



Common Names: Giant Ragweed, Horse Weed
Technical Name: *Ambrosia trifida* L.
Indian Names: [Kiowa] Bloody weed (translated from Kiowa). Plant was feared by Kiowa people, probably because of its bloody exudate.

DESCRIPTION: Annual herbs, stems ridged, 1-3 m (3-10 ft.) tall. Leaves opposite, oval to roundish, 1-2 dm (4-8 in.) long, most divided into 3-5 lobes, surfaces hairy, margins toothed. Flowers small, male in elongated groups at ends of branches, female in clusters among leaves, from July to September, greenish, nodding, yellow pollen conspicuous on male flowers. Fruits dry, egg-shaped, 6-12 mm (1/4-1/2 in.) long, each with a pointed beak and several knobby projections, ripening in September and October.

PARTS USED: Seeds

FOOD ASPECTS

Indian: Used as food by prehistoric Indians (possibly cultivated).⁶⁴



Common Names: Wild Rose, Prairie wild rose, Arkansas rose
Technical Name: *Rosa arkansana* Porter
Indian Names: [Pawnee] *pahatu* (red)

DESCRIPTION: Shrubs 1-5 dm (4-20 in.) tall, sometimes dying back to ground each year, branches with slender prickles. Leaves alternate, pinnately compound, leaflets 9-11, egg-shaped to elliptic, 1-4 cm (3/8-1 5/8 in.) long, lower surfaces usually hairy, upper 2/3 of margins toothed. Flowers in groups of three or more at ends of branches from May to August; petals 5, separate, rounded, 1.5-2.5 cm (5/8-1 in.) long, pink to white, rarely deep rose. Fruits dry, plump, with hairs along one side, 15-30 enclosed in fleshy covering (hip) that turns red when ripe in late August to September.

PARTS USED: Fruits, young shoots, leaves, flowers, roots, stems, insect galls

FOOD ASPECTS

Indian: [Pawnee] The fruits were an emergency food; [Osage] gathered by women and children to ward off starvation.⁶⁵

MEDICINAL ASPECTS

Indian: [Pawnee] Used crushed insect galls, collected on lower part of the stems as a dressing for burns.

Euroamerican: Three fresh rose fruits (hips) contain as much vitamin C as an orange.⁶⁶



Common Names: White sage, Prairie sage
Technical Name: *Artemisia ludoviciana* Nutt.
Indian: [Pawnee] *kiwaut* (no translation given)

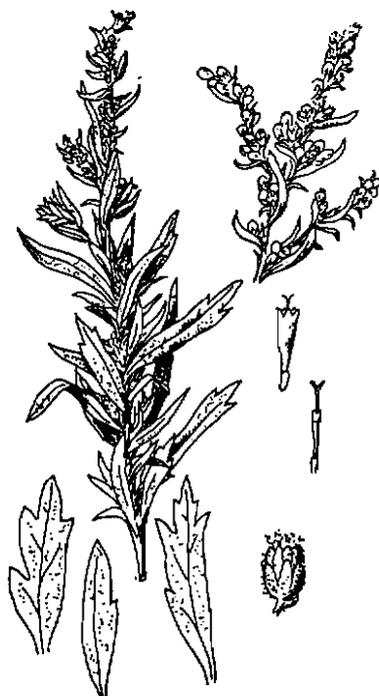
DESCRIPTION: White-woolly perennial herbs 3-7 dm (1-2 1/4 ft.) tall, with a strong odor of sagebrush; stems erect, often clustered from creeping rhizomes. Leaves alternate, entire to irregularly toothed or lobed, 3-11 cm (1 1/4-4 1/2 in.) long, up to 1.5 cm (9/16 in.) wide. Flower heads small, greenish, in tight clusters among leaves near the ends of stems, from August through September. Fruits dry, smooth, broadly cylindrical achenes.

PARTS USED: Leaves, stems

MEDICINAL ASPECTS

Indian: [Kiowa] Made drink of the foliage to relieve lung and stomach problems and reduce phlegm or chewed leaves and swallowed the juice; [Pawnee] women drank tea made with the leaves to relieve menstrual problems.

