

Ethnobotany of Chumash Indians, California, Based on Collections by John P. Harrington¹

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At least 150 plant species were used for food, medicine, material culture, and religious practices by the Chumash Indians of southern California. A great deal of traditional Chumash plant knowledge survived into the present century, despite massive deculturation.

The most significant source of information on Chumash ethnobotany is the extensive, unpublished field notes of John P. Harrington, based on interviews conducted from 1912 into the 1950s. Several hundred voucher specimens collected by some of Harrington's consultants have also been preserved, along with the original notes, at the Smithsonian Institution.

Data are presented here on knowledge and uses of plants in this important California Indian culture, as reconstructed from the Harrington material. Changes in plant knowledge resulting from Euro-American contact are also discussed.

Los Usos de Plantas Entre los Indios Chumash de California, Basado en la Colección de John P. Harrington. Los indios Chumash que vivían en el sur de California usaban mas que 150 especies de plantas para alimentos, medicina, artefactos, y costumbres religiosas. A pesar de que esa cultura indígena ha sido casi destruída, el saber tradicional de las plantas ha perseverado hasta este siglo.

La fuente mayor sobre el conocimiento etnobotánico de los Chumash tiene que ser las entrevistas realizadas por el antropólogo y lingüista John P. Harrington con esos indios entre 1912 y los 1950s. Las materias Chumash juntado por Harrington, que actualmente se guardan en el Instituto Smithsonian, incluyen mas que cien mil páginas de notas y casi quinientos espécimenes de plantas.

Aquí están presentado datos sobre el saber y usar de plantas entre los Chumash, un grupo indígena importante en California, como se pueden reconstruir usando las materias de Harrington. Tambien discuto lo que ha cambiado en el conocimiento etnobotánico a causa del contacto histórico con culturas extranjeras.

The Chumash Indians were a hunting, gathering, and seafaring people who occupied the mainland and offshore islands in the vicinity of Santa Barbara, California (Fig. 1). Their ancestors originally colonized the region at least 8000 yr ago and, through time, learned to make efficient use of the myriad marine and terrestrial resources available to them.

Plant communities in Chumash territory are a diverse mosaic (Smith 1976). Those providing significant botanical resources include chaparral, oak woodland, valley grassland, riparian and marsh associations, and pinyon-juniper woodland. Closed-cone pine forest, montane coniferous forest, coastal and interior sage scrub, coastal strand, and alkali sink were of lesser importance to the aboriginal people.

Chumash settlements ranged from small seasonal camps to large, permanent

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Fig. 1. Map of Chumash territory showing linguistic divisions (after Grant 1965).

towns with up to 1000 inhabitants. The overall population is thought to have reached a peak of 15,000 to 20,000, most densely concentrated along the coast (Brown 1967:79). Villages were often clustered in desirable areas, such as around the margins of estuaries. The high population density in these spots undoubtedly affected the distribution and abundance of resources such as food plants, construction materials, and fuelwood.

The initial arrival of Spanish explorers in 1542 had relatively little impact on the Chumash other than the introduction of European diseases. When colonization



Fig. 2. John P. Harrington in Santa Barbara, 1923 (photo courtesy of National Anthropological Archives, Smithsonian Institution).

and establishment of the missions began about 1770, contact became much more intensive. The result after only a few decades of mission life was severe population decline and culture loss among the Chumash and other California Indian groups. These people were unable to perpetuate their former ways of life as their lands were taken over by Mexican and American settlers. Descendants of the Chumash still survive, though the languages are no longer spoken (Beeler 1986:109) and traditional knowledge is virtually gone.

THE HARRINGTON COLLECTION

Much of what is known about the Chumash today comes through the efforts of John P. Harrington (Fig. 2), an ethnographer and linguist for the Bureau of American Ethnology. He was a crucial figure in preserving a great deal of information that was in danger of being lost through the demise of the few remaining individuals who remembered the ancient traditions of many Native American tribes. Conducting field interviews with aged consultants across the country, Harrington began working with the Chumash in 1912. Most of his interviews with

Chumash-speaking people took place in the 1910s and 20s, but he continued working with the children and even the grandchildren of his earlier consultants intermittently until his death in 1961.

Harrington's field notes from the Chumash alone comprise several hundred thousand pages. The entire collection, now housed at the National Anthropological Archives at the Smithsonian Institution, also contains specimens gathered by his consultants and artifacts made by them. My study was based on the original materials at the Smithsonian (Harrington n.d.), but the notes have since been published on microfilm (Harrington 1986) and are now much more accessible to researchers.

Among the topics on which Harrington collected data were the uses and classification of plants. The Chumash material includes a total of 497 pressed plant specimens representing 206 identifiable species. These specimens have been placed in archival acid-free folders in an attempt to slow their deterioration, but are not mounted in herbarium format. They do not have catalog or voucher numbers and are rarely accompanied by information about the collection date and location (Fig. 3).

