



Prehistoric Plant Use at Beaver Creek Rock Shelter, Southwestern Montana, U.S.A.

Darla Dexter, Kathleen Martin, and Lauri Travis

Research

Disclaimer

The listing of plants in this article is not an endorsement of their use. Some of the plants are toxic. Before using any plants to treat a medical condition, medical advice should be obtained.

Abstract

The 2011 Carroll College Archaeological Field School conducted an exploratory excavation within the Beaver Creek Rock Shelter in southwestern Montana, U.S.A. The excavation exposed four cultural occupation layers dating to over 2,500 years ago. Pollen retrieved from the paleoenvironmental record included a wide variety of plants. Seven plant families were found in three of the occupation layers and in only one natural layer. This research reviewed the traditional Native American ethnobotanical uses of those seven plant families. They were used primarily for medicinal purposes. Although archaeologists have traditionally viewed botanical remains as evidence of prehistoric subsistence, this research demonstrates archaeologists' need to use caution in assuming plant remains in the archaeological record are predominately tied to subsistence.

Introduction

The 2011 Carroll College Archaeological Field School excavated the Beaver Creek Rock Shelter in southwestern Montana, U.S.A. The Beaver Creek Rock Shelter is a short-term campsite located on the west flank of the Big Belt Mountains in the Helena National Forest. Excavations revealed four cultural occupation layers dating to 1280±50 BP (Beta-280431), 1730±40 BP (Beta-280432), 1980±50 BP (Beta-280433), and a layer dated between 1980±50 BP (Beta-280433) and 2470±30 BP (Beta-299721), ex-

pressed in BP or years before present day, where "present day" is January 1950 (Travis *et al.* 2012).

Botanical remains were scarce within the Beaver Creek Rock Shelter sediments. The rock shelter strata did not contain any plant macrofossils. The only indication of plant utilization came from evidence within the pollen core. Pollen cores are typically used for paleoenvironmental information, not subsistence studies. We have concluded the pollen from the seven plant families represents botanical remains brought in to the rock shelter by prehistoric inhabitants as the pollen is found only in the three occupation layers. Fifteen of the 16 natural layers did not contain the seven pollen families. Plant macrofossils from archaeological sites may be disintegrated yet contain well-preserved pollen, indicating plant resources utilized (Faegri & Iversen 1989:176). The pollen core from Beaver Creek Rock Shelter demonstrated that three occupation layers contained pollen from Apiaceae, Brassicaceae, Cyperaceae, Fabaceae, Geraniaceae, Lamiaceae, and Ranunculaceae, representing members of the umbel, mustard,

Correspondence

Darla Dexter, Lauri Travis, Carroll College, Department of Sociology and Anthropology, 1601 N. Benton Avenue, Helena, Montana 59625, U.S.A.
ltravis@carroll.edu
Kathleen Martin, Carroll College, Corette Library, 1601 N. Benton Avenue, Montana 59625, U.S.A.

Ethnobotany Research & Applications 12:355-384 (2014)

Published: 07 September 2014

www.ethnobotanyjournal.org/vol12/i1547-3465-12-355.pdf

sedge, legume, geranium, mint, and buttercup families, respectively (Travis *et al.* 2011). Pollen from these plant families were only found in the three occupation layers and a rapidly laid alluvial layer directly above Occupation 3. Nearly a meter of sediments was deposited above Occupation 3 in less than 250 years. It is probable that the pollen from the rapidly deposited sediments was attributed to the occupation layer below, especially as the pollen families were not found in any other natural layer in the entire two meters of deposits. As these plant families were only found in cultural layers and one incongruous layer, it is probable that the plants were brought in by the short-term inhabitants of the rock shelter.

The Northern Plains have a rich history of ethnographic studies describing traditional Native American plant use. This paper will explore the traditional ethnographic Native American uses of the plant families found within the Beaver Creek Rock Shelter occupation layers excavated in 2011. Ethnographies of the Blackfeet, Cheyenne, Chipewewa, Cree, Crow, Kutenai, Ojibwa, and Salish are included. The cultural affiliation of the Beaver Creek Rock Shelter is unknown due to the nomadic lifestyle of the listed tribes. However, it is known through historical records and oral histories that all of these tribes have periodically occupied the area in the last 3,000 years (Dusenberry & Dusenberry Crow 1998, Ewers 1983, Greiser 1994, Grinnell 1972, Hannus 1994, Lowie & Shapiro 1982, Schlesier 1994, Travis 1988).

Environment

The Beaver Creek Rock Shelter is located northeast of Helena, in southwestern Montana, U.S.A. The north-flowing Missouri River is bordered on the east by the Big Belt Mountains and the west by the Helena Valley. The rock shelter is located on the west flank of the Big Belt Mountains at the confluence of Beaver Creek and an unnamed intermittent drainage at 3840 ft above sea-level. The dominant vegetation is a mixed Douglas fir - Ponderosa pine community. The Douglas fir - Ponderosa pine community is often separated by areas of mountain meadows or small, narrow riparian communities following the creeks. Beaver Creek runs northeast-southwest, and the unnamed intermittent drainage enters from the north creating a fairly large secondary terrace, about 6 m north-south by 10 m east-west. Beaver Creek is approximately 30 m south of the rock shelter and empties into the Missouri River to the southwest.

Changes in the paleoclimate undoubtedly affected the distribution of vegetation communities. Possible climate changes displayed by the Beaver Creek Rock Shelter pollen column have been discussed in a previous publication (Travis *et al.* 2012) and may be referred to for details.

Cultural chronology of occupation

Although excavations at the Beaver Creek Rock Shelter exposed limited cultural remains, four occupation layers were identified. Four radiocarbon dates were obtained from three distinct hearth features and one isolated charcoal crumble (Travis *et al.* 2012; Table 1).

The soil/pollen samples were collected from a single column isolated in the center of the north wall of test unit C3 (Travis *et al.* 2011; Figure 1). Samples were collected being extra careful not to mix strata. Two samples were collected from each stratum. A one-gallon bag was filled for gathering the granulometry data. A second smaller bag (about ½ cup of soil) was collected for pollen samples. The pollen sample was collected from behind the granulometry sample as this soil was not exposed and less likely to be contaminated. Pollen samples were analyzed by the PaleoResearch Institute in Golden, Colorado.

Occupation 1, located 55–64 cm below surface (cmbs), dated to 1280±50 BP (Beta-280431) and contained a single hearth feature, stone tools, flakes, and bone fragments from large mammals. A second hearth feature, 80 cmbs in association with Occupation 2, had a radiocarbon date of 1730±40 BP (Beta-280432). The level also had a single projectile point, flakes, and a wider variety of bone fragments from small game species. A third hearth feature, from Occupation 3, was located 169–180 cmbs and dated to 1980±50 BP (Beta-280433). The occupation layer revealed only flakes and large mammal bone fragments. Occupation 4 was discovered just below Occupation 3 at 170–190 cmbs and consisted of a very dark organic soil with heavy charcoal flecking and numerous bone chips throughout, but few other artifacts. The fourth occupational layer was dominated by large mammal bones with lesser amounts of small mammal bones. A radiocarbon date on a charcoal sample that was collected from 220–230 cmbs (about 50 cm below the base of Occupation 4) dated to 2470±30 BP (Beta-299721). This date appears to be consistent with the site stratigraphic context; therefore, Occupation 4 likely dates between 1,980 BP and 2,470 BP (Travis *et al.* 2012).

Table 1. Radiocarbon dates for Beaver Creek Rock Shelter, southwestern Montana, U.S.A.

| Sample | Measured Age | Technique | Conventional Age | Stratum | 2 σ Calibrated Age |
|-------------|--------------|-----------|------------------|---------|---------------------------|
| Beta-280431 | 1290 ±50BP | standard | 1280 ±50BP | 15 | A.D. 650–880 |
| Beta-280432 | 1740 ±40BP | standard | 1730 ±40BP | 13 | A.D. 230–410 |
| Beta-280433 | 1940 ±50BP | standard | 1980 ±50BP | 6 | B.C. 90 – A.D. 120 |
| Beta-299721 | 2410 ±30BP | AMS | 2470 ±30BP | 1 | B.C. 760–410 |

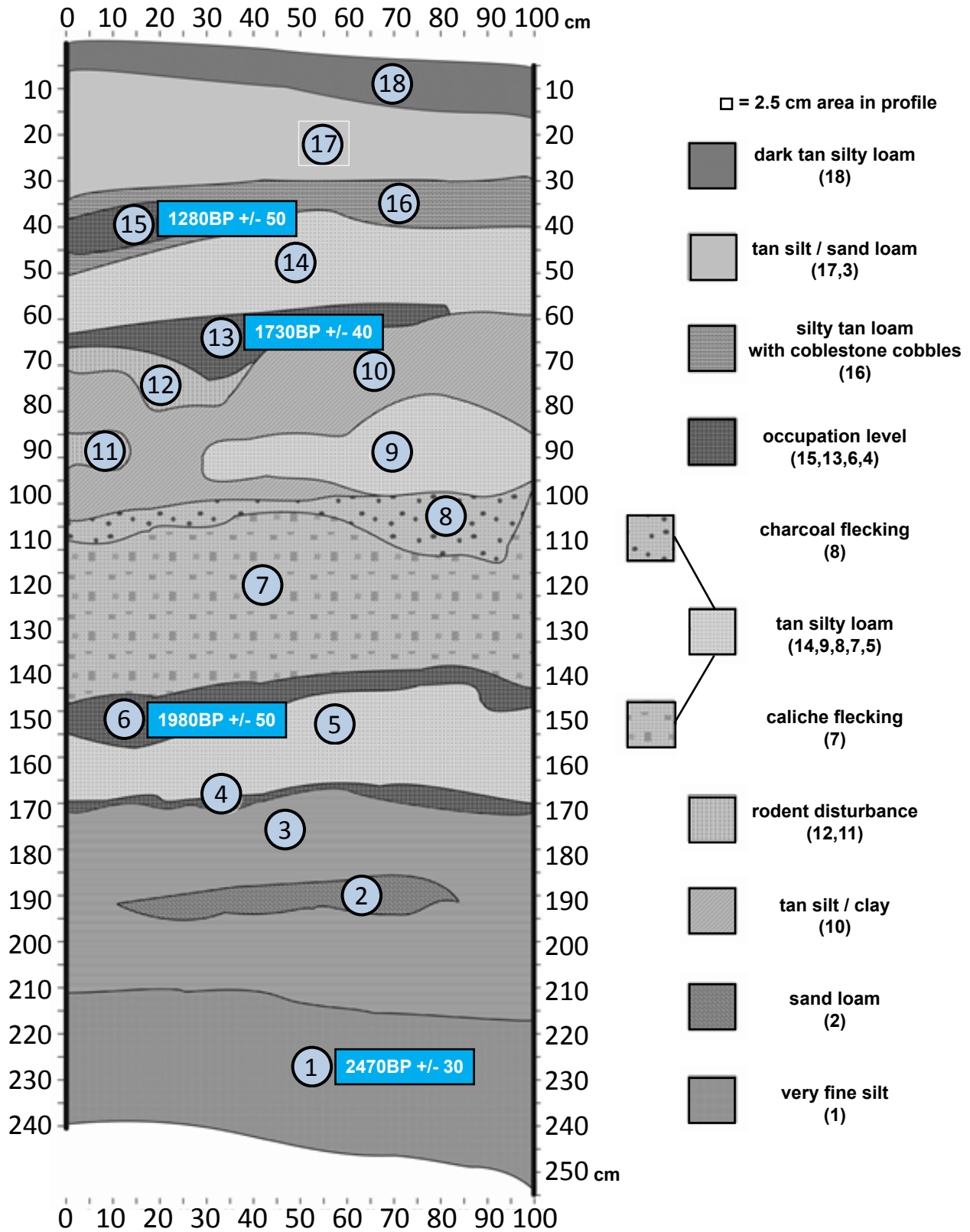


Figure 1. Beaver Creek Rock Shelter Site 24LC1993/2186, southwestern Montana, U.S.A. Profile North Wall Unit C3 (after Travis *et al.* 2011).

