

Adjacent Regions. *American Anthropologist* 40(3):384-415.

Sampson, C. Garth

1985 *Nightfire Island: Later Holocene Lake-marsh Adaptation on the Western Edge of the Great Basin*. Eugene: University of Oregon Anthropological Papers No. 33.

Skinner, Craig E.

1983 *Obsidian Studies in Oregon: An Introduction to Obsidian and an Investigation of Selected Methods of Obsidian Characterization Utilizing Obsidian Collected at Prehistoric Quarry Sites in Oregon*. Master's thesis, University of Oregon, Eugene.

Spier, Leslie

1930 *Klamath Ethnography*. University of California Publications in American Archaeology and Ethnology 30.



Cross-Cultural Folk Classifications of Ethnobotanically Important Geophytes in Southern Oregon and Northern California

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A confusing variety of common names has been applied to "root foods" used by Native American peoples in the Far West. This analysis references many of these names to current scientific nomenclature. Such analysis provides a foundation for a better understanding of the role of these foods in the economies and cultures of indigenous peoples. This report concentrates on ethnographically recorded species in the Oregon-California border region, although the framework is more broadly applicable.

ELASTIC and inexact folk taxonomies exist for geophytes ("roots")¹ used as food resources in

the Far West. These cross-cultural, geographically variable, and idiosyncratic taxonomies have been used by Native Americans, Euroamerican settlers, anthropologists, and historians to classify various species of Native American foods. Portions of these taxonomies survive in field notes, ethnographies, and historical sources, as well as within the folk vocabularies of Native American and Euroamerican peoples. Those who incorporated these categories into oral and written descriptions during the early postcontact period have left anthropologists to puzzle out their intended taxonomies as best they can.

An analysis of these folk categories provides a better perspective with which to evaluate ethnobotanical aspects of the ethnohistoric record, enabling anthropologists to more accurately identify plants mentioned in ethnographic, historical, and folk literature. In turn, this has enabled anthropologists to better evaluate the role of geophytes in the economies of native peoples of the Far West. Historically, the role of these plants in indigenous economies has been largely unappreciated; for example, a lack of understanding of the complexity and finesse involved in identifying, harvesting, processing, and storing these resources contributed to a derogatory use of the term "digger." Investigation of geophyte species and their role in the presettlement economies of the Far West is important, for it has led to a re-evaluation of the significance of these resources, as well as a concomitant re-evaluation of the importance of women's contributions to subsistence in traditional Native American economies (Hunn 1981; Thoms 1989; Prouty 1995).

Edible geophytes, most of which are found in the Apiaceae and Liliaceae families, are an enigmatic group of plants, both for botanists and anthropologists.² Botanists, using different criteria for assigning species designations, have shifted plants from one taxon to another. The vernacular nomenclature is even more confusing. Distantly related plants are often given the same common name, and individual species frequently

have a plethora of common names. One particular problem is that Europeans and Euroamericans immigrating to the Far West encountered a vast array of unfamiliar plants, for which they had no appropriate referential names. Native American peoples, on the other hand, had—and in some cases still have—a particularly fine-grained nomenclatural system for the geophytes upon which they have depended for sustenance. For example, while the Sahaptin speakers of the Columbia Plateau differentiate 14 different kinds of *Lomatiums*, in the same locale botanists differentiate only 12 (Hunn and French 1981:87). In 1966, a Shasta Indian elder, Sargent Sambo, speaking with regard to food plants, said “You wouldn’t understand if I told you because you don’t know my people’s language” (Olson 1960: Appendix). I believe that Sargent Sambo was referring to a lack of equivalent nomenclature between Shasta and English.

This report concentrates on folk taxonomies as applied primarily to edible geophytes in northern California and southern Oregon (see Fig. 1, Tables 1 and 2). These two areas have physiographic and biogeographic continuity such that most ethnobotanically important species have ranges on both sides of the arbitrary state border. Examples will be offered from this region, although the framework is more broadly applicable.

CAMAS

The use of the word “camas” as a category predates the period of Euroamerican contact. The word is perhaps of Nootka (Nuu-chah-nulth) origin and is a Chinook jargon term with reference both to “sweet” and to the plant category “camas” (Gatschet 1890:152; Thomas 1935:58-59). The word “camas,” as used in the lexicons of many indigenous Pacific Northwest peoples, most commonly refers to the plant and edible bulb of *Camassia quamash*, sometimes called blue camas. However, as a folk classification, the term may be highly elastic, encompassing

even distantly related geophytes. In the Pacific Northwest, such genetically unrelated plants as *Lomatiums* might be camas (Turner 1978:101). Thus, in its most broadly applied sense, camas may refer to many plants that are dug for food. In some cases, the term may be more restrictive, referring to plants which look like camas. Generally, these plants are in the lily family.