Euroamerican: Food and Drug Administration considers *Artemisia* "a volatile oil with an active narcotic poison."⁶⁷



Common Names:	Violet wood sorrel, Sheep sorrel
Technical Name:	<i>Oxalis violacea</i> L.
Indian Names:	[Pawnee] <i>skidadihorit</i> (sour like salt); <i>askirawiyu</i> (foot, water, stands) probably means found near wet areas; <i>kait</i> (salt)

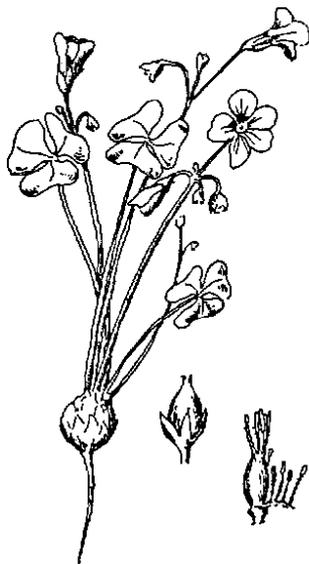
DESCRIPTION: Perennial herbs, growing from scaly bulbs, no stems. Leaves clustered at base, 6-12 cm (2 1/2-4 3/4 in.) long, divided into three leaflets, heart-shaped. Flowers in round flat-topped clusters at ends of stalks taller than leaves, from April to June (sometimes again in September and October); petals 5, separate, 1-2 cm (3/8-3/4 in.) long, pinkish-purple, rarely white. Fruits dry, cylindrical, 4-6 mm ($\pm 1/4$ in.) long, opening longitudinally to release seeds with netlike pattern on surfaces.

PARTS USED: Leaves, flowers, bulbs

FOOD ASPECTS

Indian: [Pawnee] Children were reported to eat leaves, flowers and flower stems and bulbs; [Kiowa] chewed leaves to relieve thirst; [Osage] ate the leaves.

Euroamerican: A little bit of wood sorrel in salad or as a snack is healthful; a large quantity in one meal or eaten over a period of time can be harmful, because the oxalates in it tie up calcium in the body and can cause poisoning.⁶⁸



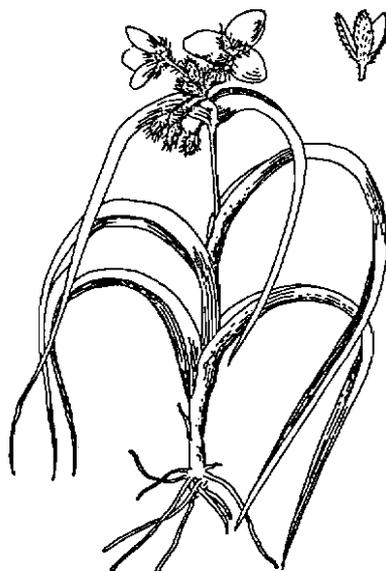
Common Names: Spiderwort
Technical Name: *Tradescantia occidentalis* (Britt.)
Indian Names: None found in literature

DESCRIPTION: Perennial herbs to 5 dm (20 in.) tall, stems erect and often branching. Leaves alternate, linear to lance-shaped, often folded, 9-33 cm (3 1/2-13 in.) long, bases wrapped around stems and wider than blades. Flowers lasting one day, in flat-topped groups at ends of main stems or branches, from May to August; petals 3, broadly egg-shaped, 0.7-1.6 cm (1/4-5/8 in.) long, pink, purple, or blue. Fruits dry, small, roundish, opening into three sections; seeds gray, flat, oblong, and pitted. The name spiderwort refers to the plant's mucilaginous sap that can be drawn into thin strands similar to spider silk.