Plant families

The prairies, valleys, wetlands, and mountain forests of Montana support a wide diversity of plant life with 128

plant families and over 2,082 native species (Lesica 2012). Seven families were exclusively identified from pollen in the three occupation layers (Travis *et al.* 2011, Travis *et al.* 2012; Figure 2). Five of the seven families iden-

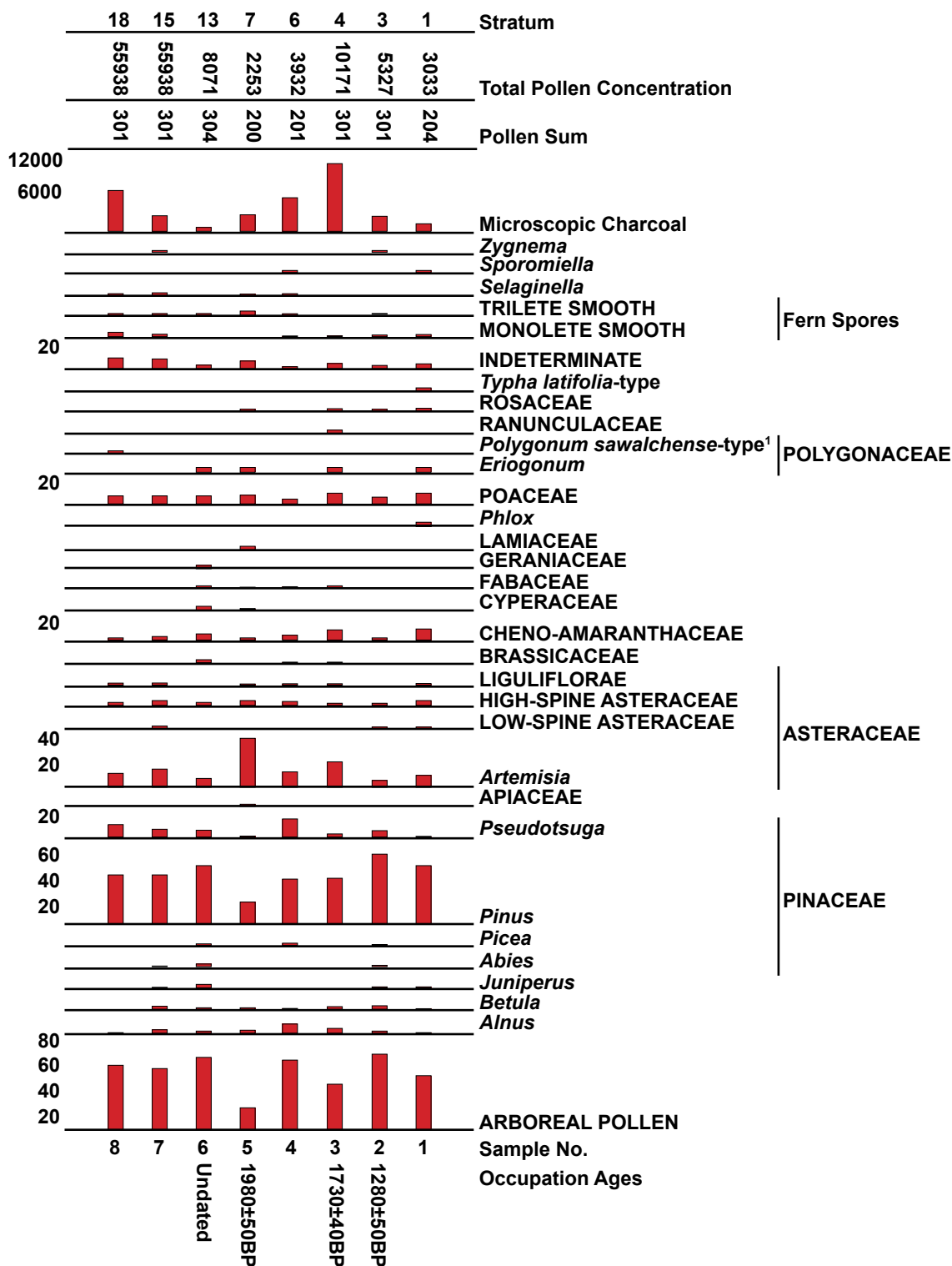


Figure 2. Pollen profile, Beaver Creek Rock Shelter, southwestern Montana, U.S.A. (after Cummings & Yost 2011).
1. *Polygonum sawalchense* is a synonym of *P. douglasii* subsp. *johnstonii* (Munz) J.C.Hickman

tified in this study are ranked in the top ten largest plant families in Montana. The families from the pollen samples consist of Cyperaceae (with 163 native species ranks second), Brassicaceae (with 99 species ranks fourth), Fabaceae (with 98 species ranks fifth), Ranunculaceae (with 62 species ranks seventh), and Apiaceae (with 49 species ranks tenth) (Lesica 2012). The two smaller families, Lamiaceae and Geraniaceae, have 38 species and 10 species, respectively.

Methods

Due to the large number of species in these families and the inability to identify the herbal pollen to genus or species, we can only speculate about which exact plant species were in the occupational layers. The final list of plant species was derived from a two-step process. First, all Montana native plants from the seven pollen families were identified (Mincemoyer 2012). Second, each species was investigated for ethnographic use by the Native American tribes that are known to have occupied the area. If a species was not found in the regional ethnographic literature,

it was removed from the list. The results of the above comparisons are detailed below.

Results

Biogeography

Lesica (2012) classified Montana vegetation life zones into five types: plains, valleys, montane, subalpine, and alpine. All life zones with the exception of the plains occur in the mountainous regions of Montana. The plains region refers to the Great Plains of eastern Montana. Elevations range from 550 m (1,800 ft) in the plains to above 3,000 m (9,500 ft) in the alpine zone. The Beaver Creek Rock Shelter occurs at the lower elevation of the montane zone which encompasses the lowest and warmest portions of mountainous terrain. The majority of the ethnobotanical species listed are found in low to mid-elevations of the plains, meadows, and montane regions of Montana, with fewer species occurring in the higher subalpine and alpine zones (Table 2).

Table 2. Geographic location of selected plant species in Montana, U.S.A. Montana vegetation life zones: (PI) Plains (548–914 m), (Va)Valleys (NW 610–915 m to over 1525 m in the SW & S-central), (Mo) Montane (NW 760–1680 m and 1370–2130 m east of the Continental Divide), (Su) Subalpine (NW 1675–2135 m and 1980–2900 in the SW and S-central mountain ranges), and (Al) Alpine (NW 1980–2130 m and above 3000 m in SW). (Δ) Location, or (-Δ) Lower altitude location. Species distribution only to the closest proximity of the study site: (A) in Lewis & Clark County, (B) in adjoining counties, (C) outside of Lewis and Clark and adjoining counties.

| Plant Names | | Montana vegetation life zones | | | | | Species distribution | | |
|---|----------------------------|-------------------------------|----|----|----|----|----------------------|---|---|
| Scientific | Common | PI | Va | Mo | Su | Al | A | B | C |
| Apiaceae | | | | | | | | | |
| <i>Angelica dawsonii</i> S.Watson | Dawson's angelica | | | Δ | Δ | | | | Δ |
| <i>Cicuta douglasii</i> (DC.) J.M.Coult. & Rose | Western water-hemlock | | Δ | Δ | | | | Δ | |
| <i>Cicuta maculata</i> L. | Spotted water-hemlock | Δ | Δ | | | | Δ | | |
| <i>Ligusticum canbyi</i> J.M.Coult. & Rose | Canby's wild lovage | | | Δ | | | Δ | | |
| <i>Lomatium ambiguum</i> (Nutt.) J.M.Coult. & Rose | Wyeth biscuitroot | | Δ | Δ | | | Δ | | |
| <i>Lomatium cous</i> (S.Watson) J.M.Coult. & Rose | Cous biscuitroot | Δ | Δ | Δ | Δ | Δ | Δ | | |
| <i>Lomatium macrocarpum</i> (Hook. & Arn.) J.M.Coult. & Rose | Large-fruit desert-parsley | Δ | Δ | Δ | | | Δ | | |
| <i>Lomatium orientale</i> J.M.Coult. & Rose | Oriental desert-parsley | Δ | Δ | | | | | | Δ |
| <i>Lomatium triternatum</i> (Pursh) J.M.Coult. & Rose | Nineleaf biscuitroot | | Δ | Δ | | | Δ | | |
| <i>Musineon divaricatum</i> (Pursh) Nutt. | Wild parsley | Δ | Δ | | | | Δ | | |
| <i>Osmorhiza chilensis</i> Hook. & Arn. | Chilean sweet-cicely | | Δ | Δ | -Δ | | Δ | | |
| <i>Osmorhiza longistylis</i> (Torr.) DC. | Smoother sweet-cicely | Δ | Δ | | | | | Δ | |
| <i>Osmorhiza occidentalis</i> (Nutt.) Torr. | Western sweet-cicely | | Δ | Δ | Δ | | Δ | | |
| <i>Perideridia montana</i> (Blank.) Dorn | Gairdner's yampah | | Δ | Δ | -Δ | | Δ | | |

| Plant Names | | Montana vegetation life zones | | | | | Species distribution | | |
|---|---------------------------|-------------------------------|----|----|----|----|----------------------|---|---|
| Scientific | Common | PI | Va | Mo | Su | Al | A | B | C |
| <i>Sanicula marilandica</i> L. | Maryland black snakeroot | Δ | Δ | -Δ | | | | Δ | |
| <i>Sium suave</i> Walter | Hemlock water-parsnip | Δ | Δ | Δ | | | | Δ | |
| Brassicaceae | | | | | | | | | |
| <i>Draba incerta</i> Payson | Yellowstone whitlow-grass | | | | | Δ | Δ | | |
| <i>Erysimum cheiranthoides</i> L. | Wormseed wallflower | Δ | Δ | Δ | | | Δ | | |
| <i>Physaria didymocarpa</i> (Hook.) A.Gray | Common twinpod | Δ | Δ | Δ | | | Δ | | |
| <i>Turritis glabra</i> L. | Tower-mustard | Δ | Δ | Δ | | | Δ | | |
| Cyperaceae | | | | | | | | | |
| <i>Amphiscirpus nevadensis</i> (S.Watson) Oteng-Yeb. | Nevada bulrush | Δ | Δ | | | | | Δ | |
| <i>Carex nebraskensis</i> Dewey | Nebraska sedge | Δ | Δ | Δ | | | Δ | | |
| <i>Eriophorum callitrix</i> Cham. ex C.A.Mey. | Sheathed cotton-grass | | | | | Δ | | | Δ |
| <i>Schoenoplectus acutus</i> (Muhl. ex Bigelow) Å.Löve & D.Löve | Hardstem bulrush | Δ | Δ | Δ | | | Δ | | |
| <i>Schoenoplectus americanus</i> (Pers.) Volkart | Three-square bulrush | | Δ | | | | | | Δ |
| <i>Scirpus cyperinus</i> (L.) Kunth | Woolgrass | | Δ | | | | | | Δ |
| Fabaceae | | | | | | | | | |
| <i>Amorpha canescens</i> Pursh | Lead plant | Δ | | | | | | | Δ |
| <i>Astragalus americanus</i> (Hook.) M.E.Jones | American milkvetch | | Δ | Δ | -Δ | | | Δ | |
| <i>Astragalus canadensis</i> L. | Canadian milkvetch | Δ | Δ | Δ | | | Δ | | |
| <i>Astragalus crassicaarpus</i> Nutt. | Groundplum milkvetch | Δ | Δ | | | | Δ | | |
| <i>Dalea candida</i> Willd. | White prairie clover | Δ | | | | | Δ | | |
| <i>Dalea purpurea</i> Vent. | Purple prairie clover | Δ | Δ | | | | Δ | | |
| <i>Glycyrrhiza lepidota</i> Pursh | Wild licorice | Δ | Δ | | | | Δ | | |
| <i>Lupinus polyphyllus</i> Lindl. | Bigleaf lupine | Δ | Δ | Δ | Δ | | | Δ | |
| <i>Oxytropis lagopus</i> Nutt. | Hare's-foot locoweed | | Δ | Δ | | | Δ | | |
| <i>Oxytropis sericea</i> Torr. & A.Gray | White locoweed | Δ | Δ | Δ | Δ | Δ | Δ | | |
| <i>Pedimelum argophyllum</i> (Pursh) J.W.Grimes | Silvery scurfpea | Δ | Δ | | | | | | Δ |
| <i>Pedimelum esculentum</i> (Pursh) Rydb. | Pomme de prairie | Δ | | | | | Δ | | |
| <i>Psoralea hypogaea</i> Torr. & A.Gray | Little indian breadroot | Δ | | | | | | Δ | |
| <i>Psoralea lanceolata</i> Pursh | Lance-leaf scurfpea | Δ | Δ | Δ | | | | | Δ |
| <i>Thermopsis rhombifolia</i> (Pursh) Richardson | Roundleaf thermopsis | Δ | Δ | | | | Δ | | |
| <i>Vicia americana</i> Willd. | American purple vetch | Δ | Δ | Δ | | | Δ | | |
| Geraniaceae | | | | | | | | | |
| <i>Geranium richardsonii</i> Fisch. & Trautv. | Richardson's geranium | | Δ | Δ | | | Δ | | |