From Harrington's correspondence on file in the Archives and the newspapers in which the specimens were pressed, it appears that most of them were collected in 1928 and 1929 by a consultant from Santa Barbara, Lucrecia Garcia (Fig. 4). Lucrecia labeled the plants with common names in Spanish and/or the Barbareño Chumash language. On some tags she wrote "nescit," meaning she did not know or could not remember a name for the plant. Lucrecia's daughter, Mary Yee (Fig. 5), added notes on some of the tags; the Chumash and Spanish names she gave sometimes differed from those provided by her mother. There are also a few specimens labeled in Harrington's handwriting with information from Lucrecia's mother, Luisa Ygnacio, in 1914 (Fig. 6). Although fewer of these early specimens have been preserved, they seem to indicate that qualitative plant knowledge decreased from one generation of women in the same family to the next.

Juan de Jesús Justo (Fig. 7), also from Santa Barbara, provided information on some plant specimens during interviews in 1925 with Arthur Harrington, nephew of John P. Harrington. Justo was the only male consultant from whom specimens are extant. He made a number of obvious errors and on the whole seems less knowledgeable than the female consultants, but this may reflect the relative inexperience of the interviewer.

Finally, there is one box of plants with information collected in 1919 from María Solares, an elderly woman of Santa Ynez (Fig. 8). These specimens are the only ones from a non-Barbareño speaker, and Harrington went over them with Lucrecia Garcia in 1931 to check the Barbareño names.

There are no specimens from Harrington's principal Ventureño Chumash consultant, Fernando Librado, which is unfortunate because he provided a great deal of botanical information during the linguistic interviews. Perhaps at the early date of these interviews (Fernando died in 1915) Harrington had not yet seen the need for voucher specimens or had the time to collect them systematically. It is also possible that specimens were collected but lost in transit, or even within the Smithsonian. On my initial visit in 1978, I was told that the National Anthropological Archive staff had salvaged some ethnobotanical materials discarded by



[JF: Equisetum sp.]

Comitillo

was *pl. stg.*

The national herb is from T. P. ...

was *pl. stg.* ch.

of fine ...





Fig. 4-7. Harrington's principal Barbareño Chumash consultants. **Fig. 4.** Lucrecia Garcia, c. 1900. **Fig. 5.** Mary Yee, c. 1920. **Fig. 6.** Luisa Ygnacio, c. 1914 (photos courtesy of Yee family). **Fig. 7.** Juan Justo, c. 1930 (photo courtesy of Westways magazine).

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Fig. 3. Specimen of *Equisetum* sp. labeled by Lucrecia Garcia: "canutillo, was kli oloy." Harrington added: "wasK'o'loy. Ch. [=clearly heard]. From arroyo here [=San Roque Canyon, near Santa Barbara]. No use. The medicinal kind is from S. Rafael [=San Rafael Mountains, in the interior back country]. See spn. [=specimen; refers to another canutillo specimen, *Ephedra viridis*, which was brought from San Rafael range]."



Fig. 8. María Solares, Ineseño Chumash consultant, c. 1918 (photo courtesy of National Anthropological Archives, Smithsonian Institution).

the U.S. National Herbarium. The Southwest Museum collections do contain five plant specimens attributed to Fernando and labeled in Harrington's handwriting (cat. nos. 491-G-2096 and -2097A; 620-G-52B, C, and E).

In short, the 497 plant specimens extant in the Harrington collection do not represent a complete sample of the linguistic or regional variation in Chumash ethnobotanical knowledge. Of the nine principal Chumash consultants who provided information about plant usages, actual labeled plant specimens exist from only five individuals. Most of those were collected by just one person, Lucrecia Garcia, and just in the Santa Barbara coast and foothill region. Very few plants were collected in the Santa Ynez Valley and none in Lompoc, Ventura, or the northern interior where many ethnobotanically important species grew.

The specimens are valuable, however, in keying into plant names mentioned in the field notes (Fig. 9). Harrington carefully collected synonyms in the five major Chumashan languages, so that a specimen identified in one language can be correlated with its common name in another. Thus, even if Ventureño spec-

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Fig. 9. Photocopy: sample page from Harrington's notes, dated 3 Aug 1913, from interview with Ventureño Chumash consultant Fernando Librado. With translations added in brackets, the text reads as follows:

'iwekshesh = any meal—ground chia [= *Salvia columbariae*], yslay [= *Prunus ilicifolia*], ground acorn

1,331
H. AU: 3 1513 (1)

siwe x'èf =
 any meal - ground
 chia, yslay, ground acorn
 meal ready to leach, etc.
 Put acorn meal in a chari
 & leach it as I saw at
 Mesa Grande. But when have
 no chari they merely pour
 water on meal in a large
 wooden bowl & mix well
 & let settle & pour more
 water on then - 3 times or
 more.

masax k'supelwè
 = tres veces lo dejo
 (to settle) (said of leaching
 in a jícara).
 tfo'ò = esta amargo.

meal ready to leach, etc. Put acorn meal in a chari [=leaching basket] & leach it as I saw at Mesa Grande [San Diego County]. But when have no chari they merely pour water on meal in a large wooden bowl & mix well & let settle & pour more water on then—3 times or more.

masikh k'supelwè = tres veces lo dejo (to settle) [=I allow it to settle 3 times] (said of leaching in a jícara) [=gourd or wooden cup].

cho'o = está amargo [=it is bitter].

imens do not exist, many of the species used in that region can be determined with a fair degree of certainty.

