

Seasonal Ethno botany of the Flathead Indians

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Native American culture and natural medicine are two topics that are entering the popular culture in the United States. This interest is illustrated by the increased availability of books on their philosophy and lives, as well as herbal supplements and remedies.

Ethno-botany has become a subject of increased academic study. The Native Americans had very complex ways of curing ailments and pains, with an extensive list of plants and animals to use for food. This especially applied to the Flathead, and other northern tribes, because of the changing seasons. The Flathead Reservation, in Montana, had a variable climate, affording the people vast medicines, fibers and food because the large quantities of varied resources available throughout the year.

To understand their ethno botany, a general introduction to the Flathead culture and geography is needed. The name “Flathead” covers three different tribes: the Salish (which is also a primary language for the people), Kootenai (also spelled “Kutenai”), and Pen d’ Oreille (Fahey, x).

With the European desire to extend white boundaries into Montana and the Pacific Northwest area, the United States Government took a large amount of land away from the native tribes. This is why these once- separate tribes are now associated with another.

Through the Hellgate Treaty, the U.S. reduced the amount of Flathead land, in exchange for money and goods. The United State’s newly acquired land extended from

the 42nd parallel to the British Line, with an average of 2^o latitude (Ronan, 57). This is the area known as the modern Flathead Indian Reservation.

Flathead ethno-botany and history is very diverse because it contains elements from these three different tribal cultures. According to Dell Upton, the Salish speakers lived along the Pacific Coast in permanent residences, but the Kootenai and Pen d' Oreille people lived further inland in temporary housing (Upton, 35).

An important part of Flathead culture was the buffalo, their main source of food. Before the three tribes were joined together on the Flathead Reservation, the Salish tribe lived on the coast, so their main source of meat was salmon (Upton, 35). But when they joined the Kootenai and Pen d' Oreille, they had to change their lifestyle. According to John Fahey, the Flathead were semi-nomadic and rarely camped for more than ten to fifteen days at a time in the same area during warmer months (Fahey, 13). According to the Indigenous Math and Science Institute at Salish Kootenai College, they spent their winters in semi-permanent huts near streams; where they trapped, fished, and occasionally hunted buffalo and other animals. Their activities also included story-telling, ceremonies and chores such as repairing clothes and tools (All Nations Louis Stokes Alliance for Minority Participation).

In warmer months, the people lived in teepees to accommodate their need for mobility. In spring, they would go to the Plains for their great buffalo hunt. After the spring hunt, they would return to the mountains for a short time, and return to the plains to hunt again in the summer. Revolving around these hunts, the tribes gathered what was near the temporary camps to supply food, fiber and medicine (Fahey, 13).

Lewis and Clark were the tribe's first European encounter in 1803. This encounter can be found in the journals of these and other explorers. These accounts, along with written information from the tribes, are the main sources of information obtained about Flathead history.

The Flathead, like other Native Americans, didn't have a written history. But they did have winter counts, which are calendars consisting of drawings of important events. One of these pictures may have included the introduction of horses to the tribe. This was a big change in the native culture, making hunting activities more efficient. This, in turn, may have also been a factor in the depletion of the buffalo population. Unfortunately, more tragic factors arose with the appearance of European settle; namely, smallpox. This terrible disease decimated the Flathead population, along with other tribes in the area, between 1760 and 1770 (Fahey, 24).

Today, the Flathead people are still proud of their heritage. They have two colleges on the reservation. The curriculum is very diverse, but all students learn about their culture, in addition to their core school studies.

Once heavily reliant on lumber from their tribal lands, the people are now working to restore the forest and prairies back to its pre- European state. Fire hadn't been allowed to burn naturally in the reservation since 1910, but now it is thought that fire is part of an important restoration tool, and is starting to be used more commonly.

Fire also has historical value for the tribe. According to Robert Boyd, and accounts from Lewis and Clark and tribal elders give evidence of prescribed burnings to enhance their plant and animal harvests (Boyd, 52). According to Mark Matthews, logging still occurs, but the profits are used for restoration projects (Matthews).

Spring is a very important season for the Flatheads. It signaled the end of harsh winter life, and the return of fresh vegetation for food and medicine. In the beginning of spring, the Flatheads were still in their winter fishing camps. But once it started getting warmer and the vegetation began to bloom, harvesting available plants was a priority. The tribe gathered root vegetables, including camas and bitterroot.