| Plant Names | | Montana vegetation life zones | | | | | Species distribution | | |
|--|------------------------|-------------------------------|----|----|----|----|----------------------|---|---|
| Scientific | Common | PI | Va | Mo | Su | Al | A | B | C |
| <i>Geranium viscosissimum</i> Fisch. & C.A.Mey. | Sticky geranium | | Δ | Δ | -Δ | | Δ | | |
| Lamiaceae | Mint | | | | | | | | |
| <i>Agastache foeniculum</i> (Pursh) Kuntze | Lavender hyssop | Δ | | | | | | | Δ |
| <i>Lycopus asper</i> Greene | Rough bugleweed | Δ | Δ | | | | | Δ | |
| <i>Mentha arvensis</i> L. | Wild mint | Δ | Δ | Δ | | | Δ | | |
| <i>Monarda fistulosa</i> L. | Beebalm | Δ | Δ | Δ | | | Δ | | |
| <i>Prunella vulgaris</i> L. | Self-heal | | Δ | Δ | | | Δ | | |
| <i>Scutellaria galericulata</i> L. | Hooded skullcap | Δ | Δ | Δ | | | Δ | | |
| <i>Stachys palustris</i> L. | Marsh hedge-nettle | Δ | Δ | Δ | | | Δ | | |
| Ranunculaceae | | | | | | | | | |
| <i>Actaea rubra</i> (Aiton) Willd. | Red baneberry | Δ | Δ | Δ | -Δ | | Δ | | |
| <i>Anemone canadensis</i> L. | Canada anemone | Δ | | | | | | | Δ |
| <i>Anemone cylindrica</i> A.Gray | Long-fruited anemone | Δ | Δ | Δ | | | Δ | | |
| <i>Anemone multifida</i> Poir. | Pacific anemone | Δ | Δ | Δ | Δ | Δ | Δ | | |
| <i>Clematis hirsutissima</i> Pursh | Sugarbowl | | Δ | Δ | Δ | | Δ | | |
| <i>Clematis ligusticifolia</i> Nutt. | Western virgin's-bower | Δ | Δ | Δ | | | Δ | | |
| <i>Delphinium bicolor</i> Nutt. | Little larkspur | Δ | Δ | Δ | Δ | Δ | Δ | | |
| <i>Ranunculus pensylvanicus</i> L.f. | Bristly crowfoot | Δ | Δ | | | | | | Δ |
| <i>Thalictrum dasycarpum</i> Fisch., C.A.Mey. & Avé-Lall. | Purple meadowrue | Δ | Δ | Δ | | | | Δ | |
| <i>Thalictrum occidentale</i> A.Gray | Western meadowrue | | | Δ | Δ | | Δ | | |

Fifty of the 61 ethnobotanical species listed currently occur in Lewis and Clark County or the adjoining counties of Flathead, Teton, Cascade, Meagher, Broadwater, Jefferson, and Powell. The remaining 11 species that were found outside of Lewis and Clark County and adjacent counties consist of two species in Apiaceae, three in Fabaceae, one in Lamiaceae, two in Ranunculaceae, and three in Cyperaceae. The following is a list of those 11 species along with their occurrence in Montana: *Angelica dawsonii* S.Watson, is endemic to Idaho, northwest Montana, and adjacent British Columbia, Alberta, Canada; *Lomatium orientale* J.M.Coult. & Rose is found in southeast Montana; *Amorpha canescens* Pursh, a Great Plains species was collected only once in southeast Montana about 70 years ago; *Psoralea argophylla* Pursh is found in the eastern half of Montana; *Psoralea lanceolata* Pursh is found mostly in the eastern half of Montana and in one county in southwestern Montana; *Agastache foeniculum* (Pursh) Kuntze is known from only two counties in eastern Montana; *Anemone canadensis* L. is found in northeast Montana; *Ranunculus pensylvanicus* L.f. is found in western and south-central Montana; *Eriophorum callitrix* Cham. ex C.A.Mey. is found only in south-central Mon-

tana; *Schoenoplectus americanus* (Pers.) Volkart is found in two counties in southwestern Montana; and *Scirpus cyperinus* (L.) Kunth is found in only one county in northwest Montana (Lesica 2012). It is important to note that these species may occur in the surrounding area but have not been documented or that they may have existed in the area historically but conditions may have changed in climate or land-use that precludes their existence in modern times.

The presence of plant resources from distant areas was expected, as prehistoric trade systems have been well documented (Baugh & Ericson 1994, Boyd 1998, Carlson 1994, Cooper 2008, Galm 1994, Vehik & Baugh 1994, Wood 1974) and Northern Plains tribes were known to travel substantial distances in their seasonal rounds (Duke & Wilson 1994, Frison 1991, 1998, Greiser 1994, Reeves 1970). The Beaver Creek Rock Shelter excavation yielded additional evidence of long-distance trade/travel in the form of obsidian and Sauger fish remains. Obsidian from the Beaver Creek Rock Shelter was sourced to Bear Gulch located in southern Idaho (Travis *et al.* 2011). The excavation also revealed Sauger fish bones, which are

currently and historically found only in the middle and lower Missouri River, not the upper Missouri where Beaver Creek is located (Travis *et al.* 2011).

Northern Plains ethnographic plant use

Numerous sources in literature document traditional Native American plant use. The following section contains the most commonly recorded species from the 7 families

that were known to be utilized by Montana Native Americans. Each table contains the tribe or tribes, the plant part, and how the plant was prepared.

Food, beverages, and food-related ethnographic uses

Great Plains Native Americans utilized 25 different plant species for subsistence (Table 3). Subsistence uses were dominated by species and particularly roots in the Fab-

Table 3. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses as foods, beverages, and food-related purposes. Information sources: (B) Blankinship 1905, (C) Clavell 1997, (D) Densmore 1927, (G) Grinnell 1972, (H1) Hart 1981, (H2) Hart 1992, (J) Johnston 1970, (K1) Kindscher 1987, (K2) Kindscher 1992, (M) Moerman 1998, (T1) Taylor 1989, and (T2) Teit 1928.

| Plant names | | Cultural source | Plant information | | | Sources |
|---|----------------------------|-----------------|-------------------|------------|---|----------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Lomatium ambiguum</i> (Nutt.) J.M.Coult. & Rose | Wyeth biscuitroot | Native American | food | root | reduced to flour | B, M |
| <i>Lomatium cous</i> (S. Watson) J.M.Coult. & Rose | Cous biscuitroot | MT Indian | food | root | whole roots dried, pulverized for porridge, cakes or soup, peeled and eaten raw or boiled | B, H2, M |
| <i>Lomatium macrocarpum</i> (Hook. & Arn.) J.M.Coult. & Rose | Large-fruit desert-parsley | Salish | food | root | eaten dried or raw | K1, M |
| <i>Lomatium triternatum</i> (Pursh) J.M.Coult. & Rose | Nineleaf biscuitroot | Blackfeet | food | flower | used to make pemmican | M |
| | | | | root | eaten raw or roasted | M |
| | | | preservative | fruit | to keep the hide of an animal from smelling | M |
| | | MT Indian | food | root | reduced to flour or eaten raw, roasted, or baked | B, M |
| <i>Musineon divaricatum</i> (Pursh) Nutt. | Wild parsley | Blackfeet | food | root | eaten raw | M |
| <i>Osmorhiza chilensis</i> Hook. & Arn. | Western sweet-cicely | Blackfeet | food | root | chewed and eaten as candy | M |
| <i>Perideridia montana</i> (Blank.) Dorn | Gairdner's Yampah | Blackfeet | food | root | eaten raw as a snack | M |
| | | | | | stored for soup or a staple | M |
| | | Cheyenne | food | root | scraped, dried, and stored or pulverized and eaten as mush | H1, M |
| | | Salish | food | root | smashed, formed into bread or cakes, and sun dried | M |
| | | MT Indian | food | root | eaten raw or boiled | M |

| Plant names | | Cultural source | Plant information | | | Sources |
|---|-------------------------|-----------------|-------------------|------------|--|-------------------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>Sium suave</i> Walter | Hemlock water-parsnip | Cree | food | root | eaten roasted, raw, or fried | C, M |
| | | MT Indian | food | herbage | eaten as a relish due to its aromatic flavor | B, M |
| Brassicaceae | | | | | | |
| <i>Turritis glabra</i> L. | Tower-mustard | Cheyenne | beverage | unknown | infusion | G, M |
| Cyperaceae | | | | | | |
| <i>Amphiscirpus nevadensis</i> (S. Watson) Oteng-Yeb. | Nevada bulrush | Cheyenne | food | root | peeled and eaten raw | G, M |
| <i>Schoenoplectus acutus</i> (Muhl. ex Bigelow) Á.Löve & D.Löve | Hardstem bulrush | Cree | food | stem | eaten raw | J, M |
| | | Blackfeet | food | root | eaten raw or cooked | J, M |
| | | MT Indian | food | root | made into syrup, sauce, or relish | B, M |
| | | | | | eaten raw or made into flour for bread | B, M |
| Cheyenne | food | stem | eaten raw | H1, M | | |
| Fabaceae | | | | | | |
| <i>Astragalus canadensis</i> L. | Canadian milkvetch | Blackfeet | food | root | eaten raw or boiled in blood to make broth | K1, M |
| <i>Astragalus crassicaarpus</i> Nutt. | Groundplum milkvetch | Chippewa | tonic | root | decoction | D, K1, M |
| | | MT Indian | food | fruit | eaten raw as a snack | B, M |
| | | | | Pods | eaten raw, cooked, or pickled | B, M |
| <i>Dalea candida</i> Willd. | White prairie clover | Blackfeet | food | root | eaten raw | K1, K2 |
| | | MT Indian | beverage | leaves | unspecified | K1, K2 |
| | | | food | root | unspecified | K1, K2 |
| <i>Dalea purpurea</i> Vent. | Purple prairie clover | MT Indian | food | root | unspecified | K2, M |
| | | | beverage | leaves | unspecified | K2, M |
| <i>Glycyrrhiza lepidota</i> Pursh | Wild licorice | Cheyenne | food | shoots | eaten raw | H2, K1, M |
| | | MT Indian | tonic | root | infusion | H2, M |
| | | | food | | unspecified | H2, M |
| <i>Lupinus polyphyllus</i> Lindl. | Bigleaf lupine | Salish | tonic | unknown | decoction | M, T2 |
| <i>Pediomelum esculentum</i> (Pursh) Rydb. | Pomme de prairie | Blackfeet | food | root | eaten raw or peeled and dried | H2, K1, K2, M, T1 |
| | | Cheyenne | thickening agent | root | dried and made into a powder | H1, M |