PARTS USED: Stems, leaves, flowers

FOOD ASPECTS

Indian: No uses found in sources examined
Euroamerican: Foliage and flowers are edible either raw in salads or cooked as a pot herb. Recommended by George Washington Carver as a "rich flavored plant."⁶⁹



Common Names: Wild strawberry
 Technical Name: *Fragaria virginiana* Duchesne
 Indian Names: [Pawnee] *aparuhurada* (berry, ground); [Osage] *ba-stse'ga* (not translated)

DESCRIPTION: Perennial herbs with thick rhizomes, spreading and forming colonies by horizontal stems that root and produce plantlets. Leaves in rosettes, each with 3 leaflets, broadly elliptic or 4-angled, margins toothed. Flowers in clusters on stalks shorter than leaves, from March to June; petals 5, separate, egg-shaped.

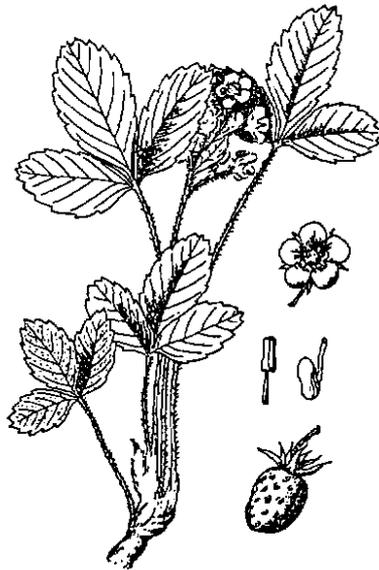
PARTS USED: Fruit, young leaves

FOOD ASPECTS

Indian: Leaves used in making tea; [Pawnee] fresh and dried fruits were used for flavoring various dishes.⁷⁰

MEDICINAL ASPECTS

Euroamerican: Used as an astringent and as a tonic to treat bowel and bladder weaknesses in children.⁷¹



Common Names: Smooth sumac, Sumac
 Technical Name: *Rhus glabra* L.
 Indian Names: [Kiowa] *maw-kho-la* (tobacco mixture); [Pawnee] *nuppikt* (sour top)

DESCRIPTION: Shrubs 3-5 m (9-15 ft.) tall, forming dense thickets. Leaves alternate, pinnately compound, with 11-31 leaflets, each lance-shaped to somewhat oval, 7-9 cm (2 3/4-3 1/2 in.) long, upper surfaces dark green and shiny, margins toothed. Flowers small, in large, branched groups at end of branches, sometimes male and female separate, in May and June; petals 5, greenish. Fruits fleshy, rounded, 3.5-4.5 mm (1/8-3/16 in.) in diameter, red and hairy, ripening in August and September.

PARTS USED: Ripe berries, roots and shoots, leaves, bark, fruits

FOOD ASPECTS

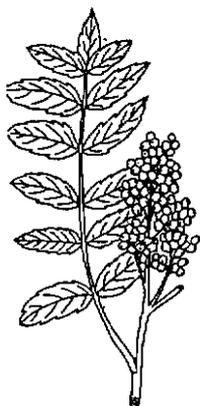
Indian: Roots used for a dye, stems for basketry; the leaves as a source of tannin for leather and dried leaves for smoking mixtures; the berries for tea, and berries for food.

Euroamerican: Ripe berries were used in making "lemonade". Fruits have a citric acid taste from the tannin content.

MEDICINAL ASPECTS

Indian: Used roots for a yellow dye; used as an astringent to stop bleeding; [Kiowa] smoked mixture containing sumac leaves to treat tuberculosis.

Euroamerican: Found to be high in antibacterial compounds useful in reducing tooth decay and fighting other ailments. Often sumac was chewed to extract benefits.⁷²



Common Names: Kansas sunflower, Annual sunflower
Technical Names: *Helianthus annuus L.*
Indian Names: [Kiowa] *ho-son-a* (looking at you); [Pawnee] *kirik-tara-kata* (yellow eyes)

DESCRIPTION: Annual herbs 6-25 dm (2-10 ft.) tall, stems hairy, branching at top. Leaves mostly alternate, heart-shaped to spade-shaped, surfaces rough, margins usually toothed. Flower heads at ends of branches, from July to September; ray florets 17 or more, yellow, disk florets numerous, reddish to purple.