In his notes on the Takelma Indian language of southern Oregon, linguist J. P. Harrington seems to have used camas in the inclusive sense of “plants within the lily family” when he indicated four different “kinds” of camas, including camas itself (*Camassia quamash*) (Gray 1987: 95). The other species noted as camas may include scarlet fritillary (*Fritillaria recurva*), pussy ears (*Calochortus tolmeii*), and Henderson’s fawn lily (*Erythronium hendersonii*). In his discussion of “roots” gathered by the Atsugewi, Garth (1953:138) also used *camassia* (the genus name for camas) in an inclusive manner with reference to a member of the lily family, *Dichelostemma multiflorum* (formerly *Brodiaea multiflorum*).

Two other categories of camas used in southern Oregon and northern California are “white camas” and “death camas,” both of which usually refer to poisonous plants of the *Zigadenus* genus in the lily family. Members of this genus often grow in association with true camas (*Camassia quamash*). Although the flowers, seeds, and seedheads of *Zigadenus* differ appreciably from those of camas, the bulbs of the two genera are remarkably alike. Ray (1963:199) reported that the Modoc ate “white camas” (*Zigadenus venenosus*) after lengthy processing to remove the toxins. However, most Native American peoples carefully avoid the plant, since poisonings have been known to occur (Turner and Szczawinski 1991:106-107). There is a possibility that “white camas” refers to a member of the *Brodiaea* complex, *Triteleia hyacinthina*, a liliaceous plant which also has white flowers. An additional possibility is that “white camas”

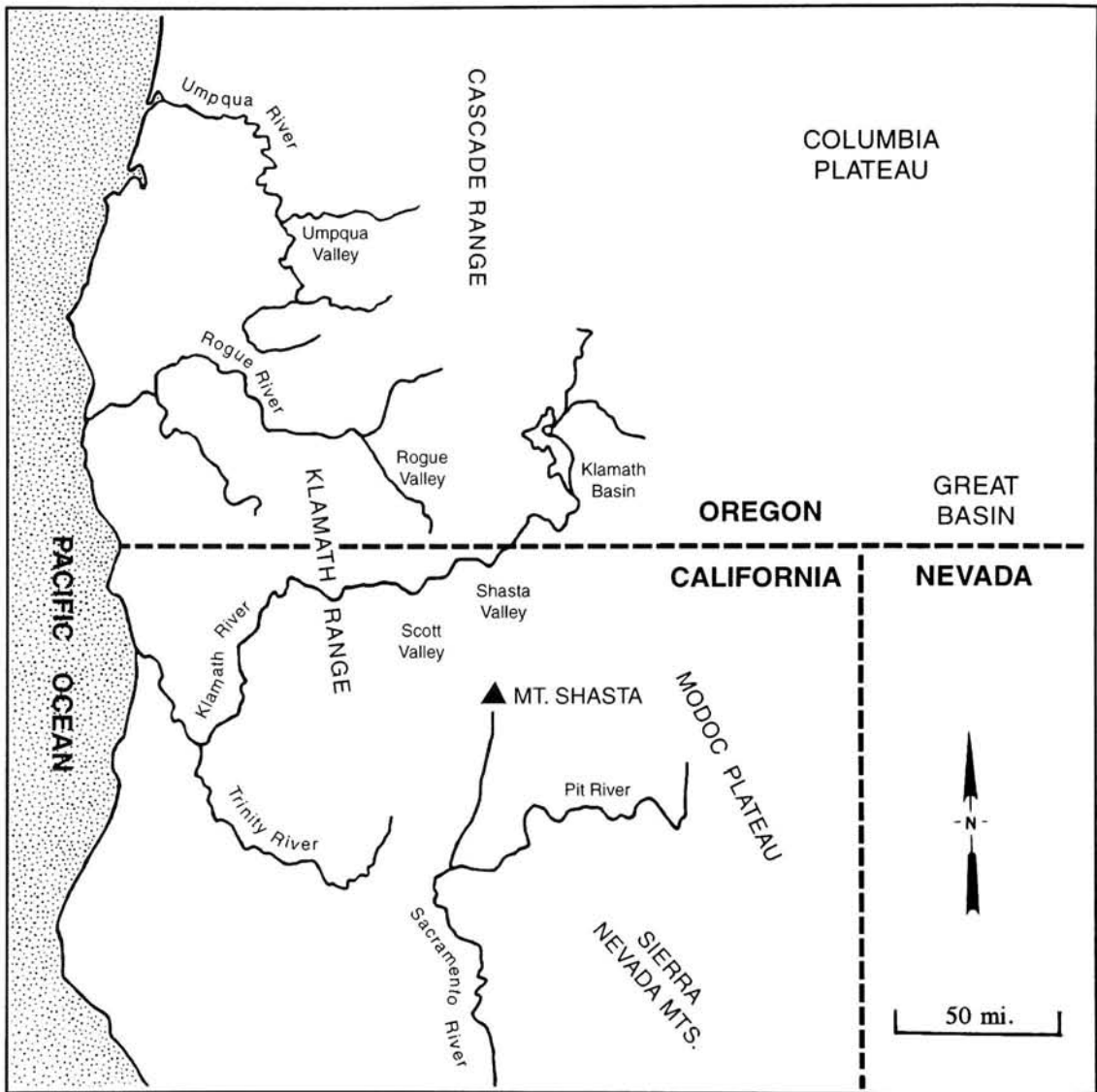


Fig. 1. Map of northern California and southern Oregon, showing areas discussed in text.