| Plant names | | Cultural source | Plant information | | | Sources |
|--|-------------------------|-----------------|---|-----------------|---|--------------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>P. esculentum</i> cont. | Pomme de prairie | Cheyenne | food | unknown | dried plant slices boiled and sweetened to make pudding | H1, M |
| | | | | root | eaten raw or dried | H1, M |
| | | MT Indian | food | root | dried and mashed into bread, cake thickener, or porridge | M |
| | | | | | eaten dried and shredded or inner root core eaten raw, roasted, or boiled | M |
| | | | dried and stored or crushed into powder | M | | |
| <i>Psoralea hypogaea</i> Torr. & A.Gray | Little indian breadroot | Cheyenne | food | root | eaten raw or dried and stored | M |
| <i>Vicia americana</i> Willd. | American purple vetch | MT Indian | food | unknown | cooked and eaten for greens | B, M |
| Lamiaceae | | | | | | |
| <i>Agastache foeniculum</i> (Pursh) Kuntze | Lavender hyssop | Cheyenne | beverage | leaves | made into a tea | M |
| <i>Lycopus asper</i> Greene | Rough bugleweed | Chippewa | food | unknown | dried or boiled | M |
| <i>Mentha arvensis</i> L. | Wild mint | Cheyenne | beverage | leaves and stem | made into a tea for flavoring | H2, J, K2, M |
| | | Cree | | unknown | made into a tea | H2, J, K2, M |
| | | Salish | insecticide | leaves | powdered and sprinkled on meat and berries | H2, J, K2, M |
| | | Kutenai | tonic | unknown | infusion | H2, J, K2, M |
| | | | insecticide | leaves | powdered and sprinkled on meat and berries | H2, J, K2, M |
| | | Blackfeet | spice | leaves | added to meat | H2, J, K2, M |
| | | | beverage | unknown | dried and used to make tea | H2, J, K2, M |
| | | Ojibwa | beverage | unknown | made into a tea | H2, J, K2, M |
| MT Indian | beverage | unknown | unspecified | H2, J, K2, M | | |

| Plant names | | Cultural source | Plant information | | | Sources |
|--------------------------------------|-------------------|-----------------|-------------------|------------|---|---------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>Monarda fistulosa</i> L. | Beebalm | Blackfeet | eating tool | flowerhead | dried and used like a spoon | K1, M |
| | | | food prep tool | flowerhead | dried and used to apply water to a green hide to make it easier to scrape | K1, M |
| | | Salish | preservative | leaves | pulverized and sprinkled on meat | K1, M |
| | | | insecticide | leaves | pulverized and sprinkled on meat | K1, M |
| Ranunculaceae | | | | | | |
| <i>Thalictrum occidentale</i> A.Gray | Western meadowrue | Blackfeet | spice | fruit | unspecified | M |

ceae and Apiaceae families. The primary method of food consumption was to eat the roots raw.

Medicinal uses for pain and fever reduction

Species in 5 of the 7 plant families are represented in the pain and fever-reducing category (Table 4). Of these 7

plant families, Apiaceae and Fabaceae represent the largest variety of plant species with 7 different species each. In treating pain and fevers, roots were the most utilized plant part. The most popular method for preparation was infusions with 19 entries.

Table 4. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses as medicines for pain and fever reduction. Information sources: (D) Densmore 1927, (G1) Gilmore 1977, (G2) Grinnell 1905, (G3) Grinnell 1972, (H1) Hart 1981, (H2) Hart 1992, (H3) Hoffman 1884, (H4) Hoffman 1891, (J1) Johnston 1970, (J2) Johnston 1987 (K1) Kindscher 1987, (K2) Kindscher 1992, (M) Moerman 1998, (S) Smith 1932, and (T) Taylor 1989.

| Plant names | | Cultural source | Plant information | | | Sources |
|--|----------------------------|-----------------|-----------------------------|------------------|---|-----------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Angelica dawsonii</i> S.Watson | Dawson's angelica | Blackfeet | antirheumatic | root | poultice of chewed roots | M |
| | | | analgesic | | infusion for sore armpits or groin | M |
| <i>Cicuta douglasii</i> (DC.) J.M.Coult. & Rose | Western water-hemlock | MT Indian | analgesic | root | unspecified | M |
| <i>Cicuta maculata</i> L. | Spotted water-hemlock | Cree | antirheumatic | root | dried, powdered, & made into a liniment | M |
| <i>Ligusticum canbyi</i> J.M.Coult. & Rose | Canby's wild lovage | Salish | anticonvulsive and headache | root | chewed and rubbed on body | H2, M |
| <i>Lomatium macrocarpum</i> (Hook. & Arn.) J.M.Coult. & Rose | Large-fruit desert-parsley | Crow | antirheumatic | root | poultice of root shavings | M |
| <i>Lomatium orientale</i> J.M.Coult. & Rose | Oriental desert-parsley | Cheyenne | anti-inflammatory | roots and leaves | infusion | G3, H2, M |
| <i>Sanicula marilandica</i> L. | Maryland black snakeroot | Ojibwa | fever reducer | root | infusion | M, S |

| Plant names | | Cultural source | Plant information | | | Sources |
|--|-------------------------|-----------------|-----------------------------|-------------------------|---|------------------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Brassicaceae | | | | | | |
| <i>Physaria didymocarpa</i> (Hook.) A.Gray | Common twinpod | Blackfeet | analgesic | unknown | plant chewed for cramps | M |
| | | | antirheumatic | root | infusion for body aches | M |
| | | | antirheumatic | unknown | strong infusion of plant used as a liniment on sprains | M |
| | | | anti-inflammatory | unknown | decoction of plant | M |
| Fabaceae | | | | | | |
| <i>Amorpha canescens</i> Pursh | Lead plant | Ojibwa | analgesic | root | decoction | H3, M |
| <i>Astragalus canadensis</i> L. | Canadian milkvetch | Blackfeet | analgesic | root | treats pediatric chest aches by bathing in the steam | K2, M |
| <i>Astragalus crassicaulus</i> Nutt. | Groundplum milkvetch | Chippewa | anticonvulsive and headache | root | decoction | D, M |
| <i>Glycyrrhiza lepidota</i> Pursh | Wild licorice | Blackfeet | analgesic | root | infusion | M |
| | | | antirheumatic | | infusion | M |
| <i>Pediomelum argophyllum</i> (Pursh) J.W.Grimes | Silvery scurfpea | Cheyenne | fever reducer | several parts | decoction or salve, infusion of ground leaves and stems | G2, G3, M |
| <i>Pediomelum esculentum</i> (Pursh) Rydb. | Pomme de prairie | Blackfeet | antirheumatic | root | poultice of chewed roots for sprains | H2, K1, K2, M, T |
| <i>Thermopsis rhombifolia</i> (Pursh) Richardson | Roundleaf thermopsis | Cheyenne | analgesic antirheumatic | leaves | dried, burned, and inhaled | G1, H1, M |
| | | MT Indian | | flower | dried and smoked | G1, M |
| Lamiaceae | | | | | | |
| <i>Agastache foeniculum</i> (Pursh) Kuntze | Lavender hyssop | Cheyenne | analgesic | leaves | infusion used to treat chest pain due to coughing | G3, K2, M |
| | | | fever reducer | | powdered and rubbed on the body | H1, M |
| | | Chippewa | analgesic | root | infusion | H1, M |
| <i>Mentha arvensis</i> L. | Wild mint | Cree | headache | leaves | infusion | H2, J1, M |
| | | | fever reducer | | infusion | D, M |
| | | | toothache | leafy stems and flowers | poultice | D, M |

| Plant names | | Cultural source | Plant information | | | Sources |
|---|------------------------|-----------------|-----------------------------|------------|------------------------------------|-----------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>M. arvensis</i> cont. | Wild mint | Salish | toothache | leaves | infusion | H2, J1, M |
| | | | fever reducer | leaves | infusion | H2, J1, M |
| | | Kutenai | antirheumatic | leaves | poultice | H2, J1, M |
| | | | fever reducer | unknown | infusion | H2, J1, M |
| | | Blackfeet | chest pain | leaves | unspecified | H2, J1, M |
| | | Ojibwa | stomach pain | unknown | infusion of plant | H2, J1, M |
| fever reducer | leaves | | infusion | H2, J1, M | | |
| <i>Monarda fistulosa</i> L. | Beebalm | Chippewa | headache | leaves | chewed and placed in nostrils | M |
| | | Salish | fever reducer | unknown | infusion | M |
| | | Ojibwa | fever reducer | flower | infusion | H4, M |
| | | | anticonvulsive and headache | unknown | infusion | M |
| Ranunculaceae | | | | | | |
| <i>Anemone canadensis</i> L. | Canada anemone | Ojibwa | analgesic | root | decoction for lumbar pain | H4, M |
| <i>Anemone multifida</i> Poir. | Pacific anemone | Blackfeet | headache | seed head | burn on hot coals and inhale smoke | J2, M |
| <i>Clematis hirsutissima</i> Pursh | Sugarbowls | MT Indian | headache | leaves | decoction | H4, M |
| <i>Clematis ligusticifolia</i> Nutt. | Western virgin's-bower | Blackfeet | fever reducer | bark | unspecified | J1, J2, M |
| <i>Thalictrum dasycarpum</i> Fisch., C.A.Mey. & Avé-Lall. | Purple meadowrue | Ojibwa | fever reducer | root | infusion | M, S |

Stomach-related medicinal use

All 7 plant families were traditionally used for stomach-related ailments with Apiaceae and Fabaceae dominating with 5 plant species each (Table 5). The most common uses were general stomach aids and antidiarrheals. Roots were the most common plant part used with infusions, the preferred method for plant preparation.

Domestic uses

Species in 5 of the 7 plant families were utilized for traditional domestic purposes, including fragrance, hair care, cosmetics, decorations, dye, smoking, and weaving materials (Table 6). Among the 16 different plant species, the most common use was fragrance. Ethnographic literature

has shown there is not one preferred type of plant part or method of preparation for domestic use.

Medicinal uses for ear, nose, and throat ailments

Species in 6 of the 7 plant families were used for treating ailments of the ears, eyes, throat, nose, and mouth (Table 7). The plant family with the most medicinal uses in this category is Apiaceae. Throat aids were the most commonly treated ailment, and infusions made primarily of roots were the preparation method of choice.

Traditional medicinal skin care

The Fabaceae family has the largest number of plant species traditionally used for skin care, including general

Table 5. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses as stomach-related medicines. Information sources: (G) Grinnell 1972, (H1) Hart 1981, (H2) Hart 1992, (H3) Hoffman 1891, (J) Johnston 1970, (K1) Kindscher 1987, (K2) Kinscher 1992, (M) Moerman 1998, (S) Scheinost 2010, and (T) Taylor 1989.

| Plant names | | Cultural source | Plant information | | | Sources | |
|---|-------------------------|-----------------|-------------------|------------------------|--|---------|----------|
| Scientific | Common | | Uses | Parts used | Preparation | | |
| Apiaceae | | | | | | | |
| <i>Angelica dawsonii</i> S.Watson | Dawson's angelica | Blackfeet | stomach aid | root | infusion | M | |
| | | | malnutrition aid | | | M | |
| <i>Cicuta douglasii</i> (DC.) J.M.Coult. & Rose | Western water-hemlock | Kutenai | emetic | root | infusion mixed with water | M | |
| | | Salish | cathartic | unknown | unspecified | M | |
| emetic | M | | | | | | |
| <i>Lomatium orientale</i> J.M.Coult. & Rose | Oriental desert-parsley | Cheyenne | stomach aid | roots and leaves | infusion | H2, M | |
| | | | antidiarrheal | | | H2, M | |
| <i>Osmorhiza longistylis</i> (Torr.) DC. | Smoother sweet-cicely | Cheyenne | stomach aid | leaves, stem, and root | infusion | G, M | |
| <i>Perideridia montana</i> (Blank.) Dorn | Gairdner's yampah | Blackfeet | antidiarrheal | root | infusion | M | |
| | | | antiemetic | | | M | |
| | | | diuretic | | eaten | M | |
| | | | laxative | | | M | |
| Brassicaceae | | | | | | | |
| <i>Physaria didymocarpa</i> (Hook.) A.Gray | Common twinpod | Blackfeet | stomach aid | unknown | decoction that expands the stomach so food can be eaten without pain by someone who has not eaten for an extended period of time | M | |
| | | | stomach cramps | unknown | | | M |
| | | | stomach pain | leaves | | | infusion |
| Cyperaceae | | | | | | | |
| <i>Schoenoplectus acutus</i> (Muhl. ex Bigelow) Á.Löve & D.Löve | Hardstem bulrush | MT Indian | dietary aid | root | chewed to prevent dehydration | J, M | |
| Fabaceae | | | | | | | |
| <i>Amorpha canescens</i> Pursh | Lead plant | Ojibwa | stomach aid | root | decoction | H3, M | |
| <i>Astragalus americanus</i> (Hook.) M.E.Jones | American milkvetch | Cree | stomach pain | root | chewed | M | |
| | | | stomach flu | | | M | |
| <i>Dalea candida</i> Willd. | White prairie clover | Blackfeet | antidiarrheal | root | dried and made into a tea | K1 | |