Another critical factor in interpreting the Harrington material is the late date when the plants and the information were collected. The heavy impact of the dominant Spanish, Mexican, and Anglo-American cultures in the 19th century had already changed Chumash life irrevocably, resulting in outright loss of ethnobotanical knowledge and considerable alteration of what remained. For example, the selective burning of vegetation in grassland and savannah habitats, a form of environmental manipulation that had been suppressed in early mission times, was unknown to Harrington's consultants (Timbrook et al. 1982). Plants formerly important for food, construction materials, and religious use were rapidly being forgotten; medical uses of plants were changing under the influence of Hispanic folk medicine (Timbrook 1984).

Probably no individual, however experienced with plants, was aware of everything that was known about plant uses in Chumash culture as a whole, even in its heyday. Each of Harrington's nine consultants was familiar with only a small portion of the complete body of ethnobotanical knowledge that had existed in pre-contact times. It is nonetheless remarkable how much they collectively knew about plants that had not actually been used in years.

The complete corpus of Chumash ethnobotanical knowledge is, unfortunately, lost. It can be only partially reconstructed from the materials collected and the notes recorded by Harrington and his consultants. The information they provided must be verified and supplemented by consulting other sources—writings by the few other early ethnographers who worked among the Chumash, historical accounts by eyewitnesses such as explorers, missionaries, and later settlers, and current research with identifiable remains in archaeological deposits.

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LITERATURE CITED

- Beeler, M. S. 1986. Chumash numerals. Pages 109–128 in M. P. Closs, ed., *Native American mathematics*. Univ. Texas Press, Austin.
- Bocek, B. R. 1984. *Ethnobotany of Costanoan Indians, California, based on collections by John P. Harrington*. *Econ. Bot.* 38:240–255.
- Brown, A. K. 1967. The aboriginal population of the Santa Barbara channel. *Univ. Calif. Arch. Surv. Reports* 69:1–99, Berkeley.
- Grant, C. 1965. *The rock paintings of the Chumash*. Univ. California Press, Berkeley.
- Harrington, J. P. n.d. *Ethnographic field notes and plant specimens*. Original materials on file at the National Anthropological Archives, Smithsonian Institution, Washington, DC.
- . 1986. *John P. Harrington papers, Vol. 3: Southern California/Basin*. National Anthropological Archives, Smithsonian Institution, Washington, DC. Microfilm edition, Kraus International Publications, Millwood, NY.

- Smith, C. F. 1976. A flora of the Santa Barbara region, California. Santa Barbara Museum of Natural History, Santa Barbara, CA.
- Timbrook, J. 1984. Chumash ethnobotany: a preliminary report. *J. Ethnobiol.* 4:141-169.
- , J. R. Johnson, and D. D. Earle. 1982. Vegetation burning by the Chumash. *J. Calif. Great Basin Anthropol.* 4:163-186.

APPENDIX

This appendix, similar to one already compiled for the Costanoan Indians of the central California coast (Bocek 1984), lists all the plants for which Chumash uses are recorded in the Harrington materials. Only names, but not uses, were given for numerous additional plants not included in this appendix. Organization differs from Bocek's work in following the plant arrangement in Smith's (1976) flora of the Chumash region. Non-native species are marked with an asterisk.

Common names in Spanish and in the three principal Chumashan languages in which names were recorded—Barbareño (B), Ineseño (I), and Ventureño (V)—are set in bold face. The symbol *i* represents a sound midway between the short "i" in "tick" and short "u" in "tuck." Glottal stops are shown by apostrophes.

I have summarized the brief descriptions of plant usages from Harrington's field notes and information on specimen labels. The number of specimens in the Harrington collection at the National Anthropological Archives is given in brackets following each entry.

NONVASCULAR PLANTS

- Fungi—taxa unknown. **Hongo**; **shtopo 'hul'alaqshan** (B), **shtopo 'alaqshan** (I), **shtopo 'ishakshanuch** (V). Stemmed mushrooms were called "dead man's navel" and not eaten. [0]
- Shelf fungi—taxa unknown. **Fungo**; **shleqpe** (B), **cheweleqey** (I). Eaten boiled, fried, or made into stew. [0]
- Marine algae—*Macrocystis* sp. **Yerba del mar**; **sqoyis** (B,I), **chatishwi he miluk** (V). Kelp fronds thrown across bow of canoe to act as anchor when fishing; pieces of dried kelp stems carried for protection against people who were carrying dangerous magical substances. [0]

VASCULAR PLANTS

POLYPODIACEAE

- Dryopteris arguta* (Kaulf.) Maxon. **Yerba del golpe**; **kepeye** (B). Tea of the rhizome drunk or used as a wash for bruises. [3]
- Pteridium aquilinum* (L.) Kuhn. **Palma**, **manita**; **kich** (B). Fronds used for house thatching and to cover food being roasted in earth ovens. [3]

EQUISETACEAE

- Equisetum* spp. **Cañutillo**; **woshk'o'loy** (B), **kíwíkiw** (V). Wooden bowls polished with dry *Equisetum* stems; dried stems wrapped once around arrowshafts and pulled tight to leave decorative mark; medicinal decoction drunk as a purgative and for "enfermedades ocultas." *E. telmateia* Ehrh. var. *braunii* Milde. [1] (*Ephedra* of the Ephedraceae seems to have been included in this folk taxon.)