is a reference to *Lomatium canbyi*, a species found on the Modoc Plateau, but which is known as "white camas" on the Columbia Plateau, where Ray did a considerable amount of ethnographic work (Ray 1932; Turner et al. 1980:64). On the other hand, since Ray's (1963) account is so detailed, it is difficult to entirely dismiss it.³

It should also be noted that a whitish true camas (*Camassia quamash*) grows in the Ump-

qua Valley of southern Oregon. Camas has also been known as "wild hyacinth" because of its resemblance to the Mediterranean species. Another name from the historical exploration literature referring to camas is scilla (Sperlin 1930: 222; Eastwood 1945:340).

IPOS AND YAMPA

Ipos is an anglicization of a Shasta Indian word (Gatschet 1890:151) rendered *ip'-haws* by

Table 1
BOTANICAL EQUIVALENTS FOR FOLK TERMS APPLIED TO ETHNOBOTANICALLY
IMPORTANT GEOPHYTES IN SOUTHERN OREGON AND NORTHERN CALIFORNIA

Botanical Nomenclature	Folk Term ^a
<i>Allium</i> spp.	*wild onion, wild garlic
<i>A. madidum</i>	swamp onion
<i>A. validum</i>	swamp onion
<i>Brodiaea</i> spp.	*Indian potatoes, *grass nuts, cacomite, wild hyacinth
<i>Calochortus</i> spp.	Indian potatoes, * <i>Sego</i> lily, *Mariposa lily, wild tulip
<i>Camassia quamash</i>	*camas, blue camas, sweet camas, white camas (in the Umpqua Valley), scilla, wild hyacinth, Indian potatoes
<i>Chlorogalum pomeridianum</i>	*soaproot, soap plant, amole
<i>Claytonia lanceolata</i>	*spring beauty, Indian potatoes
<i>Dichelostemma</i> spp.	*Indian potatoes, *grass-nuts, cacomite, wild hyacinth, snake-heads
<i>Fritillaria recurva</i>	red bells, scarlet fritillary
<i>Lewisia rediviva</i>	bitterroot
<i>Lilium pardalinum</i>	tiger lily
<i>Lomatium californicum</i>	*'ik'-nish, wild parsnip, wild celery, incense root, hog fennel, angelica
<i>L. canbyi</i>	*biscuit-root, white camas, turnip, wild turnip, couese(?)
<i>L. cous</i>	*biscuit-root, *couese, turnip, wild turnip
<i>L. dissectum</i>	wild parsley, wild celery, Indian balsam, 'ik'-nish(?)
<i>L. macrocarpum</i>	wild parsley, biscuit-root, sheep parsnip
<i>L. piperi</i>	biscuit-root, turnip, wild turnip
<i>Pedimelum esculentum</i>	prairie potato, Indian breadroot
<i>Perideridia</i> spp.	*ipos, *yampa, *wild carrot, Indian carrot, wild caraway, squaw root, Queen Anne's lace, Indian potato
<i>Sagittaria</i> spp.	*Indian potatoes, *arrowhead, *wapato, tule potato, swamp potato
<i>Sium</i> spp.	wild parsnip, water parsnip
<i>Triteleia hyacinthina</i>	*Indian potatoes, white camas(?)
<i>Valeriana edulus</i>	tobacco-root
<i>Zigadenus</i> spp.	*death camas, zygadene lily, white camas, bitter onion

^a The most common usages are indicated by an asterisk.

Merriam (as cited in Bright and Olmsted 1959: 29). This term, with many variant spellings, became a loanword used by many tribes, as well as by some Euroamericans in the Far West. The term generally refers to edible plants within the genus *Perideridia*. Yampa, also with many vari-

ations in spelling, pertains to plants within the genus *Perideridia* as well. Yampa is anglicized from the Paiute term *ya-pah*, meaning "water is here" (Trejo 1985:10).