| Plant names | | Cultural source | Plant information | | | Sources |
|--|--------------------|-----------------|-----------------------|------------------|---|-----------------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>Glycyrrhiza lepidota</i> Pursh | Wild licorice | Cheyenne | antidiarrheal | roots and leaves | infusion | H1, H2, M |
| | | | stomach aid | | | H1, H2, M |
| <i>Pediomelum esculentum</i> (Pursh) Rydb. | Pomme de prairie | Blackfeet | gastroenteritis | root | dried | K1, K2, M, T |
| | | | bowel complaints | | chewed | K1, K2, M, T |
| | | | colic | | chewed and blown into baby's rectum | K1, K2, M, T |
| | | Cheyenne | antidiarrheal | unknown | unspecified | H1, M |
| Geraniaceae | | | | | | |
| <i>Geranium viscosissimum</i> Fisch. & C.A.Mey. | Sticky geranium | Blackfeet | malnutrition aid | leaves | infusion eaten and applied to the heads of two women with large heads due to malnutrition. Both women experienced relief and soon after died. | M, S |
| Lamiaceae | | | | | | |
| <i>Mentha arvensis</i> L. | Wild mint | Cheyenne | antiemetic | leaves and stem | ground infusion or boiled | K2, M |
| | | MT Indian | relieves gas | unknown | steeped in water and drunk | K2, M |
| <i>Monarda fistulosa</i> L. | Beebalm | Blackfeet | emetic | unknown | infusion | K2, M |
| | | Ojibwa | stomach aid | root | decoction | K2, M |
| <i>Prunella vulgaris</i> L. | Self-heal | Chippewa | cathartic | root | compound decoction | M |
| <i>Stachys palustris</i> L. | Marsh hedge-nettle | Chippewa | gastro-intestinal aid | leaves | fresh or dried infusion for sudden colic | M |
| Ranunculaceae | | | | | | |
| <i>Actaea rubra</i> (Aiton) Willd. | Red baneberry | Cheyenne | dietary aid | root | decoction for improving appetite | H1, H2, M |
| | | Ojibwa | stomach aid | root | eaten | H1, H2, M |
| <i>Delphinium bicolor</i> Nutt. | Little larkspur | Blackfeet | antidiarrheal | unknown | infusion | M |

Table 6. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses for domestic purposes. Information sources: (B) Blankinship 1905, (G1) Gilmore 1977, (G2) Grinnell 1972, (H1) Hart 1981, (H2) Hart 1992, (J) Johnston 1970, (K1) Kindscher 1987, (K2) Kindscher 1992, (M) Moerman 1998, (S) Smith 1932, (T1) Taylor 1989, and (T2) Turner 1971.

| Plant names | | Cultural source | Plant information | | | Sources |
|---|-------------------------|-----------------|-------------------|------------------|---|-------------------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Cicuta maculata</i> L. | Spotted water-hemlock | Chippewa | smoke | seed | mixed with tobacco | M |
| <i>Ligusticum canbyi</i> J.M.Coult. & Rose | Canby's wild lovage | Crow | fragrance | root | shavings on live coals | H2, M |
| | | | smoke | root | shavings added to tobacco | H2, M |
| <i>Osmorhiza occidentalis</i> (Nutt.) Torr. | Western sweet-cicely | Blackfeet | dye | stem | mixed with ochre and applied to robes | M |
| | | | fragrance | root | used as perfume for clothes and diapers | M |
| Cyperaceae | | | | | | |
| <i>Amphiscirpus nevadensis</i> (S.Watson) Oteng-Yeb. | Nevada bulrush | Cheyenne | weaving material | stem | woven and used for rugs, and bedding | G2, M |
| | | | ceremonial | unknown | Sundance ceremony | G2, M |
| <i>Carex nebraskensis</i> Dewey | Nebraska sedge | Cheyenne | ceremonial | unknown | Sundance and Massaum ceremonies | H1, J, M |
| | | Blackfeet | ceremonial | leaves and grass | tied around buffalo skulls because it is thought to be a favorite food of the buffalo | H1, J, M |
| <i>Schoenoplectus acutus</i> (Muhl. ex Bigelow) Á.Löve & D.Löve | Hardstem bulrush | MT Indian | weaving material | stem | used to make mats, rugs and bedding | B, J1, M |
| <i>Schoenoplectus americanus</i> (Pers.) Volkart | Three-square bulrush | Salish | weaving material | leaves | sun-dried and used to make mats, rugs, and bedding | M, T2 |
| <i>Scirpus cyperinus</i> (L.) Kunth | Woolgrass | Ojibwa | weaving material | rushes | used to make storage bags and mats | M |
| Fabaceae | | | | | | |
| <i>Oxytropis sericea</i> Torr. & A.Gray | White locoweed | Blackfeet | decoration | stem | jewelry on headdresses for kids | M |
| <i>Psoralea esculenta</i> Pursh | Pomme-de-prairie | Blackfeet | decoration | root | dried pieces used on clothing | H2, K1, K2, M, T1 |
| <i>Psoralea lanceolata</i> Pursh | Lance-leaf scurfpea | Cheyenne | ceremonial | unknown | used for unspecified ceremonies | G2, M |
| <i>Thermopsis rhombifolia</i> (Pursh) Richardson | Roundleaf thermopsis | Blackfeet | dye | flower petals | rubbed on arrow shaft for yellow coloring | M |

| Plant names | | Cultural source | Plant information | | | Sources |
|---|-------------------|-----------------|---------------------------|----------------------|---|----------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Lamiaceae | | | | | | |
| <i>Mentha arvensis</i> L. | Wild mint | Cheyenne | hair oil | unknown | decoction of plant | K2, M |
| | | | fragrance | leaves and stem | used as perfume | K2, M |
| | | MT Indian | fragrance | unknown | for the home | K2, M |
| <i>Monarda fistulosa</i> L. | Beebalm | Crow | fragrance | unknown | plant mixed with other plants and beaver castor oil for use on hair, body, & clothing | M |
| | | Kutenai | fragrance | leaves | placed on hot rocks for scent in sweat house | M |
| | | MT Indian | fragrance | unknown | used as perfume for hair, body, and home | M |
| Ranunculaceae | | | | | | |
| <i>Delphinium bicolor</i> Nutt. | Little larkspur | Blackfeet | shine and straighten hair | unknown | infusion | M |
| | | | dye | flower | used to dye quills light blue | M |
| <i>Ranunculus pensylvanicus</i> L.f. | Bristly crowfoot | Ojibwa | dye | entire plant | boiled for red coloring | M, S |
| <i>Thalictrum dasycarpum</i> Fisch., C.A.Mey. & Avé-Lall. | Purple meadowrue | Blackfeet | fragrance | fruit | unspecified | G1, J, M |
| | | MT Indian | fragrance | fruit | stored for smell | G1, J, M |
| <i>Thalictrum occidentale</i> A.Gray | Western meadowrue | Blackfeet | cosmetic | fruit | powdered and mixed with water | J, M |
| | | | insecticide | fruit, seeds, leaves | unspecified | J, M |
| | | | fragrance | fruit | dried and placed in buckskin bags | J, M |
| | | | paint | fruit | crushed and used as paint for robes | |

Table 7. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses for ear, nose and throat ailments. Information sources: (B) Blankinship 1905, (H) Hart 1992, (J) Johnston 1970, (K1) Kindscher 1987, (K2) Kindscher 1992, (M) Moerman 1998, (S) Smith 1932, and (T) Taylor 1989.

| Plant names | | Cultural source | Plant information | | | Sources |
|---|-----------------------|-----------------|-------------------|------------|-------------|---------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Ligusticum canbyi</i> J.M. Coult. & Rose | Canby's wild lovage | Crow | ear aid | root | infusion | H2, M |
| <i>Osmorhiza chilensis</i> Hook. & Arn. | Chilean sweet-cicely | Blackfeet | throat aid | root | hot drink | M |
| <i>Osmorhiza longistylis</i> (Torr.) DC. | Smoother sweet-cicely | Ojibwa | throat aid | root | infusion | M, S |

| Plant names | | Cultural source | Plant information | | | Sources |
|---|----------------------------|-----------------|-------------------|------------|---|-----------------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>Osmorhiza occidentalis</i> (Nutt.) Torr. | Western sweet-cicely | Blackfeet | eye aid | root | infusion | M |
| | | | nose aid | root | infusion | M |
| <i>Perideridia montana</i> (Blank.) Dorn | Gairdner's yampah | Blackfeet | throat aid | root | infusion | M |
| <i>Peucedanum macrocarpum</i> Nutt. | Large-fruit desert-parsley | Crow | throat aid | root | chewed for the juice | M |
| Brassicaceae | | | | | | |
| <i>Physaria didymocarpa</i> (Hook.) A.Gray | Common twinpod | Blackfeet | ear aid | leaves | infusion for ear infections | M |
| | | | eye aid | leaves | infusion for bloodshot eyes | M |
| | | | throat aid | unknown | chewed | M |
| | | | oral aid | leaves | clenched between the teeth to treat toothaches | M |
| Fabaceae | | | | | | |
| <i>Glycyrrhiza lepidota</i> Pursh | Wild licorice | Blackfeet | throat aid | root | infusion | H, M |
| | | MT Indian | throat aid | root | chewed for the juice to strengthen the throat for singing | H, M |
| <i>Oxytropis lagopus</i> Nutt. | Hare's-foot locoweed | Blackfeet | throat aid | leaves | chewed | K2, M |
| <i>Oxytropis sericea</i> Torr. & A.Gray | White locoweed | Blackfeet | ear aid | leaves | infusion | K2, M |
| <i>Psoralea esculenta</i> Pursh | Pomme-de-prairie | Blackfeet | ear aid | root | chewed root spittle to remove matter | K1, K2, H, M, T |
| | | | eye aid | root | chewed root spittle to remove matter | K1, K2, H, M, T |
| | | | throat aid | root | chewed | K1, K2, H, M, T |
| | | | oral aid | root | chewed for teething | K1, K2, H, M, T |
| Geraniaceae | | | | | | |
| <i>Geranium viscosissimum</i> Fisch. & C.A.Mey. | Sticky geranium | Blackfeet | eye aid | leaves | infusion | M |
| Lamiaceae | | | | | | |
| <i>Mentha arvensis</i> L. | Wild mint | Cree | oral aid | flower | ground, mixed with yarrow, put into a cloth, moistened, and rubbed on the gum to remove pus | D, M |
| <i>Monarda fistulosa</i> L. | Beebalm | Blackfeet | throat aid | root | chewed for swollen glands | J, K2, M |

| Plant names | | Cultural source | Plant information | | | Sources |
|--------------------------------------|------------------------|-----------------|-------------------|------------|--|----------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>M. fistulosa</i> cont. | Beebalm | Blackfeet | eye aid | blossoms | solution for eye wash | J, K2, M |
| | | Salish | oral aid | unknown | unspecified for toothaches | J, K2, M |
| | | | eye aid | unknown | solution for soreness | J, K2, M |
| <i>Prunella vulgaris</i> L. | Self-heal | Blackfeet | eye aid | unknown | infusion made into a wash to keep the eye moist and cold | M |
| Ranunculaceae | | | | | | |
| <i>Anemone canadensis</i> L. | Canada anemone | Ojibwa | throat aid | root | eaten to sing well | M, S |
| <i>Clematis ligusticifolia</i> Nutt. | Western virgin's-bower | MT Indian | throat aid | unknown | chewed | B, M |
| | | Blackfeet | throat aid | foliage | unspecified | M |

skin aids, burn dressings, and diaper rash (Table 8). Ethnographic literature indicates general skin aids were the most commonly used remedy. Infusions, made primarily with roots, were the most widespread practice for preparing the plants.