Before the Flathead returned to the plains in the summer, they burned the bottom of the valley they were leaving. This enhanced the yield of produce for their return in the fall. Now that the tribe has horses to care for, they also burned areas that weren't grazed to increase grass growth for grazing (Boyd, 54).

Prairie thermopsis (*Thermopsis rhombifolia*) wasn't used for food, medicine or fiber, but its flowers still played a vital role in the lives of the Flathead. It's a very common plant in Montana, and is now considered a weed. According to the USDA Natural Resources Conservation Service, it grows to a length of eight inches tall, and has small, opposite, round leaves and the flowers are bright yellow (Natural Resource Conservation Service). According to Daniel Moerman, this plant was so important because it signaled the beginning of prime buffalo- hunting season. After seeing these flowers, the Flathead would head to the Plains to start the hunt and collect all the Plains vegetables (Moerman, 556).

Camas (*Camassia quamash*) was a staple food product of the Flathead. According to Michael Weiner, many wars were fought, especially with the Blackfoot, their main rivalry, for the right to harvest this plant (Weiner, 184). According to Thomas Elias and Peter Dykeman, it was harvested in the spring because that is when its blue flowers bloom, though it could be harvested at any time (Elias and Dykeman, 65). Without

caution, the edible variety of camas could easily be confused with death camas, which has a white or cream-colored flower. This look-alike plant brought many accidental deaths to the Flathead and other tribes in the area (Weiner, 184). According to MontanaPlantLife.org, this is a member of the lily (Liliaceae) family, so it has long, grass-like leaves at its base and flowers atop of a long stem (MontanaPlantLife.org). Camas has been used in beverages, sauces, relishes, and soups and eaten raw or cooked. Camas contains inulin, which is indigestible and causes massive gas, but cooking it breaks this compound down to make it digestible. To cook this, the Flathead would lay down a barrier of pine needles in a hole, place the camas on top of the barrier, and cover it with another layer of pine needles. Then, hot coals were placed on top of the entire pile. The camas had to cook at least overnight, sometimes as long as three days (Weiner, 184). After it was cooked, the camas had a sweet flavor.

Nodding Onion (*Allium cernuum*) was also a very important crop, and also part of the lily family. It can be identified by a non-branched stem 10-50 cm tall that curves at the top. Long, grass-like leaves appear at the base. The flowers bloom in June and July, and several exist in a nodding umbel in a pinkish or white color (MontanaPlantLife.org). The bulb and leaves was a staple, used in sauces and relishes, similar to the way onions are used today, and could be dried for later use. This was an important trait because onions are a good source of Vitamin C, and this vitamin is hard to find in the winter (Weiner 120). With alliums being among the most bioactive plants used in cooking, Nodding Onion could be rubbed all over the body for use as an insect repellent (Kavasch, 156).

Some plants could be harvested in spring *and* summer. For some, different parts could be used in different seasons and for others, the usable part persisted from spring until summer.

Blue huckleberry (**capitalized**) (*Vaccinium membranaceum*) was a very versatile plant. The plant is a perennial shrub, and grows to a maximum of 4.5 feet tall. Its flowers are purple and the fruit is black (Natural Resources Conservation Service), and was used both medicinally and for food. An infusion of the roots and stems were taken for rheumatism, arthritis and heart trouble. The sweet berries were very popular with the Flathead, as with other tribes, and eaten raw, as a seasoning or relish, mixed in with baked goods, and dried for later use (Moerman, 583).

Bitterroot (*Lewisia rediviva*) was nearly as important to the Flathead as camas, and later became Montana's state flower. The Bitterroot Valley was the area where Flathead collected the berries, before the white settlers took this land. This plant can be distinguished by its white to purple flowers that take up the mass of the plant, its petals being 2-2.5 cm long. The whole plant is very low to the ground. The leaves are succulent, but wither when it flowers. It can grow on mountains, open woodlands, and sagebrush shrub lands (Natural Resource Conservation Service). The roots are small but many are gathered for numerous uses. Though it could be harvested in the summer, spring harvest was easier, when bitter outer root could be peeled off easily. These roots were usually boiled, because they would swell and become soft. They could also be dried and stored for later use, but were still cooked before eaten. Drying the plant rid it of the bitter flavor (Moerman, UMD). The plant also had medicinal qualities. The root was used as a

pulmonary aid and as a general heart medicine, to promote lactation in nursing women, and as a gynecological aid (MontanaPlantLife.org.)