In his ethnography of the Shasta Indians, Dixon (1907) recorded ipos as belonging to the

Table 2
FOLK TERMS APPLIED TO ETHNOBOTANICALLY IMPORTANT GEOPHYTES
IN SOUTHERN OREGON AND NORTHERN CALIFORNIA

Folk Terms	Botanical Nomenclature
amole	<i>Chlorogalum pomeridianum</i>
angelica	<i>Angelica</i> spp.; <i>Lomatium californicum</i>
biscuit-root	Usually tuberous <i>Lomatium</i> spp. or <i>L.</i> spp., with large, edible roots; Examples: <i>L. canbyi</i> , <i>L. macrocarpum</i>
bitterroot	<i>Lewisia rediviva</i> ; <i>Lomatium</i> spp. (especially in the Columbia Plateau)
breadroot	<i>Pediomelum esculentum</i> (formerly <i>Psoralea esculenta</i>)
cacomite	<i>Brodiaea</i> spp.
camas	Inclusive: bulbous or tuberous plants which are dug for food. More restricted: Liliaceous geophytes which are dug for food. Restricted: <i>Camassia quamash</i> <i>Camassia quamash</i> <i>Zigadenus</i> spp. <i>Camassia quamash</i> <i>Zigadenus venenosus</i> and other <i>Zigadenus</i> spp.; <i>Lomatium canbyi</i> (especially in the Columbia Plateau); <i>Triteleia hyacinthina</i> (?); a white-flowered form of <i>Camassia quamash</i> (Umpqua Valley)
camas, blue	<i>Perideridia</i> spp.
camas, death	Inclusive: geophytes which are dug for food. Specific: <i>Perideridia</i> spp.
camas, sweet	Various species of plants having greens used for food; <i>Lomatium dissectum</i> ; <i>L. californicum</i>
camas, white	<i>Lomatium couse</i> ; tuberous <i>Lomatium</i> spp. <i>Allium</i> spp. <i>Brodiaea</i> spp.; <i>Dichelostemma</i> spp. <i>Lomatium californicum</i> <i>Camassia quamash</i> ; <i>Brodiaea</i> and <i>Dichelostemma</i> spp. <i>Lomatium californicum</i> ; <i>L. dissectum</i> (?) <i>L. californicum</i> <i>L. dissectum</i> <i>Perideridia</i> spp. <i>Zigadenus</i> spp. <i>Allium validum</i> ; <i>A. madidum</i> <i>Allium</i> spp. <i>Lomatium</i> spp. <i>Lomatium</i> spp., especially those with edible greens; <i>L. dissectum</i> <i>Heracleum lanatum</i> <i>Lomatium</i> spp., particularly <i>L. macrocarpum</i> and <i>L. californicum</i> (in drier areas); <i>Heracleum</i> , <i>Sium</i> spp. (in wet areas) probably <i>Lomatium macrocarpum</i>
caraway, wild	Inclusive: plants having bulbous or tuberous parts which are dug for food. Specific: <i>Brodiaea</i> spp., <i>Dichelostemma</i> spp., <i>Triteleia</i> spp. (especially in California); <i>Pediomelum esculentum</i> (in southeastern Oregon); <i>Claytonia lanceolata</i> (in southeastern Oregon)
carrots, Indian or wild	<i>Pediomelum esculentum</i> (in southeastern Oregon)
celery, Indian or wild	<i>Sagittaria</i> spp.
couse (many variant spellings)	Usually refers to <i>Daucus carota</i> ; occasionally refers to <i>Perideridia</i> spp.
garlic or wild garlic	<i>Fritillaria recurva</i>
grass-nut	<i>Camassia quamash</i>
hog fennel	<i>Calochortus</i> spp., usually <i>C. bruneauris</i> (formerly <i>C. nuttallii</i>)
hyacinth, wild	<i>Chlorogalum pomeridianum</i>
'ik' -nish	<i>C. pomeridianum</i>
incense root	<i>Dichelostemma</i> spp.
Indian balsam	Usually <i>Perideridia</i> spp.
ipos	<i>Lomatium</i> spp.
onion, poison	<i>Lomatium</i> spp., especially those with edible greens; <i>L. dissectum</i>
onion, swamp	<i>Heracleum lanatum</i>
onion, wild	<i>Lomatium</i> spp., particularly <i>L. macrocarpum</i> and <i>L. californicum</i> (in drier areas); <i>Heracleum</i> , <i>Sium</i> spp. (in wet areas)
parsley, desert	probably <i>Lomatium macrocarpum</i>
parsley, wild	Inclusive: plants having bulbous or tuberous parts which are dug for food. Specific: <i>Brodiaea</i> spp., <i>Dichelostemma</i> spp., <i>Triteleia</i> spp. (especially in California); <i>Pediomelum esculentum</i> (in southeastern Oregon); <i>Claytonia lanceolata</i> (in southeastern Oregon)
parsnip, cow	<i>Pediomelum esculentum</i> (in southeastern Oregon)
parsnip, Indian or wild	<i>Sagittaria</i> spp.
parsnip, sheep	Usually refers to <i>Daucus carota</i> ; occasionally refers to <i>Perideridia</i> spp.
potato, Indian or wild	<i>Fritillaria recurva</i>
potato, prairie	<i>Camassia quamash</i>
potato, swamp or tule	<i>Calochortus</i> spp., usually <i>C. bruneauris</i> (formerly <i>C. nuttallii</i>)
Queen Anne's lace	<i>Chlorogalum pomeridianum</i>
red bells	<i>C. pomeridianum</i>
scilla	<i>Dichelostemma</i> spp.
Sego lily	Usually <i>Perideridia</i> spp.
soap plant	<i>Lomatium</i> spp.
soaproot	<i>Valeriana edulis</i>
snake-heads	<i>Calochortus</i> spp.
squaw-root	<i>Lomatium</i> spp., particularly those bearing tubers
sweet potato, Indian	<i>Sagittaria</i> spp.
tobacco root	<i>Perideridia</i> spp.
tulip, wild	
turnip, Indian or wild	
wapato	
yampa	