Traditional cough and cold remedies

Species in 6 of the 7 plant families were traditionally used as cough and cold remedies (Table 9). The majority of the species were used to treat colds. Infusions, made primar-

Table 8. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses for skin care. Information sources: (B) Blankinship 1905, (H1) Hart 1981, (H2) Hart 1992, (K1) Kindscher 1987, (K2) Kindscher 1992, (M) Moerman 1998, and (T) Taylor 1989.

| Plant names | | Cultural source | Plant information | | | Sources |
|---|-----------------------|-----------------|-------------------|------------|---|---------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Angelica dawsonii</i> S.Watson | Dawson's angelica | Blackfeet | skin aid | root | poultice of chewed roots | M |
| <i>Cicuta douglasii</i> (DC.) J.M.Coult. & Rose | Western water-hemlock | Kutenai | skin aid | root | pounded | M |
| <i>Osmorhiza occidentalis</i> (Nutt.) Torr. | Western sweet-cicely | Blackfeet | skin aid | root | infusion | M |
| <i>Perideridia montana</i> (Blank.) Dorn | Gairdner's yampah | Blackfeet | skin aid | root | infusion | M |
| Brassicaceae | | | | | | |
| <i>Erysimum cheiranthoides</i> L. | Wormseed wallflower | Chippewa | skin aid | root | decoction | M |
| <i>Physaria didymocarpa</i> (Hook.) A.Gray | Common twinpod | Blackfeet | skin aid | unknown | infusion of plants to heal wounds | M |
| | | | skin aid | unknown | strong infusion used as a liniment for dislocations | M |
| | | | diaper rash | unknown | decoction | M |
| Fabaceae | | | | | | |
| <i>Astragalus canadensis</i> L. | Canadian milkvetch | Blackfeet | skin aid | root | poultice of chewed roots applied to cuts | K2, M |

| Plant names | | Cultural source | Plant information | | | Sources |
|--|-------------------------|-----------------|-------------------|-----------------|--|----------------------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>Dalea purpurea</i> Vent. | Purple prairie clover | MT Indian | skin aid | leaves | poultice of steeped leaves applied to fresh wounds | B, M |
| <i>Oxytropis lagopus</i> Nutt. | Hare's-foot locoweed | Blackfeet | skin aid | unknown | plant chewed to allay swelling | M |
| <i>Oxytropis sericea</i> Torr. & A.Gray | White locoweed | Blackfeet | skin aid | leaves | infusion | K2, M |
| <i>Psoralea argophylla</i> Pursh | Silvery scurfpea | MT Indian | skin aid | unknown | decoction used for washing wounds | B, M |
| <i>Psoralea esculenta</i> Pursh | Pomme-de-prairie | Cheyenne | burn dressing | unknown | unspecified | H1, H2, K1, K2, M, T |
| Lamiaceae | | | | | | |
| <i>Agastache foeniculum</i> (Pursh) Kuntze | Lavender hyssop | Chippewa | burn dressing | leaves or stalk | simple or compound poultice | M |
| <i>Monarda fistulosa</i> L. | Beebalm | Blackfeet | skin aid | flowerhead | poultice applied to heal burst boils | K2, M |
| | | | skin aid | unknown | poultice applied to heal cuts | K2, M |
| <i>Prunella vulgaris</i> L. | Self-heal | Blackfeet | skin aid | unknown | infusion applied to wash a burst boil or neck sore | M |
| Ranunculaceae | | | | | | |
| <i>Actaea rubra</i> (Aiton) Willd. | Red baneberry | Cheyenne | skin aid | root | unspecified | H1, H2, M |
| <i>Anemone canadensis</i> L. | Canada anemone | Chippewa | skin aid | root | poultice or infusion | M |

Table 9. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses as cough and cold remedies. Information sources: (G) Grinnell 1972, (H1) Hart 1981, (H2) Hart 1992, (J1) Johnston 1970, (J2) Johnston 1987, (K) Kindscher 1992, (M) Moerman 1998, and (S) Scheinost 2010.

| Plant names | | Cultural source | Plant information | | | Sources |
|---|----------------------------|-----------------|-------------------|----------------|-------------------------------------|---------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Ligusticum canbyi</i> J.M. Coult. & Rose | Canby's wild lovage | Crow | cold remedy | root | chewed | H2, M |
| | | | cough medicine | root | chewed | H2, M |
| <i>Peucedanum macrocarpum</i> Nutt. | Large-fruit desert-parsley | Crow | cold remedy | root | infusion of shavings and animal fat | M |
| <i>Osmorhiza chilensis</i> Hook. & Arn. | Chilean sweet-cicely | Blackfeet | cold remedy | root | hot drink | H1, M |
| | | Cheyenne | cold remedy | root or leaves | chewed roots or leaf infusion | M |
| <i>Osmorhiza occidentalis</i> (Nutt.) Torr. | Western sweet-cicely | Blackfeet | cough medicine | unknown | infusion | M |

| Plant names | | Cultural source | Plant information | | | Sources |
|--|----------------------|-----------------|-------------------|------------|--|-----------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>Perideridia montana</i> (Blank.) Dorn | Gairdner's yampah | Blackfeet | cough medicine | root | infusion, chewed or smudge smoke for nagging cough | M |
| Brassicaceae | | | | | | |
| <i>Turritis glabra</i> L. | Tower-mustard | Cheyenne | cold remedy | unknown | infusion | G, M |
| Fabaceae | | | | | | |
| <i>Glycyrrhiza lepidota</i> Pursh | Wild licorice | Blackfeet | cough medicine | root | infusion | M |
| <i>Thermopsis rhombifolia</i> (Pursh) Richardson | Roundleaf thermopsis | Cheyenne | cold remedy | leaves | dried, burned, and inhaled | H1, M |
| Geraniaceae | | | | | | |
| <i>Geranium viscosissimum</i> Fisch. & C.A.Mey. | Sticky geranium | Blackfeet | cold remedy | leaves | infusion with a sweat bath | M, S |
| Lamiaceae | | | | | | |
| <i>Agastache foeniculum</i> (Pursh) Kuntze | Lavender hyssop | Cheyenne | cold remedy | leaves | infusion | K, M |
| | | Chippewa | cough medicine | root | infusion | K, M |
| <i>Mentha arvensis</i> L. | Wild mint | Cree | cold remedy | leaves | infusion | C, H2, M |
| | | Salish | cold remedy | leaves | infusion | C, H2, M |
| | | | cough medicine | leaves | infusion | C, H2, M |
| | | Kutenai | cough medicine | unknown | infusion | C, H2, M |
| | | | cold remedy | unknown | infusion | C, H2, M |
| <i>Monarda fistulosa</i> L. | Beebalm | Blackfeet | cough medicine | unknown | infusion | K, M |
| | | Chippewa | cold remedy | plant tops | unspecified | K, M |
| | | Salish | cold remedy | unknown | infusion | K, M |
| | | | cold remedy | unknown | hung on the wall | K, M |
| | | | cough medicine | unknown | unspecified | K, M |
| Ranunculaceae | | | | | | |
| <i>Actaea rubra</i> (Aiton) Willd. | Red baneberry | Blackfeet | cold remedy | root | decoction | J1, J2, M |

| Plant names | | Cultural source | Plant information | | | Sources |
|---|------------------------|-----------------|-------------------|------------|-------------|-----------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>Clematis ligusticifolia</i> Nutt. | Western virgin's-bower | MT Indian | cold remedy | unknown | chewed | J1, J2, M |
| | | Blackfeet | cold remedy | foliage | unspecified | J1, J2, M |

ily with leaves, were the most frequently used method of preparation.

Medicinal remedies for heart, lung, and kidney ailments

Species in 4 of the 7 plant families were used as medicinal remedies for heart, lung, and kidney ailments, Apiaceae and Lamiaceae having the largest variety of different plant species with 4 each (Table 10). Lung disorders are labeled as pulmonary or respiratory aids and are the most frequently listed. The favored preparation technique was infusions made from roots.

Traditional antihemorrhage and hemostat use

Species in all 7 plant families were traditionally used for preparing hemostatic and antihemorrhagic medicines (Ta-

ble 11). When controlling bleeding, root infusions were the most commonly used.

Traditional medicinal feminine care

Species in 4 of the 7 plant families were used in traditional medicinal feminine care. Uses consist of birthing aids, abortifacients, breast and breastfeeding aids, a menstrual aid, a feminine deodorant, a general gynecological remedy, and a newborn aid (Table 12). Prepared root infusions are the primary form of treatment.

Ethnographic hunting aids

Ethnographic hunting aids include animal attractants, athletic strengtheners, a water-proofing agent, and a thirst aid and were found in 4 of the 7 plant families (Table 13). Notably, *Cicuta maculata* L. and *R. pensylvanicus*—both deer attractants from different plant families—use differ-

Table 10. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses as remedies for heart, lung, and kidney ailments. Information sources: (H1) Hart 1981, (H2) Hart 1992, (H3) Hoffman 1891, (K1) Kindscher 1987, (K2) Kindscher 1992, (M) Moerman 1998, and (T) Taylor 1989.

| Plant names | | Cultural source | Plant information | | | Sources |
|---|-------------------------|-----------------|-------------------|---------------------|---|------------------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Ligusticum canbyi</i> J.M. Coult. & Rose | Canby's wild lovage | Cree | heart aid | root | unspecified | H2, M |
| | | Crow | respiratory aid | root | shavings added to boiling water to inhale steam | H2, M |
| <i>Lomatium triternatum</i> (Pursh) J.M. Coult. & Rose | Nineleaf biscuitroot | Blackfeet | pulmonary aid | roots and leaves | infusion | M |
| <i>Osmorhiza longistylis</i> (Torr.) DC. | Smoother sweet-cicely | Cheyenne | kidney aid | leaves, stem, root | infusion | M |
| <i>Perideridia montana</i> (Blank.) Dorn | Gairdner's yampah | Blackfeet | respiratory aid | root | infusion | M |
| Fabaceae | | | | | | |
| <i>Dalea purpurea</i> Vent. | Purple prairie clover | Chippewa | heart aid | leaves and blossoms | decoction | M |
| <i>Oxytropis lagopus</i> Nutt. | Hare's-foot locoweed | Blackfeet | respiratory aid | unknown | eaten for asthma | K2 |
| <i>Psoralea esculenta</i> Pursh | Pomme-de-prairie | Blackfeet | pulmonary aid | root | chewed | H2, K1, K2, M, T |

| Plant names | | Cultural source | Plant information | | | Sources |
|--|----------------------|-----------------|-------------------|-----------------|---|---------------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Lamiaceae | | | | | | |
| <i>Agastache foeniculum</i> (Pursh) Kuntze | Lavender hyssop | Cheyenne | heart aid | leaves | infusion for a weak heart | K2, M |
| <i>Mentha arvensis</i> L. | Wild mint | Cheyenne | heart aid | leaves and stem | ground infusion or boiled to strengthen the heart | H1, H2, K2, M |
| | | Kutenai | kidney aid | unknown | infusion | H1, H2, K2, M |
| | | Blackfeet | heart aid | leaves | unspecified | H1, H2, K2, M |
| <i>Monarda fistulosa</i> L. | Beebalm | Blackfeet | kidney aid | unknown | infusion | K2, M |
| | | Salish | pulmonary aid | unknown | infusion for pneumonia | K2, M |
| | | Kutenai | kidney aid | unknown | infusion | K2, M |
| | | Ojibwa | respiratory aid | unknown | boiled and inhale the steam | H3, M |
| <i>Scutellaria galericulata</i> L. | Hooded skullcap | Ojibwa | heart aid | unknown | unspecified | M, S |
| Ranunculaceae | | | | | | |
| <i>Anemone cylindrica</i> A.Gray | Long-fruited anemone | Ojibwa | pulmonary aid | root | infusion | M, S |
| <i>Thalictrum occidentale</i> A.Gray | Western meadowrue | Blackfeet | pulmonary aid | seeds | infusion | M |

Table 11. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic antihemorrhage and hemostat uses. Information sources: (D) Densmore 1927, (H) Hart 1981, (K) Kindscher 1992, (M) Moerman 1998, (R) Reaves 2005, and (S) Smith 1932.