PINACEAE

- Pinus monophylla* Torr. & Frem. **Piñon**; **posh** (B,I,V). Seeds eaten; baskets made of strung piñon seeds for storage of piñon seeds; seeds given as ceremonial offerings; wood used for bows; soot from burned wood used as paint pigment; pitch used as adhesive, caulking material, and paint binder; pitch used medicinally, possibly as a poultice, and also chewed like gum. [0]
- Pinus* spp. **Pino**; **tak**, **tomol** (B,I), **tsikinín** (V). Wood used for construction of plank canoes; seeds eaten. [2]

TAXODIACEAE

- Sequoia sempervirens* Endl. **Pino colorado**; **wi'ma** (B), **wima'** (I), **wima** (V). Redwood logs obtained as driftwood; wood used in plank canoes, other construction, and grave poles. [0]

CUPRESSACEAE

Juniperus californica Carr. **Guata; mulus** (B,I,V). Wood used for sinew-backed bows; ground-up "berries" (i.e., fleshy cones) molded into cakes (traded from Yokuts) and eaten; said to taste sort of sweet. [0]

EPHEDRACEAE

Ephedra viridis Cov. **Cañutillo; woshk'o'loy** (B), **kiwikiw** (V). Medicinal decoction drunk for the blood and for "enfermedades ocultas" of men and women; also used to wash cuts. [1] (*Equisetum* of the Equisetaceae seems to have been included in this folk taxon.)

TYPHACEAE

Typha domingensis Pers. and *T. latifolia* L. **Tule ancho; taqsh** (B,I), **qap** (V). Twined mats and house thatching of cattail leaves; rhizomes and pollen eaten. [3]

ZOSTERACEAE

Phyllospadix torreyi Wats. **Zacate del mar; skhash** (B), **chkapsh** (V). Mattresses, knee pads for use in canoeing; covering for fish being dried; eaten when feeling faint from heat in the sweathouse. [0]

POACEAE

Arundo donax L.* **Carrizo de Castilla; shaq** (V). Planted in mission times and becoming naturalized. Stems used for roofing and construction material, arrows, and musical instruments. [0]

Avena fatua L.* **Avena del campo; 'aluche'esh** (B); **shushtewesh** (V). Seeds eaten. [1]

Distichlis spicata (L.) Greene. **lit'on** (I), **saha** (V). Plants beaten to remove surface incrustations for possible use as condiment salt. [0]

Elymus condensatus Presl. **Carrizo; shtemelel** (B), **shaq** (I,V), **shtemele'** (P). Stems made into arrows, tobacco tubes, cigarettes, paintbrush handles, gambling counter sticks, knives; used for house thatching; tea of new shoots taken for venereal disease. [4]

Hordeum spp.* **Cola de zorra; chtin** (B), **huchu** (I). Seeds eaten as pinole. [0]

Phragmites australis (Cav.) Trin. ex Steudel. **Carrizo, carrizo de panocha; 'eqpe'w** (B), **'iqpew** (I), **topo** (V). Aphid honeydew collected from stems and eaten like sugar; stems used for arrows. [0]

CYPERACEAE

Scirpus sp. **Tule**. Stems made into archery targets, dance headdresses, house thatching, mats, duck traps, sponges for sucking tobacco liquid. [1]

Scirpus acutus Muhl. ex Bigel. and *S. californicus* (C. E. Mey.) Steudel. **Tule, tule redondo; stapan** (B,I), **swow** (I), **kawiyish** (V). Stems used in balsa boats, carrying rings, house thatching, mats, skirts; roots eaten; ashes from burnt stems applied to newborn's navel and also used to treat poison-oak rash. [0]

Scirpus americanus Pers. **Tule, tule esquineado; swa'** (B,I), **tup** (V). Stems made into woven containers, mats, cradles, house thatching. [0]

JUNCEAE

Juncus sp. **Junco**. Stems used in basketry, mats, beadmaking, dance headdresses, and as needles. *J. patens* E. Mey. [1]

Juncus acutus L. and *J. effusus* L. **Junco; 'ulat'** (B,I), **'esmu** (V). Stems used in twined basketry. [0]

Juncus balticus Willd. and *J. textilis* Buch. (smaller stems). **Junco; tash** (V). Stems used as foundation of coiled basketry. [0]