genus *Calochortus*. He was followed in this by nearly every anthropologist who worked with, or wrote about, the Shasta, including Curtis (1924:111), Voegelin (1942:57), Holt (1946:308), and Bright and Olmsted (1959:29). However, regional ethnobotanical works indicate that ipos refers to plants within the genus *Perideridia* (Coville 1897:101; Ray 1963:498). In addition, while *Calochortus* species are uncommon and disjunct within the California Shasta territory, *Perideridia* spp. are widely distributed, and in some areas, quite abundant. Additional names applied to the genus *Perideridia* include "wild carrot," "wild caraway," "squaw-root," "wild potatoes," and "Queen Anne's lace" (Mead 1972:262-263; Davis and Hendryx 1991:132).

INDIAN POTATOES

Camas, ipos, and yampa are Native American folk categories which were incorporated into the vocabularies of some Euroamericans during and after the contact period. The newly arrived settlers relied as well upon more familiar English terms for the unfamiliar foods consumed by indigenous peoples. The most common of these categories is "potato." The potato itself is of South American origin, but probably spread to the Northwest Coast of North America via trading ships. It preceded the Euroamerican settlers in southern Oregon; Native Americans were busy growing potatoes in the Umpqua Valley at least as early as the 1830s (Barry 1929:49; Suttles 1987:149). Because the potato was familiar both to indigenous peoples and to Euroamerican settlers, the English term "Indian potatoes" came to be applied to many Native American geophyte resources. The term "Indian potatoes" is highly elastic and may indicate virtually any geophyte which is dug for food, or more specifically, it may refer to a particular species or group of species (Anderson 1992:19).

In the Pacific Northwest, in the Klamath Basin of southern Oregon, and in other marshy areas, the terms "Indian potato," "swamp pota-

to," or "tule potato" are used in reference to species of *Sagittaria*, also known by the Chinook jargon term *wapato* (Gatschet 1890:153; Strike 1994:137). In much of California, "Indian potatoes" often refer to the corms of species within the *Brodiaea* complex; *Brodiaea* spp., *Dichelostemma* spp. and *Triteleia* spp. In California's Shasta and Scott valleys, "snake-heads" designate plants now included within the genus *Dichelostemma* (M. Carpelan, personal communication 1995). Three other terms which are sometimes used for the *Brodiaeas* are "cacomite," "wild hyacinth," and "grass-nut" (Anderson 1992:19; Strike 1994:29). J. P. Harrington (1932:73) used the Aztec/Spanish term "cacomite" for *Brodiaea* within Karuk territory along the lower Klamath River of northern California. "Wild hyacinth" refers to the resemblance that the *Brodiaeas* bear to a distantly related Mediterranean species. "Grass-nut" is descriptive, referring to the narrow leaves of the *Brodiaeas*, as well as to the edible corms. "Nut-grass," on the other hand, refers to an unrelated species of sedge.

"Indian potatoes" may also refer to plants within the genus *Calochortus*, as well as to "spring beauty" (*Claytonia lanceolata*) (DuBois 1935:20; L. Housley, personal communication 1996). *Pediomelum esculentum* (formerly *Psoralea esculenta*), which grows in Harney County, southeastern Oregon, has been known as "prairie potato" and "Indian breadroot" (Harrington 1967:203; Hickman 1993:640; L. Housley, personal communication 1996).

INDIAN CARROTS

Euroamerican settlers used additional English vernacular categories from their language in reference to unfamiliar Native American foods. These categories include "Indian carrots," "wild parsnips," and "wild turnips." Of these, "Indian carrots" is the most inclusive term. It parallels "Indian potatoes" in that it may have multiple references or it may refer to more spe-

cific plants. In the southern Oregon and northern California region, the term "Indian carrots" often refers to the genus *Perideridia*, since both carrots (*Daucus carota*) and most *Perideridia* spp. are sweet and may be eaten raw. Carrots and *Perideridia* spp. are within the same family, Apiaceae, and have similar flower and foliage morphologies. In addition, the roots of some species of *Perideridia* are shaped somewhat like carrots.