| Plant names | | Cultural source | Plant information | | | Sources |
|---|---------------------------|-----------------|-------------------|-------------|--|---------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Angelica dawsonii</i> S.Watson | Dawson's angelica | Blackfeet | hemostat | root | infusion | M |
| Brassicaceae | | | | | | |
| <i>Draba incerta</i> Payson | Yellowstone whitlow-grass | Blackfeet | hemostat | root | infusion used to stop nose bleeds | M |
| Cyperaceae | | | | | | |
| <i>Eriophorum callitrix</i> Cham. ex C.A.Mey. | Sheathed cotton-grass | Ojibwa | hemostat | matted fuzz | unspecified | M, S |
| <i>Schoenoplectus acutus</i> (Muhl. ex Bigelow) Á.Löve & D.Löve | Hardstem bulrush | Cree | hemostat | stem | poultice of stem pith applied under a dressing | M |
| Fabaceae | | | | | | |
| <i>Astragalus canadensis</i> L. | Canadian milkvetch | Blackfeet | antihemorrhagic | root | chewed when spitting blood | K, M |

| Plant names | | Cultural source | Plant information | | | Sources |
|---|-----------------------|-----------------|-------------------|-------------------------|---|---------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| <i>Astragalus crassicaarpus</i> Nutt. | Groundplum milkvetch | Chippewa | hemostat | root | decoction | D, M |
| Geraniaceae | | | | | | |
| <i>Geranium richardsonii</i> Fisch. & Trautv. | Richardson's geranium | Cheyenne | hemostat | roots or leaves | infusion of dried root or powdered leaves used as a snuff to stop nose bleeds | H, M, R |
| Lamiaceae | | | | | | |
| <i>Agastache foeniculum</i> (Pursh) Kuntze | Lavender hyssop | Cree | antihemorrhagic | leaves and stems | infusion for spitting blood | D, M |
| <i>Mentha arvensis</i> L. | Wild mint | Cree | antihemorrhagic | unknown | plant infusion | M |
| | | Cree | hemostat | leafy stems and flowers | inserted into the nose to stop bleeding | M |
| Ranunculaceae | | | | | | |
| <i>Anemone canadensis</i> L. | Canada anemone | Chippewa | hemostat | leaves | used to stop bleeding noses, sores and wounds | M |

Table 12. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic medicinal feminine care uses. Information sources: (C) Clavelle 1997, (H1) Hart 1981, (H2) Holmes 1884, (K) Kindscher 1992, (M) Moerman 1998, (S) Smith 1932, (T1) Taylor 1989, and (T2) Turner 1971.

| Plant names | | Cultural source | Plant information | | | Sources |
|---|---------------------------|-----------------|--------------------|------------|--|---------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Osmorhiza longistylis</i> (Torr.) DC. | Smoother sweet-cicely | Chippewa | menstrual aid | root | infusion to treat amenorrhea | M |
| | | Ojibwa | birthing aid | root | infusion | M, S |
| <i>Osmorhiza occidentalis</i> (Nutt.) Torr. | Western sweet-cicely | Blackfeet | breast aid | root | infusion to treat swollen breasts | M |
| | | | feminine deodorant | root | infusion | M |
| | | | birthing aid | root | infusion to induce labor | M |
| <i>Perideridia montana</i> (Blank.) Dorn | Gardner's yampah | Blackfeet | breast aid | root | infusion used to massage sore breasts with warm stones | M |
| Brassicaceae | | | | | | |
| <i>Draba incerta</i> Payson | Yellowstone whitlow-grass | Blackfeet | abortifacient | unknown | unspecified | M |
| <i>Physaria didymocarpa</i> (Hook.) A. Gray | Common twinpod | Blackfeet | newborn aid | leaves | decoction to aid in the healing of the umbilical cord | M |
| | | | abortifacient | unknown | infusion taken in small amounts | M |

| Plant names | | Cultural source | Plant information | | | Sources |
|------------------------------------|-----------------|-----------------|----------------------|-------------|---|----------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Lamiaceae | | | | | | |
| <i>Monarda fistulosa</i> L. | Beebalm | Salish | birthing aid | unknown | beverage drunk after childbirth | K, M |
| | | MT Indian | birthing aid | unknown | infusion to aid in the expulsion of afterbirth | K, M |
| <i>Prunella vulgaris</i> L. | Self-heal | Ojibwa | gynecological remedy | root | compound | M, S |
| Ranunculaceae | | | | | | |
| <i>Actaea rubra</i> (Aiton) Willd. | Red baneberry | Cheyenne | breast feeding aid | root | infusion used after childbirth to increase the milk flow | M |
| | | | | stem | infusion taken by pregnant or breastfeeding mothers to increase the milk flow | H1, M |
| | | Chippewa | menstrual aid | root | decoction to treat excessive menstrual flow | M |
| | | Cree | menstrual aid | root | infusion to treat excessive menstrual flow | C, H2, M |
| | | | birthing aid | whole plant | infusion taken to clear up the birthing system after childbirth | C, M |
| | | Ojibwa | birthing aid | root | infusion taken to clear up the birthing system after childbirth | M |
| <i>Anemone multifida</i> Poir. | Pacific anemone | Blackfeet | abortifacient | unknown | unspecified | K, M |

Table 13. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses as hunting aids. Information sources: (G) Gilmore 1977, (J) Johnston 1970, (M) Moerman 1998, and (S) Smith 1932.

| Plant names | | Cultural source | Plant information | | | Sources |
|--|-----------------------|-----------------|-------------------|-------------|---|---------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Cicuta maculata</i> L. | Spotted water-hemlock | Ojibwa | animal attractant | root | smoke of burning root used to bring buck deer close enough to shoot with an arrow | M, S |
| <i>Perideridia montana</i> (Blank.) Dorn | Gairdner's yampah | Blackfeet | athletic strength | root | chewed to give buffalo hunter endurance | M |
| | | | hunting aid | whole plant | rubbed on arrows as a waterproofing agent | M |

| Plant names | | Cultural source | Plant information | | | Sources |
|--------------------------------------|------------------|-----------------|-------------------|------------|--|---------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Fabaceae | | | | | | |
| <i>Amorpha canescens</i> Pursh | Lead plant | MT Indian | animal attractant | blooms | pound, moisten, mix, and rub on clothing | G |
| <i>Glycyrrhiza lepidota</i> Pursh | Wild licorice | Blackfeet | thirst aid | burs | kept in mouth of buffalo runners to prevent thirst | M |
| Lamiaceae | | | | | | |
| <i>Mentha arvensis</i> L. | Wild mint | Blackfeet | animal attractant | unknown | boiled with hunting traps to destroy human scent | J |
| Ranunculaceae | | | | | | |
| <i>Ranunculus pensylvanicus</i> L.f. | Bristly crowfoot | Ojibwa | animal attractant | seeds | burned to lure buck deer close enough to shoot with an arrow | M, S |

ent plant parts, yet the preparation of the plants was identical.

Ethnographic stimulants

Ethnographic stimulants consist of 4 stimulants and 2 strengtheners with the majority of species from the Apiaceae family (Table 14). The plant part most commonly used was roots, which were prepared in a variety of ways including chewing, infusions, a tonic, and a decoction.

Additional medicinal aids

Additional medicinal aids are remedies that did not fit into any other categories, including plants that were used for panacea, snakebites, diaphoretics, a blood remedy, and an orthopedic aid. Ten species of plants used as additional medicinal aids occur in 4 of the 7 plant families (Table 15). Infusions made from roots were the most common treatment for these ailments.

Table 14. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses as stimulants. Information sources: (D) Densmore 1927, (K) Kindscher 1992, and (M) Moerman 1998.

| Plant names | | Cultural source | Plant information | | | Sources |
|---|----------------------------|-----------------|-------------------|-----------------|--|---------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Lomatium triternatum</i> (Pursh) J.M.Coult. & Rose | Nineleaf biscuitroot | Blackfeet | athletic strength | root | chewed to prevent side aches while running | M |
| <i>Musineon divaricatum</i> (Pursh) Nutt. | Wild parsley | Blackfeet | stimulant | root | tonic to stimulate the appetite | K, M |
| <i>Osmorhiza chilensis</i> Hook. & Arn. | Chilean sweet-cicely | Cheyenne | stimulant | root or leaves | chewed roots or infusion of leaves to bring one around | M |
| <i>Peucedanum macrocarpum</i> Nutt. | Large-fruit desert-parsley | Blackfeet | strength | root | infusion | M |
| Fabaceae | | | | | | |
| <i>Astragalus crassicaarpus</i> Nutt. | Groundplum milkvetch | Chippewa | stimulant | root | decoction | D, M |
| Lamiaceae | | | | | | |
| <i>Mentha arvensis</i> L. | Wild mint | Cheyenne | stimulant | leaves and stem | ground infusion or boiled to stimulate vital organs | K, M |

Table 15. Plants implied from the archaeological record at Beaver Creek Rock Shelter, southwestern Montana, U.S.A. with ethnographic uses as additional medicinal aids. Information sources: (D) Densmore 1927, (G) Grinnell 1972, (H) Hart 1992, (K1) Kindscher 1987, (K2) Kindscher 1992, (M1) Moerman 1998, (M2) Moerman 2003, (S) Smith 1932, and (T) Taylor 1989.

| Plant names | | Cultural source | Plant information | | | Sources |
|---|--------------------------|-----------------|-------------------|-------------|--|------------------|
| Scientific | Common | | Uses | Parts used | Preparation | |
| Apiaceae | | | | | | |
| <i>Angelica dawsonii</i> S.Watson | Dawson's angelica | Blackfeet | panacea | root | infusion | M1 |
| <i>Cicuta douglasii</i> (DC.) J.M.Coult. & Rose | Western water-hemlock | MT Indian | snakebite | root | poultice of split root | M1 |
| <i>Peucedanum macrocarpum</i> Nutt. | Nineleaf biscuitroot | Blackfeet | panacea | root | chewed and sprayed by the mouth to heal where the root lands | M1 |
| <i>Perideridia montana</i> (Blank.) Dorn | Gairdner's yampah | Blackfeet | panacea | root | chewed | M1 |
| <i>Sanicula marilandica</i> L. | Maryland black snakeroot | Ojibwa | snakebite | root | pounded | M1, S |
| Brassicaceae | | | | | | |
| <i>Turritis glabra</i> L. | Tower-mustard | Cheyenne | panacea | unknown | infusion used to prevent sickness | G, M1 |
| Fabaceae | | | | | | |
| <i>Dalea purpurea</i> Vent. | Purple prairie clover | MT Indian | panacea | root | pulverized, boiled, and drunk to prevent sickness | K2, M1 |
| <i>Psoralea esculenta</i> Pursh | Pomme-de-prairie | Blackfeet | orthopedic aid | root | poultice of chewed root to heal fractures | H, K1, K2, M1, T |
| Lamiaceae | | | | | | |
| <i>Agastache foeniculum</i> (Pursh) Kuntze | Lavender hyssop | Cheyenne | diaphoretic | leaves | steamed to induce sweating in order to release toxins | K2, M1 |
| <i>Mentha arvensis</i> L. | Wild mint | Cree | panacea | unknown | infusion used to prevent sickness | D, M1, M2 |
| | | Blackfeet | panacea | leaves | beverage to treat a variety of illnesses | M1, M2 |
| | | Ojibwa | blood remedy | whole plant | infusion | M1, M2 |
| | | | diaphoretic | unknown | steamed to induce sweating in order to release toxins | M1, M2 |
| <i>Monarda fistulosa</i> L. | Beebalm | Salish | panacea | unknown | infusion to treat miscellaneous diseases | M1 |

Summary and Discussion

Archaeologists have traditionally viewed botanical remains as evidence of prehistoric subsistence, particularly when interpreting macrobotanical remains. This research demonstrates that archaeologists need to use caution in assuming plant remains in the archaeological record are predominately tied to subsistence. Moerman (1996), who summarized the number of Native American food and medicinal plant uses from a large computerized database with 44,775 Native American historic plant uses, demonstrated that medicinal uses were more than twice as numerous as food uses. Of the 44,775 historic uses he recorded 45% were medicinal, 19% food, and 29% both food and medicinal (Moerman 1996:9).