Biscuit root (*Lomatium macrocarpum*) was another favorite root vegetable of the Flathead. It belongs to the Apiaceae (parsley) family, along with the carrot and wild parsnip. Biscuit root has white flowers, gray-green leaves, and a reddish stem, close to its base. The foliage is covered in fine hairs (Natural Resource Conservation Service), and the carrot-like root can be eaten raw or cooked, but peeled beforehand. It can also be dried and stored for later use (Moerman 663).

Wild Carrot (*Daucus pusillus*) was another root vegetable that the Flathead eagerly gathered in the late spring or early summer. They waited until the root was of particular size, but if the root would become tough if harvested too late in the season. This plant looks a lot like the non-native Queen Anne's Lace, but only has a single branch and is less robust. Its leaves are pinnately compound. The flower is a white umbel, and the central flower is white. With its high nutrition and good taste, it was a desirable food, and could be eaten raw or cooked.

Wild Parsnip (*Sium suave*) is related to the wild carrot and is very similar. The difference is that wild parsnip has a corrugated main stem and the leaves are only once compound (Natural Resource Conservation Service). The root was eaten and harvested, as with the wild carrot.

Summer is the season for bountiful harvest, especially for berries. Some are available in other seasons as well, but all are available in the summer. These sweet morsels were an important source of nutrition and provided delicious flavor on their own

or to enhance other foods. But other plants were also available in the summertime, including more root vegetables. The Flathead used the following during the summer:

Chokecherries (*Prunus virginiana*) aren't considered the most palatable of berries today, but Lewis and Clark noted that the Flathead loved them. This plant can either be a tree or 30 feet shrub, and is part of the Rosaceae (rose) Family. The leaves are dark green, toothed, alternate, and oval (elliptic), with noticeable glands at the base. The flowers are very small and many are grouped together on a stalk (Natural Resource Conservation Service). Chokecherry is one of the most widely distributed trees in North America. (Kavasch, 17) The Flathead ate these infrequently despite the unpleasant taste, as they were a good survival food. One just had to make sure not to eat too many of the seeds because they contain hydrocyanic acid, which is poisonous (Elias and Dykeman, 204). Native American tribes used the berry's medicinal qualities as a cough medicine and an astringent for sores. An infusion of the bark was used for diarrhea, dysentery and intestinal worms. The Flathead also warmed, strained, and cooled the bark resin for tired eyes (Moerman, UMD).

Saskatoon Serviceberry (*Amelanchier alnifolia*) was more palatable than the chokecherry (although part of the same family) and was prized for its sweet flavor. These must be harvested right after ripening because wildlife enjoyed them just as much (Kavasch, 18). It comes from a smaller tree than a chokecherry, only growing to five meters. The branches are often grayish and wooly. Its leaves are similar to that of the chokecherry, but the flowers are bigger and not clumped. The berries are hairless, waxy, dark purple and juicy (MontanaPlantLife.org). They were eaten raw, used as a seasoning in meats and other foods, or put into desserts. The sharpened wood was used as a

veterinary aid to drain blood and other liquid from horses' swollen ankles. The strong wood was also used to make arrow shafts (Moerman, UMD).

The Common Yarrow (*Achillea millefolium*) root was important to the Flathead in the summer. It now appears in all fifty states, but isn't native to all of them. It is native to the reservation. It spreads easily with its rhizomatous roots and has a tendency towards disturbed sites. The leaves are evenly divided along the stem, but most occur at the base. They're lance-shaped, but are finely divided (Natural Resource Conservation Service). It has several medicinal uses, including a dermatological aid and disinfectant. (Moerman, UMD) The oil from this plant, called cineol, has a cool, soothing effect on the skin (Kavasch, 157). The leaves were boiled and used for aching backs and legs. It could also be smoked for a cooling and stimulating effect and a tea from the leaves could be used for rheumatism, cold remedy, and febrifuge. The Europeans called it "woundwort", using it to treat minor wounds in battle. It was also in the US Pharmacopoeia from 1863 to 1882 for promoting menstruation and as a stimulant (Weiner, 55). However, too much use can be toxic or cause sensitivity (Kavasch, 157).