WILD ONIONS

"Wild onions" or "Indian onions," like "Indian potatoes" and "Indian carrots," may be an inclusive reference to bulbous geophytes which are dug for food, although "wild onions" is usually a more specific reference to plants within the *Allium* (onion) genus. Descriptive terms may be used to further differentiate the onions. For example, "swamp onion" refers both to the widespread *A. validum* (Fowler 1986:69), and to *A. madidum*, an onion species known to the Oregon Burns Paiute (Couture et al. 1986:152). "Wild garlic," applied to plants within the *Allium* genus, usually parallels "wild onion," although it may have specific applications as well.

THE LOMATIUMS: WILD PARSNIPS, BISCUIT-ROOTS, AND WILD TURNIPS

The genus *Lomatium* was an ethnobotanically important group of plants for which Euroamerican settlers had little or no cultural reference. This genus, largely concentrated in western North America, is the largest within the Apiaceae family. The many species of *Lomatium* have served as greens, medicinal and ceremonial plants, and dietary staples for many indigenous western North American cultures. Although they seem to have been most important as food resources on the Columbia River Plateau (Hunn and French 1981), *Lomatiums* have been used for food, as well as for other purposes, in southern Oregon and northern California.

The folk categories of "wild parsnip," "biscuit-root" and "wild turnip" have sometimes been applied to certain species of *Lomatiums*. In drier locales, "wild parsnip" may refer to the large-rooted but nontuberous species of *Lomatium*, such as *L. macrocarpum* and *L. californicum*, both of which are common in southern Oregon and northern California. In wet locales, the term "wild parsnip" usually refers to the cow parsnip (*Heracleum lanatum*), or sometimes to water parsnip (*Sium* spp.). Schenck and Gifford (1952), in their detailed treatment of Karuk ethnobotany, attached the name for an important medicinal plant, 'ik'-nish, to the genus *Osmorhiza*. In their carefully researched and illustrated update of Karuk ethnobotany, Davis and Hendryx (1991) pointed out that 'ik'-nish should more appropriately be used as a reference to *Lomatium californicum*, a much more robust and aromatic plant. Merriam (1979) maintained that the Shasta plant name 'ik'-nish referred to *Leptotaenia dissecta* (now *Lomatium dissectum*); however, the Shasta currently use the term 'ik'-nish when referring to *Lomatium californicum* (M. Carpelan and B. Hall, personal communication 1995-1996). Other terms for *L. californicum* include "incense root," "hog fennel," and "angelica" (Mead 1972:120). "Angelica" may also be a reference to the aromatic, medicinal, and ceremonial roots of plants within the genus *Angelica*.

"Biscuit-root" generally refers to tuberous species of the genus *Lomatium*, or nontuberous species with large, edible taproots (Couture 1978:43-47). Included in this group are such species as *L. macrocarpum*, *L. piperi*, *L. canbyi*, and *L. cous*. The latter species is sometimes referred to as *couse*, with a number of alternate spellings, and this term is sometimes applied to the other tuberous *Lomatiums* as well.

Because of a resemblance in shape, "turnip" or "wild turnip" are probably also references to the tuberous *Lomatiums* (Kniffen 1928:302; de Angulo 1950:340, 343, 360). "Desert parsley"

or "wild parsley" may refer to nearly any of the *Lomatium* species, although "wild parsley" often indicates those species having greens that are used for food. "Wild parsley" has also been used as a reference to *L. dissectum*, which native peoples have sometimes used as a fish poison (Garth 1953:137; Meilleur et al. 1990).

The *Lomatiums* have engendered a plethora of common names, many of which refer to particular species or closely related groups of species. The following folk names have been used in the Pacific Northwest: white camas, camas, bitterroot, wild turnip, Indian sweet potato, Indian consumption plant, and Indian celery (Turner 1978:101-108). In California, the folk terms bladder parsnip, cough root, incense root, pestle parsnip, and sheep parsnip have been used for plants within the genus *Lomatium* (Strike 1994:84).

FOLK CLASSIFICATIONS FOR OTHER GEOPHYTES

Folk classifications for a variety of other geophytes have also been recorded. "Tiger lily" is commonly used in reference to *Lilium pardalinum* or one of its subspecies. In the drier eastern locales of southern Oregon and northern California, "Mariposa lily" is usually a reference to large-flowered *Calochortus* species, such as *C. macrocarpus*. "Sego lily" is sometimes used in reference to *C. bruneanus* (formerly *C. nuttallii*). Due to its resemblance in flower form, "wild tulip" is a term also applied to plants within the genus *Calochortus*.

"Bitterroot" (*Lewisia rediviva*) is found most abundantly on the Columbia Plateau, although it is found in southeastern Oregon and northeastern California as well. Any reference to "bitterroot" will generally be to this species. Sometimes, however, "bitterroot" may refer to species of *Lomatium* (Turner 1978:102), used in opposition to "sweet roots" such as camas or ipos.