Juncus textilis Buch. **Junco; mekhme'y** (B,I,V). Stems used as sewing strands in coiled basketry and as brooms; ashes from burnt stems used to treat poison-oak rash. [0]

LILIACEAE

Calochortus spp. **Cacomite; naqayqa'y, mataq, q'a'w** (B), **pulash** (I). Bulbs eaten. [3]

Chlorogalum pomeridianum (DC.) Kunth. **Amole; qi'w** (B), **kot'** (I), **pash** (V). Outer fibers of bulb used to make brushes, bear shaman costumes; crushed bulbs used as soap, hairdressing, fish poison; young shoots eaten. [4]

Zigadenus fremontii Torr. **Mo'yoq'** (B), **moyoq'** (I), **moyoq** (V). Mashed and placed on sores; said to be used secretly by sorcerers to kill people. [0]

AMARYLLIDACEAE

Dichelostemma pulchellum (Salisb.) Heller. **Cacomite**; **shiq'o'n** (B,I), **shi'qo** (V). Bulbs eaten raw or roasted. [5]

AGAVACEAE

Agave americana L.* **Maguey**. Leaves boiled to extract fibers, which were made into thread in Mission times and afterward. [0]

Yucca whipplei Torr. **Maguey**, **mescal**, **quiate**; **pokh**, **stakuk**, **meq** (B), **pokh**, **shtakuk**, **meq** (I), **wip**, **shtakuk** (V). Young flower stalks, and also the basal portion of the plant with leaves removed, were eaten after being roasted in pit oven with hot stones; leaf fibers made into cordage, sandals; dried stalk used for tinder; charcoal of yucca used as pigment in tattooing. [1]

SAURURACEAE

Anemopsis californica (Nutt.) H. & A. **Yerba mansa**; **'onchochi** (B,I), **'onchoshi** (V). The roots were boiled and the decoction drunk for venereal disease and cough, and used as a wash for cuts and sores and as a hot bath for pain of rheumatism. The roots were chewed or the tea drunk as ritual purification to prepare a person who was to carry dangerous substances. [0]

SALICACEAE

Populus fremontii Wats. and *P. trichocarpa* T. & G. **Alamo**; **qweleqwel** (B,I,V). Saplings used for house poles, large trunks occasionally for dugout canoes; wood made into boxes, bowls, and trays; inner bark shredded and the fibers woven into women's skirts; hot decoction of green bark used as a bath to treat injury. *P. fremontii* [1]

Salix laevigata Bebb. **Saus chino**; **wak** (B,I,V). Shoots used in basketry; wood for digging sticks, wooden bowls; bark for fiber belts, skirts, sandals, tumplines, carrying rings, brushes; some uses probably same as next species. [2]

Salix lasiolepis Benth. and *S. lasiandra* Benth. **Saus**; **shtayit** (B,I), **khaw** (V). Willow poles used in constructing houses, ladders, ceremonial enclosures, ramadas, storage bins, and platforms; trunks occasionally used for dugout canoes; shoots made into cradles, seedbeaters, and baskets. Wood for firewood and various tools such as fire drills, thatching needles; musical instruments, gaming pieces; dance wands, shrine pole. Bark strips used as lashing material. Feverish person made to lie on bed of willow branches. [5]

JUGLANDACEAE

Juglans californica Wats. **Nogal**; **ktip** (B), **tipk** (V). Nuts eaten, nutshells used as dice; bark perhaps used in twined basketry. [0]

BETULACEAE

Alnus rhombifolia Nutt. **Alamillo**; **mow** (B,I,V). Wood made into bowls, trays, and spoons, also used for firewood; bark used for dyeing string. [2]

FAGACEAE

Quercus spp. Acorns of most local species were eaten, usually as a cooked mush. Acorns also had a variety of non-food uses: as toys, strung on necklaces, chewed and smeared on the body for sun protection, soaked with iron as basketry dye; important in ceremonial offerings. Several species of oaks were distinguished by name and used in specific ways (see below).

Quercus agrifolia Nee. **Encino**; **ku'w** (B,I), **kuw** (V). The preferred species for acorn mush. Shoots used for bows, hoop in hoop-and-pole game, twigs in cradle construction; wood made into mush-stirrers, wooden bowls. Oak bark was used to dye hides and also burned as firewood, the coals for parching seeds and trimming hair. Green bark burned, the ashes soaked in water and drunk for indigestion; pustules or boils treated with juice of fresh oak galls or by drinking water in which oak bark had been soaked. [3]

Quercus douglasii H. & A. **Roble**, **roblecito**; **tushqun** (I). Wooden bowls. [0]

Quercus dumosa Nutt. var. *dumosa*. **Encino chino**, **encinito**; **mis** (B,I,V). Acorns eaten as mush, but considered inferior. Wood for bowls, arrow foreshafts, thatching needles. [1]

Quercus lobata Nee and *Q. dumosa* Nutt. var. *kinselae* C. H. Mull. **Roble**; **ta'** (B,I), **ta** (V). Acorns eaten as mush, but considered inferior. Not suitable as firewood. *Q. lobata* [3], *Q. d.* var. *kinselae* [2]