Common Sunflower (*Helianthus annuus*) was also important to the tribe. Its flower isn't as big as the common image of a sunflower today, but it looked similar. It is an erect, coarse plant with rough, hairy stems. It has a taproot, and its flower heads are 7.5-15 cm wide (MontanaPlantLife.org). Several other species of sunflower were also used, including Jerusalem Artichokes. The Flathead used the cooked root as a food source (Fahey, 13). There was no mention of the Flathead eating sunflower seeds, but it was such common practice throughout the US that they probably ate them on occasion.

Some plants were available to the Flathead during all of the warm months during spring, summer and fall. Again, some parts of these plants are only available for a specific time of the year, but many plants have multiple uses and each part becomes available at a different time.

Another member of the Rosaceae family, Wild Rose (*Rosa* sp.), has numerous uses. Its five soft pink flowers, glossy leaves and prickly stems distinguish the flower. It is smaller than other Rosaceae members (Elias and Dykeman, 220). An infusion of its petals, stem, bark or roots can be used for sore eyes, and an infusion of the stem or root bark was used for diarrhea or other stomach ailments. A poultice of the hips was chewed and applied to boils. The fruits are very high in vitamin C, with one hip containing about as much as one orange. They also have more calcium, phosphorous, and iron than oranges (Weiner, 200). The prickly stems were used to ward off spirits of the dead during ceremonies (Moerman, 485).

Plains prickly-pear (*Opuntia polyacantha*) isn't the only plant in the cactus (Cactaceae) family that grows in Montana, but it's the one the Flatheads used the most. It is still used today in modern cooking, particularly Mexican food. This plant is characterized by its green, spiny succulent foliage and has a yellow flower at its top. The fruit (the prickly pear) begins to appear in summer and fall (Natural Resource Conservation Service). Spines had to be taken off the fruit before eating. The fruit was eaten raw or cooked, and could be dried for later use. An infusion of the stems was used to treat diarrhea and as an analgesic. The raw stems were smashed and used for backache (Moerman, UMD).

Ponderosa Pine (*Pinus ponderosa*) had more medicinal uses than food or fiber uses for the Flathead. They grew on the mountains, where the Flathead lived when they weren't on the plains hunting buffalo. As they age, these trees are easily distinguished by their rough, reddish bark with its cracked plate-like appearance. When they're younger, they have very dark bark.

This evergreen with three long needles per fascicle, with yellow flowers that bloom in the spring. At maturity, this is a fire-resistant species; in fact needing fire to open its cones and release seed (Natural Resource Conservation Service). Montana tribes, including the Flathead, occasionally ate the seeds raw, or ground the pine nuts into a meal for making bread (Weiner, 196). A poultice of the pitch and melted animal tallow or lard was used for backache and rheumatism. The boughs were used in sweat lodges for muscular pain. The pitch was also warmed and used for boils and carbuncles. Also, the needles were jabbed into the scalp for dandruff and heated for use in delivering the placenta more quickly (Moerman, UMD).

Few plants were harvested exclusively in the fall. Fall is the end of the harvest season, though there are still some plants available. It was a time to prepare for winter, so the main task was to dry and jerk meat. But living off of meat alone wasn't healthy or feasible, so plants such as Nodding Onion and Blue Huckleberry were dried and stored for the winter.

Kinnikinnick, or Bearberry, (*Arctostaphylos uva-ursi*) was an important plant not only to the Flathead, but to the European settlers as well. This Evergreen was a branching, spreading shrub that grows on dry, rocky or sandy soil. The leaves are thick, dark green, and leathery. The plant has white flowers, and red, smooth, pea-sized berries, which made good survival food (Weiner, 83). They were used in sauce and relish, sometimes mixed with other fruits and to improve the taste of meat (Kavasch, 14). The leaves of this plant weren't harvested until early fall. A poultice of the leaves was used medicinally as a burn dressing. Earaches were often treated from the smoke of burning the leaves. (Moerman, UMD). This remedy was put into the U.S. Pharmacopoeia in 1820, and remained there until 1936 (Weiner, 83). Flathead smoked these leaves like tobacco. Some tribes mixed kinnikinnick with other plants, such as Sumac bark, wild tobacco, and spicebush (Kavasch, 14). European settlers didn't think much of this tobacco

substitute, but kinnikinick was used in a pinch. French settlers were known to enjoy a tobacco and kinnikinick blend (Ruby and Brown, 14-15).