Within the northern California-southern Oregon region, "soaproot" or "soap plant" re-

fers to *Chlorogalum pomeridianum*. In California, sometimes the Spanish word "amole," originally a reference to the soap-producing *Agave* and *Yucca* species, generalizes to the genus *Chlorogalum* (Vines 1960:80, 84; Strike 1994:40, 167-168). The roots of *Valeriana edulis*, an ethnobotanically important geophyte in the Klamath Basin, may be known as "tobacco root" (Coville 1897:104-105; Ray 1963:218). "Red bells" is a local name applied by contemporary Shasta to the regionally endemic *Fritillaria recurva* (Holt 1946:308; M. Carpelan, personal communication 1996).

CONCLUSION

A multiplicity of folk names exists for most species of economically useful geophytes. These folk taxonomies, though elastic, inexact, and geographically variable, often have a regional internal logic and consistency. In the absence of specific referential Latin nomenclature, analyses of biogeography, folk taxonomy, and regional comparative use categories help identify which species were used in which places by indigenous peoples. Such analyses provide a foundation for a better understanding of the role of geophytes in the economies and cultures of Native American peoples of the Far West.

NOTES

1. Radford et al. (1974:316) defined a geophyte as "a plant life form, a perennial that regenerates each year from underground and protected bulbs, tubers, rhizomes or corms."
2. Botanical nomenclature is according to Hickman (1993), except for *Allium madidum*, which is according to Hitchcock and Cronquist (1973).
3. According to Ray (1963:199), "Another plant extensively utilized by the Modoc is of especial importance because it is poisonous in the raw state. This is the so-called white camas, also known as death camas or deadly zygadene. A leaching process known by the Modoc rendered the bulbs edible. They were ready for harvesting soon after the camas season, in late July, thus prolonging the root-digging season, a significant economic advantage. The bulbs were gathered from moist, grassy places in the montane coniferous forests, carried to the village, and

cleaned of their tunicate coverings. They were then dried and placed in tule sacks. Leaching was accomplished by immersing the sacks in a steadily flowing stream for three days, after which they were again dried and placed in storage."

ACKNOWLEDGEMENTS

I thank Mary Carpelan and Betty Hall of the Shasta Nation for sharing information about Shasta plant nomenclature, and Lucile Housley, Lakeview District BLM ethnobotanist, for information on folk taxonomies in southeastern Oregon. Thanks to Nan Hannon for perceptive comments and editorial assistance, as well as to three anonymous *Journal* reviewers for their helpful suggestions.

REFERENCES

- Anderson, Kat
1992 At Home in the Wilderness. *News from Native California* 6(2):19-21.
- Barry, J. Nelson
1929 Use of Soil Products by Indians. *Oregon Historical Quarterly* 30(2):43-52.
- Bright, William, and David L. Olmsted
1959 A Shasta Vocabulary. *Kroeber Anthropological Society Papers* 20:1-55.
- Couture, Marilyn D.
1978 Recent and Contemporary Foraging Practices of the Harney Valley Paiute. Master's thesis, Portland State University.
- Couture, Marilyn D., Mary F. Ricks, and Lucile Housley
1986 Foraging Behavior of a Contemporary Northern Great Basin Population. *Journal of California and Great Basin Anthropology* 8(2):150-160.
- Coville, Frederick V.
1897 Notes on the Plants Used By The Klamath Indians of Oregon. *Contributions from the U. S. National Herbarium* 5(2). Washington: Government Printing Office.
- Curtis, Edward S.
1924 The North American Indian: Being a Series of Volumes Picturing and Describing the Indians of the United States, the Dominion of Canada, and Alaska. Frederick W. Hodge, ed., Vol. 13. Norwood, MA: Plimpton Press.
- Davis, Barbara J., and Michael Hendryx
1991 Plants and People: The Ethnobotany of the Karuk Tribe. Yreka, OR: Siskiyou County Museum.
- de Angulo, Jaime
1950 Indians in Overalls. *Hudson Review* 3(3): 323-377.
- Dixon, Roland B.
1907 The Shasta. *Bulletin of the American Museum of Natural History* 17(5):381-498.
- Du Bois, Cora
1935 Wintu Ethnography. University of California Publications in American Archaeology and Ethnology 36(1).
- Eastwood, Alice
1945 An Account and List of the Plants in the Brackenridge Journal. *California Historical Society Quarterly* 24(4):337-342.
- Fowler, Catherine S.
1986 Subsistence. In: *Handbook of North American Indians*, Vol. 11, Great Basin, Warren L. d'Azevedo, ed., pp. 64-97. Washington: Smithsonian Institution.
- Garth, Thomas R.
1953 Atsugewi Ethnography. *University of California Anthropological Records* 14(2).
- Gatschet, Albert S.
1890 The Klamath Indians of Southwestern Oregon. Washington: Government Printing Office.
- Gray, Dennis
1987 The Takelma and Their Athapascan Neighbors. *University of Oregon Anthropological Papers* No. 37.
- Harrington, H. D.
1967 Edible Plants of the Rocky Mountains. Albuquerque: University of New Mexico Press.
- Harrington, John P.
1932 Tobacco Among the Karuk Indians of California. *Bureau of American Ethnology Bulletin* 94.
- Hickman, James C. (ed.)
1993 The Jepson Manual: Higher Plants of California. University of California Press.
- Hitchcock, C. Leo, and Arthur Cronquist
1973 Flora of the Pacific Northwest. Seattle: University of Washington Press.
- Holt, Catherine
1946 Shasta Ethnography. *University of California Anthropological Records* 3(4).
- Hunn, Eugene S.
1981 On the Relative Contribution of Men and Women to Subsistence Among Hunter-Gatherers of the Columbia Plateau: A