URTICACEAE

Urtica holosericea Nutt. **Ortiga; khwapsh** (B,I,V). Bast fiber used for cordage; paralysis, rheumatism, aches, and pains treated by whipping with nettles. *U. urens* L.* [1]

VISCACEAE

Phoradendron tomentosum (DC.) Engelm. ex Gray, and *P. villosum* (Nutt. in T. & G.) Nutt. **Muérdago; shlamulasha'w** (B), **stumuku'n** (I). Decoction of mistletoe drunk as a contraceptive. [0]

POLYGONACEAE

Eriogonum elongatum Benth. **Tibinagua; 'an** (V). Medicinal tea to stop hemorrhage. [2]

Eriogonum fasciculatum Benth. **Poléo**. Irregular menstruation, rheumatism treated by drinking and bathing in decoction of whole plant. [3]

Rumex crispus L.* **Lengua de buey; tsuqat'** (B), **ts'uqat'** (I), **'alagnipk'ish** (V). Seeds prepared as mush or as cakes baked in ashes; greens, peeled stems eaten. [3]

Rumex hymenosepalus Torr. **Cañagria; sha'w** (B,I), **'alappii** (V). Stalk eaten raw, boiled, or roasted; seeds eaten as molded thick mush; root used to dye *Juncus* yellow for basketry. [0]

CHENOPODIACEAE

Atriplex lentiformis (Torr.) Wats. subsp. *breweri* (Wats.) Hall & Clem. **Matorral grande; 'i'laq'** (B), **mo'** (V). Whole plant burned, the ashes used for lye in soapmaking in mission times. [2]

Chenopodium ambrosioides L.* **Epazote**. Medicinal tea given to babies. [1]

Chenopodium berlandieri Moq. **Choale; we'lel** (B), **welel** (I,V). Seeds eaten; young plants eaten as greens. [1]

Chenopodium californicum (Wats.) Wats. **Raiz de lavar; su'nuk** (B), **'akhwayish** (I), **choch** (V). Roots scraped or grated, water added to produce soap for washing; decoction of root bark drunk as emetic to treat consumption. [2]

AIZOACEAE

Carpobrotus aequilaterus (Haw.) N. E. Brown. **Tunita medanal, jayagüis; sto'yots'** (B,I), **shtamhil** (V). Fruits eaten. [1 at SWM]

PORTULACACEAE

Calandrinia ciliata (R. & P.) DC. **Pil; khutash** (B,I,V). Seeds eaten toasted and ground; seeds very important in ceremonial offerings and prominent in myths. [0]

Montia perfoliata (Donn.) Howell. **Petota; shilik'** (B), **shilik** (I). Seeds eaten; leaves cooked as greens. [1]

PAEONIACEAE

Paeonia californica Nutt. ex T. & G. **Peonia; mim** (B,I,V). Root decoction drunk as medicinal tea, particularly by women. [3]

RANUNCULACEAE

Clematis lasiantha Nutt. in T. & G. and *Clematis ligusticifolia* Nutt. in T. & G. **Barba de chivo; maqsik** (B,V), **'alamaqwak'ay** (I). Unspecified medical use. *C. lasiantha* [5], *C. ligusticifolia* [1]

LAURACEAE

Umbellularia californica (H. & A.) Nutt. **Laurél; psha'n** (B,I), **psha'an** (V). Leaves burned, smoke believed to aid in hunting by stupefying or attracting deer; decoction of leaves drunk for colds. [5]

BRASSICACEAE

Brassica spp.* **Mostaza; 'anitish** (B), **mushtasa** (V). Young plants used as greens. [0]

Lepidium nitidum Nutt. **Tapona; khakhsh** (B,I), **'iqmai** (V). Seeds eaten as pinole; pounded seeds mixed with cold water, drunk for diarrhea; decoction of plant taken for dysentery. [1]

Rorippa nasturtium-aquaticum (L.) Hayek. **Berro; welu** (B), **spe'ei he'so'o** (V). Greens eaten raw or boiled. [0]

SAXIFRAGACEAE

Ribes spp. **Baburi, barburi; stímiy, sqayinu** (B,I), **tsiqun** (I), **chtímiy** (V). Chumash nomenclature distinguished between spiny gooseberries and non-spiny currants. Fruits of some species eaten, others not. *R. amarum* McClat. [2], *R. speciosum* Pursh [2]

PLATANACEAE

Platanus racemosa Nutt. **Aliso; qsho'** (B,V), **shonush** (I). Wooden bowls; wagon wheels. [5]

ROSACEAE

Adenostoma fasciculatum H. & A. **Chamiso; na'** (B,I). Hardwood shoots used for arrow foreshafts, reaming tools, clam-gathering sticks; decoction of leaves used medicinally by women, apparently following childbirth or for other female conditions. [7]

Adenostoma sparsifolium Torr. **Yerba del pasmo**. Medicinal decoction taken internally or plant used with steam treatment to promote sweating as a remedy for paralysis. [0] (*Haplopappus arborescens* (Gray) Hall of the Asteraceae seems to have been included in the folk taxon "yerba del pasmo" and used in the same way.)