PARTS USED: Seeds

FOOD ASPECTS

Indian: Ancestor of present domesticated sunflowers used for oil and flour; seeds used raw, cooked, roasted or dried and ground, and as a source of oil; flower body (summer--boiled; roasted shells or seeds for a coffee substitute); meal or flour also made into thin cakes and baked in hot ashes. These cakes are gray in color, rather coarse-looking, but palatable and very nutritious.⁷⁴

MEDICINAL ASPECTS

Indian: [Pawnee] Women who became pregnant while still nursing a child took a sunflower seed medicine to prevent sickness in the child.⁷⁵



Common Names: New Jersey tea, Indian tea
Technical Name: *Ceanothus americanus* L. var. *pitcheri* T. & G.
Indian Names: None available in literature

DESCRIPTION: This short, much-branched shrub, 1 m (40 in.) tall, has egg-shaped, hairy, and finely toothed leaves. The flowers are delicate, white, five-parted, and in elongate or rounded groups at the ends of young branches. The fruits are dry, black, three-lobed capsules, each lobe containing a single reddish-brown seed.

PARTS USED: Leaves, flowers

FOOD ASPECTS

Indian: Leaves used in making tea.
Euroamerican: Made a suitable substitute for black tea.

MEDICINAL ASPECTS

Indian: Used flowers as soap; [Dakota] Used both leaves and roots as beverage and remedy.
Euroamerican: Plant produces a strong astringent and works as a mild hypotensive alkaloid. Used flowers as a soap.⁷⁶



Common Names: Wavy-leaved thistle, Thistle
 Technical Name: *Cirsium undulatum* (Nutt.) Spreng.
 Indian Names: [Kiowa] *sengts-on* (thistle)

DESCRIPTION: Perennial herbs with erect stems 4-10 dm (16-40 in.) tall, densely covered with white hairs. Leaves alternate, elliptic, those at base lobed and wavy, lobes tipped with yellow spines; upper leaves oval to lance-shaped, shallowly lobed or nearly entire, becoming smaller near tops of plants. Flower heads globular, with cuplike bases of spiny modified leaves, from June to August; florets tubular, purple.

PARTS USED: Leaves, stalks, flowers, seeds, roots

FOOD ASPECTS

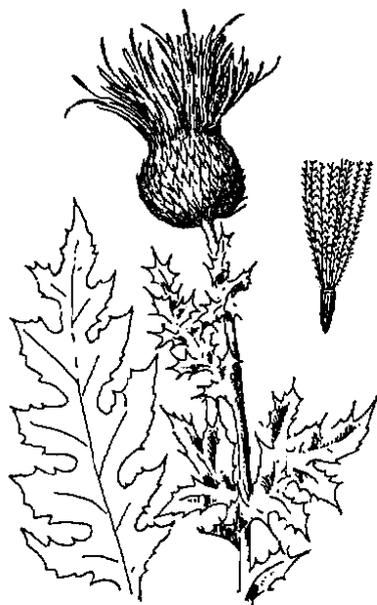
Indian: [Kiowa] Roots used as food.

Euroamerican: Root and crown were boiled and considered tender and tasty.⁷⁷

MEDICINAL ASPECTS

Indian: [Kiowa] Made tea of blossoms of similar species for use in treating burns and sores.