- Comparison with Ethnographic Atlas Summaries. *Journal of Ethnobiology* 1(1): 124-134.
- Hunn, Eugene S., and David H. French
1981 *Lomatium*: A Key Resource for Columbia Plateau Native Subsistence. *Northwest Science* 55(2):87-94.
- Kniffen, Fred B.
1928 *Achomawi Geography*. University of California Publications in American Archaeology and Ethnology 23(5).
- Mead, George R.
1972 *The Ethnobotany of the California Indians: A Compendium of the Plants, Their Users, and Their Uses*. Museum of Anthropology, Occasional Publications in Anthropology, Ethnology, Series 30. Greeley, CO: University of Northern Colorado.
- Meilleur, Brian A., Eugene S. Hunn, and Rachael Cox
1990 *Lomatium dissectum* (Apiaceae): Multi-Purpose Plant of the Pacific Northwest. *Journal of Ethnobiology* 10(1): 1-20.
- Merriam, C. Hart
1979 *Indian Names for Plants and Animals Among Californian and Other Western North American Tribes*. (Assembled and annotated by Robert F. Heizer.) Socorro, NM: Ballena Press.
- Olson, George
1960 *The Shastas*. Report on file at the Southern Oregon Historical Society, Medford, Oregon.
- Prouty, Guy Lee
1995 *Roots and Tubers: Prehistoric Plant Use, Settlement and Subsistence Intensification and Storage in the Fort Rock Basin, Northern Great Basin, Oregon*. Ph.D. dissertation, University of Oregon.
- Radford, Albert E., William C. Dickinson, Jimmy R. Massey, and C. Ritchie Bell
1974 *Vascular Plant Systematics*. New York: Harper and Row.
- Ray, Verne F.
1932 *The Sanpoil and Nespelem: Salish Peoples of Northeastern Washington*. University of Washington Publications in Anthropology No. 5.
1963 *Primitive Pragmatists: The Modoc Indians of Northern California*. Seattle: University of Washington Press.
- Schenck, Sara M., and E. W. Gifford
1952 *Karok Ethnobotany*. University of California Anthropological Records 13(6).
- Sperlin, O. B. (ed.)
1930 *Our First Official Horticulturist: The Brackenridge Journal*. *Washington Historical Quarterly* 21(3):218-229.
- Strike, Sandra S.
1994 *Ethnobotany of the California Indians, Vol. 2: Aboriginal Uses of California's Indigenous Plants*. Champaign, IL: Koeltz Scientific Books USA/Germany.
- Suttles, Wayne
1987 *Coast Salish Essays*. Seattle: University of Washington Press.
- Thomas, Edward H.
1935 *Chinook: A History and Dictionary of the Northwest Coast Trade Jargon*. Portland: Binford and Mort.
- Thoms, Alston V.
1989 *The Northern Roots of Hunter-Gatherer Intensification: Camas and the Pacific Northwest*. Ph.D. dissertation, Washington State University.
- Trejo, Judy
1985 *Medicinal Plants of the Paiute*. *Northwest Folklore* 4(1):3-12.
- Turner, Nancy J.
1978 *Food Plants of British Columbia Indians, Part 2: Interior Peoples*. Victoria: British Columbia Provincial Museum Handbook No. 36.
- Turner, Nancy J., and Adam F. Szczawinski
1991 *Common Poisonous Plants and Mushrooms of North America*. Portland: Timber Press.
- Turner, Nancy J., Randy Bouchard, and Dorothy I. D. Kennedy
1980 *Ethnobotany of the Okanagan-Colville Indians of British Columbia and Washington*. Occasional Papers of the British Columbia Provincial Museum No. 21. Victoria: British Columbia Provincial Museum.
- Vines, Robert A.
1960 *Trees, Shrubs and Woody Vines of the Southwest*. Austin: University of Texas Press.
- Voegelin, Erminie W.
1942 *Culture Element Distributions: XX, Northeast California*. University of California Anthropological Records 7(2).