Cercocarpus betuloides Nutt. ex T. & G. **Pich** (B). Digging sticks. [1]

Heteromeles arbutifolia (Ait.) M. Roem. **Toyon; qwe'** (B,I), **qwe** (V). Fruits toasted (or dried and then mashed), then allowed to set for a period of time before eating. Hardwood shoots made into various implements such as arrow and harpoon shafts, bows, awls, wedges, scrapers, digging sticks; cradle frames, pegs in plank canoe construction; game sticks and balls; headdress pins. Wood burned to smoke dried fish; made into wooden bowls; shrine poles. [4]

Horkelia cuneata Lindl. and *Potentilla glandulosa* Lindl. **Tabardillo; chiqwi 'ikhakha'kh** (B). Medicinal decoction for stomach trouble, fever, colds. *H. cuneata* [3], *P. glandulosa* [7]

Lyonothamnus floribundus Gray subsp. *asplenifolius* (Greene) Raven. **Palo fierro; wili** (V). Wood for harpoons and fish spears, canoe paddles, abalone cleaning knives; bark boiled and soaked for basketry dye, perhaps used as fiber. [0]

Potentilla glandulosa Lindl. See *Horkelia cuneata*

Prunus ilicifolia (Nutt.) Walp. **Islay; 'akhtayukhash** (B,I), **'akhtatapish** (V). Fruit pulp eaten; seed kernels leached either in running water or by long cooking in several changes of water, then eaten as mush or molded cakes; seeds or prepared food given as ceremonial offerings. [5]

Rosa californica Cham. & Schlecht. **Rosa de castilla; washtiq'oliq'ol** (B,I), **watiquonqon** (V). Fruits eaten raw, strung as ornaments; unspecified medicinal use for children. [3]

Rubus ursinus Cham. & Schlecht. **Mora, zarzamora; tiq'itiq'** (B), **tiqitiq** (I), **tihí** (V). Berries eaten, but those that grew in damp places were believed to be unhealthy. [3]

FABACEAE

Lupinus spp. **Corona, perro, perrito; qlaha', wala'laq'** (B), **klahaw** (V). Seeds eaten after being mashed and boiled; flowers sucked for nectar. *L. bicolor* Lindl. [3], *L. latifolius* J. G. Agardh [3], *L. succulentus* Dougl. [1], *L. truncatus* Nutt. [1]

Melilotus spp.* **Trebol; shomoy** (B,V). Young plants may have been eaten as greens. [0]

Trifolium spp. **Tuche; sha'puk'** (B), **shapuk'** (I), **shapuk** (V). Leaves eaten raw; seeds eaten. [3]

GERANIACEAE

Erodium spp.* **Alfilerillo; chikwi'** (B), **s'u'wlima'** (I), **kwí'in** (V). Seeds eaten; decoction of the plant drunk for the blood. *E. cicutarium* (L.) L'Her. [1]

EUPHORBIACEAE

Croton californicus Muell.-Arg. **Barbaza; 'i'laq'** (B), **smakhna'atl** (V). Leaves or roots ground, mixed with grease, applied as salve for rheumatism. [2]

ANACARDIACEAE

Rhus spp. **Mangle; walqaqsh** (B,I). Ventureño distinguishes two kinds:

— **mangle mayor; walqaqsh** [*R. laurina* Nutt. in T. & G.]

— **mangle menor; shtoyho'os** [*R. integrifolia* (Nutt. in T. & G.) Brew. & Wats. and *R. ovata* Wats.]

Fruits eaten after being pounded, dried, and winnowed; decoction of *R. laurina* root bark drunk for dysentery. *R. integrifolia* [4], *R. laurina* [3], *R. ovata* [3]

Rhus trilobata Nutt. ex T. & G. **Chiquihuite**; **shu'nay** (B), **shuna'y** (I,V). Shoots used split and peeled in coiled basketry, whole in twined baskets; reinforcing for carrying nets, armatures for dance headdresses; bundles of stems used as brooms. [0]

Toxicodendron diversilobum (T. & G.) Greene. **Yedra**; **yasis** (B,I,V). Sap used medicinally to remove warts, corns, and calluses, to cauterize sores or skin cancers, to stop bleeding; root decoction drunk cold for dysentery. [0]

RHAMNACEAE

Ceanothus megacarpus Nutt. **Palo seje**; **sekh** (B,I,V). Wood used for fence posts, wedges. [7]

Ceanothus spinosus Nutt. in T. & G. and *C. oliganthus* Nutt. in T. & G. **Palo colorado**; **washiko** (B,I,V). Wood used for fence posts, shrine poles, digging sticks, pry bars, wedges, awls; silk moth cocoons found on these plants were used to make rattles. *C. spinosus* [8], *C. oliganthus* [2]

Rhamnus californica Esch. **Yerba del oso**; **puq'** (B,I), **shatishwi'ikhus** (V). Fruits considered poisonous. Leaves rubbed on skin for rheumatism; bark decoction drunk as laxative. [3]