Euroamerican: Formerly used in folk medicine as a diuretic, tonic and astringent.⁷⁸



- Common Names:** Prairie wild turnip, Indian turnip, Scruf pea; an allied species with purple flowers is *Psoralea purpurea* (purple prairie clover)
- Technical Name:** *Psoralea esculenta* Pursh
- Indian Names:** [Pawnee] *patsuraka*; [Osage] *dogoe* (potato)

DESCRIPTION: Perennial herbs from deep taproots, thick and tapering toward both ends; stems 1-3, densely hairy, 5-15 cm (2-6 in.) tall. Leaves alternate, often appearing clustered, divided into five fingerlike segments, each one elliptic to egg-shaped, 2.5-5 cm (1-2 in.) long, dotted with glands, lower surfaces hairy. Flowers in dense, narrow clusters among leaves from May to July; petals 5, upper one larger and erect, two lower ones boat-shaped, two wings at sides, blue fading to yellowish. Fruits dry, oval, 5-7 mm (3/16-5/16 in.) long, each tapering into a beak; seeds oblong, plump, olive green and often purple-spotted or dark brown.

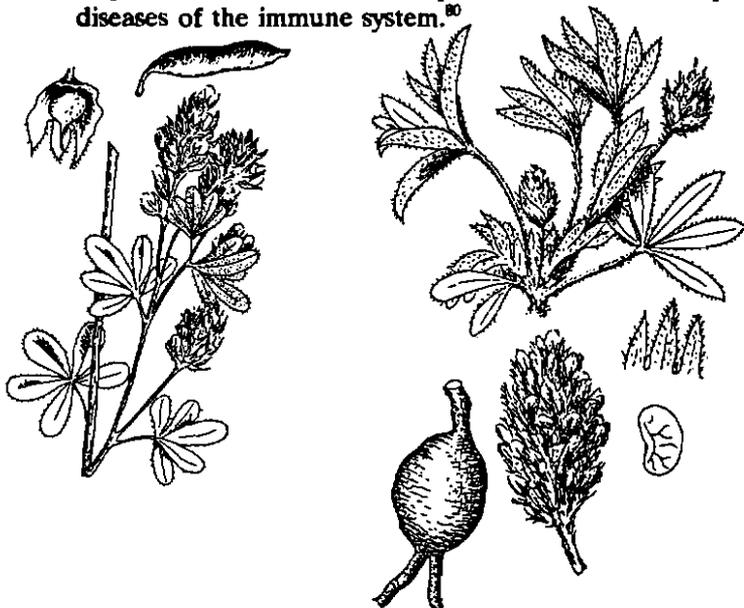
PARTS USED: Roots, leaves

FOOD ASPECTS

- Indian:** Most important wild food used by the Plains Indians. Prepared by pounding into flour, boiling with meat and fat, or eating raw.⁷⁹

MEDICINAL ASPECTS

- Indian:** Various tribes used to treat internal and external ailments.
- Euroamerican:** Reported as substance to treat psoriasis, leukemia and possibly diseases of the immune system.⁸⁰



Common Names: L. yarrow, Milfoil
 Technical Name: *Achillea millefolium*
 Indian Names [Osage] *wetsaoindse egon* (rattlesnake's tail-like);
 [Lakota] *xanta canxlogan* (cedar weed) and *taopi paxuta*
 (wound medicine)⁸¹

DESCRIPTION: Usually unbranched stems, 2-6 dm (3/4-2 ft.) tall; strong scented. Leaves gray-green and finely dissected, numerous along stem. Inflorescence flattish-topped, each head less than 1 cm across, with 4-6 white rays.⁸²

PARTS USED: Flowers and leaves

MEDICINAL ASPECTS

Indian: [Osage] Used as toothache medicine, flowers used as perfume; [Pawnee] Inserting a one-inch long piece of the stalk into the skin and setting fire to the exposed end and allowing it to burn down into the flesh relieved pain. Sometimes several pieces were inserted near each other.

Euroamerican: Listed in the *U.S. Pharmacopoeia* 1863 to 1882 as a tonic, stimulant and emmenagogue. Not poisonous but may cause allergic reaction in those susceptible to dermatitis.⁸³



Common Names: Willow
Technical Name: *Salix spp.* (several species used)
Indian Names: [Pawnee] *kitapato*; [Kiowa] *ai-pee-a-gaw, sen-ya-da*

DESCRIPTION: Colonial shrubs 5-30 dm (1 1/2-10 ft.) tall; young branches brown and hairy. Leaves alternate, simple, lance-shaped, 6-10 cm (2 3/8-4 in.) long, upper surfaces green and smooth, lower surfaces silvery-white and hairy, margins entire. Male and female flowers in separate groups on different plants, from April to May. Fruits are small, hairy capsules that open to release tiny seeds, each with a tuft of long, silky hairs at the base.