Because of the cold winters in Montana, few plants were available to harvest exclusively in the winter. The Flathead retreated to their winter camps in the mountains during this time because they were close to good salmon fishing spots. This is the only time of the year that they stayed in one place for more than a couple of weeks, usually staying in one spot throughout the winter season. The goal of the Flathead during this cold season was to catch fish, trap various animals and occasionally, hunt buffalo (All Nations Louis Stokes Alliance for Minority Participation). Most of the plants that were used in the winter could be used all year round, which leads to the next group of plants.

Sweet grass (*Hierochloa odorata*) was a plant known to many Native American tribes because of its versatility. It can grow up to thirty inches tall, and has few leaves with rough edges with shiny, hairless undersides. The color toward the base of the plant is usually reddish-purple. The sweet, vanilla-like scent was prized by many native cultures and is what gave the plant its name (Natural Resource Conservation Service). It was known to keep its color and texture long after it was picked. Although it had no nutritional value for the Flathead, it was a great medicinal tool. An infusion was used as an analgesic, cold remedy, fever reducer and as a respiratory aid. It was also used for smudging (burning) in religious ceremonies, decorating women's hair and incense from the grass was used as an insecticide (Moerman, UMD).

Rocky mountain juniper (*Juniperus scopulorum*) is a small evergreen tree with multiple uses, mostly medicinal. It's bushy with a few short trunks of reddish brown, stringy bark. The small, waxy, blue berries, available during fall and winter, were used to enhance the flavor of venison, buffalo and salmon meats (Kavasch, 150). They were also eaten raw in times of scarcity,

especially because they were available throughout the winter (Weiner, 195). An infusion of the boughs, branches and cones (available during fall and winter) were used for colds, fevers, and pneumonia. The leaves were placed on hot coals for the smoke to treat sick horses. Concoctions were used to treat arthritis and rheumatic pain, and the leaves were also rubbed on hair to treat dandruff. Having this plant available in the winter months was a great advantage, as illness was more common in the winter months. The oil from these berries could be used as an insect repellent (Kavasch, 150). For ceremonial use, this plant was burned and the smoke was believed to ward off illness (Moerman, 288).

Willow Trees (*Salix spp.*) are known even today to have very important chemical properties. They are easily recognized by their long, flexible twigs covered in lance-shaped leaves and catkins. These trees are widely dispersed in North America (Natural Resource Conservation Service). The salicylic acid found in willow trees is what the Native Americans used as their aspirin to reduce fevers and reduce pain. Acetylsalicylic acid, which was synthesized from willow trees, is used to make modern aspirin. This is one of the most important drugs on the market today (Kavasch, 157). Chewed bark was used for cuts, and young leaves were used to make an eyewash. They also gummed together the flexible fibers of *Salix exigua* and *Salix melanopsis* in baskets in which to cook fish (Moerman, UMD).

Western Red Cedar (*Thuja plicata*) reaches fifty to seventy-five meters tall, often buttressed at the base and conical to irregular at the crown. The branches are flat and fan-shaped, and the leaves are scaly and evergreen. The seed cones are 4-7.5 mm long with lateral wings about as wide as the body (Natural Resource Conservation Service). Bark strips were used to make baskets and bark sheets were used to make storage containers (Moerman, UMD). The

wood is still known today as being durable and light. Today, this plant is harvested for lumber (Natural Resource Conservation Service).

Obviously, it's impossible to note every plant that the Flathead used. But even from this short list, it's easy to see that the Flathead people had a very extensive knowledge of plants. It's important to learn about a culture's ethno-botany because it's such a vital part of life, even beyond the tribe's own culture. The collection of plants and their uses were developed over thousands of years, and passed down to each new generation, just as with traditions stemming from religion. The Flathead people, along with most other Native American people, felt a spiritual connection with the Earth, and their relationship to its plants and animals was an intimate and respectful one. The Salish, Kootenai, and Pend' Oreille people each had their own ethno-botanical history, and the combination of three cultures merged into one enhanced this knowledge even more. From this knowledge, we have and continue to discover new medicines, food, and ways of life.

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