The importance of having medical supplies available is unmistakable. Although we cannot be certain which species of plants are represented in our pollen core, some of the families are heavily laden with species used historically for medicinal purposes. Moerman (1996) calculated the top ten plant families most commonly used for medicinal purposes. Three of the families discovered at the Beaver Creek Rock Shelter are included on Moerman's top ten medicinal list, including Apiaceae (ranked second), Ranunculaceae (ranked fifth), and Lamiaceae (ranked ninth).

Perhaps more noteworthy, as it is unexpected, is that three of the plant families found at the Beaver Creek Rock Shelter were ranked by Moerman among the least-used families for traditional medicinal use, including Brassicaceae (ranked second in the bottom ten), Fabaceae (ranked eighth in the bottom ten), and Cyperaceae (ranked ninth in the bottom ten) (Moerman 1996:5). Finding these three families on Moerman's medicinally least-used list was unexpected as our research showed that in the Northern Plains ethnographies Brassicaceae, Fabaceae, and Cyperaceae families were predominately used for medicinal purposes.

The discrepancy in the research may be due to sample size or geographical considerations. Moerman's research area included North America and our research area encompassed solely Montana and surrounding areas. Furthermore, Moerman's research included 291 tribes, whereas our study was limited to 8 tribes.

The appearance of the 7 plant families—Apiaceae, Brassicaceae, Fabaceae, Geraniaceae, Lamiaceae, Ranunculaceae, and Cyperaceae—in the occupation layers at the Beaver Creek Rock Shelter suggests the plants were utilized by the prehistoric inhabitants of the shelter. Our ethnographic research of Northern Plains traditional uses of plants in these families implies the rock shelter occupants often had medicinal remedies readily available. When an injury or illness strikes, the medicinal plants needed for treatment may not be in season, located in the immedi-

ate geographic area, or may require time for preparation, such as drying. Having a prepared supply of treatments could be a major factor in survival. The prehistoric people of the Beaver Creek Rock Shelter appear to have been well adapted to an unpredictable environment, as these same plants reappear in the archaeological record for thousands of years.

Acknowledgments

The Beaver Creek Rock Shelter research was funded by a Cost Share Agreement between the Helena National Forest and Carroll College. The research would not be possible without support from the Helena National Forest Archaeologists Mark Bodily, Arian Randall, and Kyle McGuire. We also thank anonymous reviewers for their constructive comments.

Literature Cited

- Baugh, T.G. & J.E. Ericson. 1994. *Prehistoric Exchange Systems in North America*. Plenum Press, New York, U.S.A.
- Blankinship, J.W. 1905. *Native Economic Plants of Montana*. Montana Agricultural College Experiment Station, Bozeman, Montana, U.S.A.
- Boyd, M. 1998. Interdependence and power: Complexity in hunter-gatherer/farmer exchanges. *Plains Anthropologist* 43(165):311–319. www.jstor.org/stable/25669553
- Carlson, R.L. 1994. Trade and exchange in Prehistoric British Columbia. Pp. 307–362 in *Prehistoric Exchange Systems in North America*. Edited by T.G. Baugh & J.E. Ericson. Plenum Press, New York, U.S.A.
- Clavelle, C.M. 1997. *Ethnobotany of Two Cree Communities in the Southern Boreal Forest of Saskatchewan*. Unpublished research paper, Department of Anthropology, University of Saskatchewan Saskatoon, Canada.
- Cooper, J. 2008. *Bison Hunting and Late Prehistoric Human Subsistence Economics in the Great Plains*. Ph.D. Dissertation, Department of Anthropology, Southern Methodist University, Dallas, Texas, U.S.A.
- Cummings, L.S. & C. Yost. 2011. Pollen analysis of sediment samples and protein residue analysis of a projectile point from the Beaver Creek Rock Shelter, Montana. Pp. 121–138 in *Carroll College 2011 Archeological Field School: Test Excavations at 24LC 1993/2186 Lewis and Clark County, Helena National Forest*. Edited by Lauri Travis. Department of Sociology and Anthropology, Carroll College, Helena, Montana, U.S.A. [Submitted to Helena National Forest, Helena, Montana].

- Densmore, F. 1927. Use of plants by the Chippewa Indians. Pp. 275–397 in *Forty-Fourth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institute, 1926–1927*. United States Government Printing Office, Washington, U.S.A.
- Duke, P. & M. Wilson. 1994. Cultures of the mountains and plains: From Selkirk Mountains to the Bitterroot Range. Pp. 56–70 in *Plains Indians, A.D. 500–1500: The archaeological past of historic groups*. Edited by K. Schlesier. University of Oklahoma Press, Norman, Oklahoma, U.S.A.
- Dusenberry, V. & L. Dusenberry Crow. 1998. *The Montana Cree: A study in religious persistence*. University of Oklahoma Press, Norman, Oklahoma, U.S.A.
- Ewers, J.C. 1983. *The Blackfeet: Raiders on the Northwestern Plains*. University of Oklahoma Press, Norman, Oklahoma, U.S.A.
- Faegri, K. & J. Iverson. 1989. *Textbook of Pollen Analysis*. Fourth edition. John Wiley and Sons, New York, New York, U.S.A.
- Frison, G. 1991. *Prehistoric Hunters of the High Plains*. Second edition. Academic Press, New York, U.S.A.
- Frison, G. 1998. The Northwestern and Northern Plains Archaic. Pp. 140–172 in *Archaeology of the Great Plains*. Edited by W.R. Wood. University Press of Kansas, Lawrence, Kansas, U.S.A.
- Galm, J. 1994. Prehistoric trade and exchange in the Interior Plateau of Northwestern North America. Pp. 275–306 in *Prehistoric Exchange Systems in North America*. Edited by T.G. Baugh & J.E. Ericson. Plenum Press, New York, U.S.A.
- Gilmore, M.R. 1977. *Uses of Plants by Indians of the Missouri River Region*. Reprint. University of Nebraska Press, Lincoln, Nebraska, U.S.A.
- Greiser, S. 1994. Late Prehistoric cultures on the Montana Plains. Pp. 34–55 in *Plains Indians, A.D. 500–1500: The archaeological past of historic groups*. Edited by K. Schlesier. University of Oklahoma Press, Norman, Oklahoma, U.S.A.
- Grinnell, G.B. 1905. Some Cheyenne plant medicines. *American Anthropologists, New Series* 7(1):37–43.
- Grinnell, G.B. 1972. *The Cheyenne Indians, Volume 1: History and society*. Bison Books, Lincoln, Nebraska, U.S.A.
- Hannus, L.A. 1994. Cultures of the heartland: Beyond the Black Hills. Pp. 176–198 in *Plains Indians, A.D. 500–1500: The archaeological past of historic groups*. Edited by K. Schlesier. University of Oklahoma Press, Norman, Oklahoma, U.S.A.
- Hart, J.A. 1981. The ethnobotany of the Northern Cheyenne Indians of Montana. *Journal of Ethnopharmacology* 4(1):1–55. DOI:10.1016/0378-8741(81)90019-2
- Hart, J. 1992. *Montana Native Plants and Early Peoples*. Montana Historical Society Press, Helena, Montana, U.S.A.
- Hoffman, W.J. 1891. The Mide'wiwin or "Grand Medicine Society" of the Ojibwa. Pp. 143–300 in *Seventh Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution, 1885–1886*. United States Government Printing Office, Washington, U.S.A.
- Holmes, E. 1884. Medicinal plants used by the Cree Indians, Hudson's Bay Territory. *American Journal of Pharmacy* 56(12):3–7.
- Johnston, A. 1970. Blackfoot Indian utilization of the flora of the northwestern great plains. *Economic Botany* 24(3):301–324. DOI:10.1007/BF02860666.
- Johnston, A. 1987. *Plants and the Blackfoot*. Lethbridge Historical Society Occasional Papers, Historical Society of Alberta Press, Calgary, Alberta, Canada.
- Kindscher, K. 1987. *Edible Wild Plants of the Prairie: An ethnobotanical guide*. University Press of Kansas, Lawrence, Kansas, U.S.A.
- Kindscher, K. 1992. *Medicinal Wild Plants of the Prairie: An ethnobotanical guide*. University Press of Kansas, Lawrence, Kansas, U.S.A.
- Lesica, P. 2012. *Manual of Montana Vascular Plants*. Botanical Research Institute of Texas Press, Fort Worth, Texas, U.S.A.
- Lowie, R.H. 1982. *Indians of the Plains*. Bison Books, Lincoln, Nebraska, U.S.A.
- Mincemoyer, S. 2012. *Checklist of Montana Vascular Plants*: Dated February 14, 2012. Montana Natural Heritage Program, Helena, Montana, U.S.A. http://mtnhp.org/docs/021412_MT_Plant_List.pdf.
- Moerman, D. 1996. An analysis of the food plants and drug plants of native North America. *Journal of Ethnopharmacology* 52(1):1–22. DOI:10.1016/0378-8741(96)01393-1.

- Moerman, D. 1998. *Native American Ethnobotany*. Timber Press, Portland, Oregon, U.S.A.
- Moerman, D. 2003+. *Native American Ethnobotany Database. A database of foods, drugs, dyes and fibers of native American peoples, derived from plants*. University of Michigan, Dearborn, Michigan, U.S.A. <http://herb.umdl.umich.edu/>
- Reaves, R. 2005. *Native Plants of Arizona 2005*. Electronic document. <http://jan.ucc.nau.edu/plants-c/bio414/>
- Reeves, B. 1970. *Cultural Change on the Northwestern Plains, 1000 B.C.—A.D. 1000*. Ph.D. Dissertation, University of Calgary, Calgary, Alberta, Canada.
- Scheinost, P.L. & M.E. Stannard. 2010. *Sticky Purple Geranium Plant Guide (Geranium viscosissimum)*. United States Department of Agriculture - Natural Resources Conservation Service, Plant Materials Center, Pullman, Washington, U.S.A.
- Schlesier, K. 1994. *Plains Indians, A.D. 500–1500: The archaeological past of historic groups*. University of Oklahoma Press, Norman, Oklahoma, U.S.A.
- Smith, H.H. 1932. Ethnobotany of the Ojibwe Indians. *Bulletin of the Public Museum of the City of Milwaukee* 4(3):327–525.
- Taylor, A.R. 1989. Two decades of ethnobotany in the Northwest Plains. *International Journal of American Linguistics* 55(3):359–381. www.jstor.org/stable/1265075
- Teit, J. 1928. The Salishan tribes of the Western Plateaus. Pp. 22–835 in *Forty-Fifth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution*. Edited by F. Boas. United States Government Printing Office, Washington, U.S.A.
- Travis, L. 1988. An archaeological survey in the plains - foothills ecotone, Northern Colorado. *Plains Anthropologist* 33(120):171–186. www.jstor.org/stable/25668754
- Travis, L., K. Rausch & K. Williams. 2011. Carroll College 2011 *Archaeological Field School: Test excavations at 24LC1993/2186 Lewis and Clark County, Helena National Forest*. Carroll College Department of Sociology and Anthropology, Helena, Montana. Submitted to Helena National Forest, Helena, Montana, U.S.A.
- Travis, L., K. Rausch & K. Williams. 2012. Late Holocene climate change at the Beaver Creek Rock Shelter, Southwestern Montana. *Plains Anthropologist* 57(223):275–289. [DOI:10.1179/pan.2012.021](https://doi.org/10.1179/pan.2012.021)
- Turner, N.C. & M.A.M. Bell. 1971. The ethnobotany of the Coast Salish Indians of Vancouver Island. *Economic Botany* 25(1):63–99. [DOI:10.1007/BF02894564](https://doi.org/10.1007/BF02894564)
- Vehik, S.C. & T.G. Baugh. 1994. Prehistoric plains trade. Pp. 241–274 in *Prehistoric Exchange Systems in North America*. Edited by T.G. Baugh & J.E. Ericson. Plenum Press, New York, U.S.A.
- Wood, W.R. 1974. Northern Plains village cultures: Internal stability and external relationships. *Journal of Anthropological Research* 30(1):1–16. www.jstor.org/stable/3629916