PARTS USED: Leaves, twigs

MEDICINAL ASPECTS

Indian: [Kiowa] Leaves used in tea which was rubbed on ailing body parts to relieve rheumatism and treat pneumonia; baked was chewed to relieve toothache.

Euroamerican: Used as a cure for headache, fever, colds, kidney problems and as treatment for dysentery and irritated skin. Salicin, the well-known pain killer present in all willows, was officially listed in the *U.S. Pharmacopoeia* from 1882 to 1926 and the *National Formulary* from 1936 to 1955. Aspirin, acetyl salicylic acid (a closely related compound) and other synthetic substitutes have been popular since the late 1800s.⁸⁴



GLOSSARY

- ALKALOID.** An organic substance of basic chemical properties.
- ASTRINGENT.** A substance that has a contracting or constrictive effect on bodily tissues.
- COROLLA.** A term used collectively for all the petals of the flower.
- CORYZA.** Acute inflammation of the mucous membrane of the nasal cavities.
- DIAPHORETIC.** A substance that produces perspiration.
- DIURETIC.** Increasing the volume of urine excreted.
- EMMENAGOGUE.** A medicine that promotes menstrual discharge.
- ETHNOBOTANY.** The study of the uses of plants by man.
- EXPECTORANT.** Promoting the discharge of phlegm or other fluid from the respiratory tract.
- FEBRIFUGE.** Serving to dispel or reduce fever.
- FLORETS.** Name applied to small flower.
- GLABROUS.** No hairs present, the surface smooth and free of characteristics.
- GRAMINOID.** Grass-like sedges, rushes, grasses.
- HERBACEOUS.** Refers to broad-leaved plants without parts, which survive severe climate conditions by losing all or almost all above ground parts at the end of the growing season.
- HYPOTENSIVE.** Characterized by or causing low blood pressure.
- INFLORESCENCE.** Any grouping or arrangement of flowers.
- INULIN.** A starch of plant origin; difficult for humans to digest.
- MONOECIOUS.** Male and female reproductive structures on the same plant.
- MOXA.** A substance that is burned on the skin as a counterirritant.

PETIOLE. The stalk of a simple leaf blade or compound leaf.

PHARMACOPOEIA. A book, usually published under the jurisdiction of the government, which contains a list of drugs, methods of making medical preparations, etc.

PINNATELY COMPOUND. Doubly branched feather-like leaves with leaflets arranged on each side of a common axis.

PISTILLATE. Flowers that have female reproductive parts with no functional male parts.

PSORIASIS. A chronic skin disease characterized by scaly patches.

PURGATIVE. Medicine or agent that causes evacuation of the bowels.

RACEME. Arrangement of flowers on stalks along a common central stem.

RHIZOME. Underground stem, distinguished from true root by presence of nodes and buds or scale-like leaves.

STAMINATE. Flowers that have male parts but no functional female parts.

STAMEN. The male structure of a plant that bears the pollen.

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NOTES

1. James S. Aber (ed.), *Kansas Academy of Science, Multidisciplinary Guidebook 3*, (Emporia, KS: Emporia State Press, 1990), 7 & 8.
2. *Ibid.*, 19.
3. H. H. Gleason, *Vegetational History of the Middle West. Annals of Association of Geographers*, Vol. 12, 39-85.
4. Aber, *Kansas Academy of Science, Multidisciplinary Guidebook 3*, 17.
5. C. E. Owensby, *Kansas Prairie Wildflowers* (Ames: Iowa State University Press, 1980), Page 3.
6. M. Gilmore, *Uses of Plants by the Indians of the Missouri River Region* (Lincoln: University of Nebraska Press, 1977) reprint of a work first published as the *33rd Annual Report of the Bureau of American Ethnology* (Washington, D.C., 1919), 4.
7. *Ibid.*, 6.
8. *Ibid.*, 6 & 7.
9. *Ibid.*, 5 & 6.
10. Kelly Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide* (Lawrence: University Press of Kansas, 1992), 288 & 289.
11. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide* (Lawrence: University Press of Kansas, 1987), 131-133.
12. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 62.
13. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 150-151.
14. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 156-158.
15. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 239 & 240.
16. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 154-155.
17. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 131-134.
18. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 162 & 163.
19. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 269 & 270.

20. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 110 & 111.
21. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 81 & 82.
22. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 200 & 201.
23. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 85.
24. Erna R. Eisendart, *Missouri Wildflowers of the St. Louis Area* (St. Louis: Missouri Botanical Garden, 1978), 123.
25. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 86-94.
26. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 73.
27. Eisendart, *Missouri Wildflowers of the St. Louis Area*, 214.
28. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 74.
29. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 42.
30. Eisendart, *Missouri Wildflowers of the St. Louis Area*, 90.
31. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 43-45.
32. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 143 & 144.
33. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 138 & 139.
34. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 61-62.
35. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 69.
36. Eisendart, *Missouri Wildflowers of the St. Louis Area*, 223.
37. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 70.
38. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 225.
39. Eisendart, *Missouri Wildflowers of the St. Louis Area*, 220.
40. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 35.
41. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 226.
42. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 120-122.

43. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 114-117.
44. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 69.
45. Eisendart, *Missouri Wildflowers of the St. Louis Area*, 230.
46. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 69-71.
47. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 230.
48. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 54.
49. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 56.
50. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 55-58.
51. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 55-58.
52. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 204-205.
53. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 13 & 14.
54. Eisendart, *Missouri Wildflowers of the St. Louis Area*, 268.
55. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 14 & 15.
56. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 29 & 30.
57. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 147.
58. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 260.
59. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 19-22.
60. *Ibid.*, 170-174.
61. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 273 & 274.
62. *Ibid.*, 227 & 228.
63. *Ibid.*, 33 & 34.
64. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 24 & 25.
65. *Ibid.*, 200 & 201.

66. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 191 & 192.
67. *Ibid.*, 47-51.
68. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 159 & 160.
69. *Ibid.*, 218 & 219.
70. *Ibid.*, 116 & 117.
71. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 246.
72. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 191-193.
73. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 184 & 187.
74. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 124 & 125.
75. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 254.
76. *Ibid.*, 232.
77. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 85 & 86.
78. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 234 & 235.
79. Kindscher, *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*, 184 & 185.
80. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 176-178.
81. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 17-20.
82. Eisendart, *Missouri Wildflowers of the St. Louis Area*, 106.
83. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 18-20.
84. Kindscher, *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, 195-197.

BIBLIOGRAPHY

- Aber, James S. (ed.). *Kansas Academy of Science, Multidisciplinary Guidebook 3*. Emporia, KS: Emporia State Press, 1990.
- Eisendart, Erna R. *Missouri Wildflowers of the St. Louis Area*. St. Louis: Missouri Botanical Garden, 1978.
- Gilmore Melvin R. *Uses of Plants by the Indians of the Missouri River Region*. Lincoln: University of Nebraska Press, 1977. Reprint of a work first published as the *33rd Annual Report of the Bureau of American Ethnology*. Washington, D.C, 1919.
- Gleason, H. H. "Vegetational History of the Middle West." In *Annals of Association of Geographers*, Volume 12, 1922.
- Kindscher, Kelly. *Edible Wild Plants of the Prairie: An Ethnobotanical Guide*. Lawrence: University Press of Kansas, 1987.
- . *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*. Lawrence: University Press of Kansas, 1992.
- Owensby, C. E. *Kansas Prairie Wildflowers*. Ames: Iowa State University Press, 1980.
- Plant drawings used with permission of the Kansas State Department of Agriculture.