Rhamnus crocea Nutt. in T. & G. and *R. ilicifolia* Kell. **suqup'i'** (B). Roots used as yellow dye for buckskin. *R. crocea* [7], *R. ilicifolia* [1]

VITACEAE

Vitis californica Benth. and *V. girdiana* Munson. **Uva cimarrona**; **nu'nit'** (B), **nunit'** (I), **nunit** (V). Fruits eaten. [0]

MALVACEAE

Malacothamnus fasciculatus (Nutt.) Greene. **Malva**; **khman** (B). Bark fiber used for cordage; tea drunk for unspecified medicinal use. [2]

Malva parviflora L.* **Malva**; **mal** (B,I), **malwash** (V). Fruit eaten; leaf or root decoction drunk for fever, as blood tonic; poultice for eyes, swollen knees. [1]

DATISCAEAE

Datisca glomerata (Presl) Bail. **Yerba colorada**; **'ansiya'wu'y** (B), **'aluqchahai'isaqpilil** (V). Root used to dye *Juncus* yellow for basketry; root decoction drunk for stomach trouble or sore throat, root chewed for sore throat. [1]

CACTACEAE

Opuntia spp. **Nopal**, **tuna**; **qiqi'** (B), **qi'** (I), **qi'ñil** (V). Uses reported only for prickly-pear types, not cholla. Fruits eaten, also used as paint or dye; pads eaten, the juice used to seal building plaster; thorns used in tattooing, ear piercing. [0]

APIACEAE

Daucus pusillus Michx. **Yerba de la víbora**; **s'akhiyep'ikhshap** (B), **shiyamsh'ikhshap** (I), **chatishwi'ikhshap** (V). Dried and smoked to treat paralysis caused by water on the brain; tea of the seeds drunk for sore throat. [0]

Lomatium californicum (Nutt.) Math. & Const. **Chuchupate**; **pa'** (B,I), **chpa'** (V). To stupefy rattlesnakes for capture, the root was chewed or soaked in water and the liquid applied to the hands, thrown on the snake's body, or squirted through a hollow tube into its mouth while the animal was held down with forked sticks; this was said to make the snake docile. Piece of root carried in the clothing for protection from rattlesnakes. Root chewed and applied as poultice for pain, rheumatism, sores; root decoction drunk for paralysis, rheumatism. [0]

CORNACEAE

Cornus stolonifera Michx. and *C. glabrata* Benth. **Irisis**; **wiliq'ap'** (B), **wiqap'** (I), **wiliqap** (V). Long, flexible shoots for fishpoles, hoop-and-pole game, templates and ribs in canoe construction, cradle frameworks. [0]

ERICACEAE

Arctostaphylos spp. **Manzanita**; **sq'o'yon** (B), **sq'o'yon** (I), **tsqoqo'on** (V). Fruits dried and ground, eaten as a flour or mixed with a little water. *A. glauca* Lindl. [6]

OLEACEAE

Fraxinus dipetala H. & A. Fresno; **winti'y** (B), **wintiy** (I), **wilti'** (V). Charcoal from burned wood used to make black paint; wood soaked in water to make a refreshing drink, which was also used medicinally. [0]

GENTIANACEAE

Centaurium venustum (Gray) Rob. **Canchalagua**. Decoction drunk for unspecified medicinal use. [0]

APOCYNACEAE

Apocynum cannabinum L. **Tok** (B,I,V). Bast fiber for cordage used in making bowstrings, fishing lines, construction, nets, clothing, ornamentation, and ritual paraphernalia, and for canoe construction. [0]

ASCLEPIADACEAE

Asclepias spp. **'okhponush** (B,I). Bast fiber for cordage used in making nets, clothing; sap chewed like gum. [0]

CONVOLVULACEAE

Calystegia macrostegia (Greene) Brummitt and *Convolvulus arvensis* L.* **Mañana de la gloria, sombrero del coyote; s'epsu 'i'ashk'a'** (B), **s'epsu' 'akhukha'w** (I). Preparation for handling rattlesnakes; details not given. *Calystegia macrostegia* subsp. *cyclostegia* (House) Brummitt [4], *Convolvulus arvensis** [1]

HYDROPHYLLACEAE

Eriodictyon crassifolium Benth. **Yerba santa; wishap** (B,I,V). Leaf decoction drunk for colds, cough, fever, chest pain, also used as a hot bath and mixed with brandy as a chest rub; used in unspecified way for painful feet. *E. crassifolium* var. *denudatum* Abrams [3], *E. traskiae* Eastw. [2; 1 more at SWM]

BORAGINACEAE

Amsinckia intermedia F. & M. **Tekhe'we** (B), **tekhewe'** (I). Seeds eaten in pinole. *Cryptantha* sp. [2] (Description of **tekhe'we** in the notes clearly refers to *Amsinckia*; specimens are very similar in appearance.)

Plagiobothrys sp. **Ka'nay** (B). Root juice produces red color when rubbed on skin, used as play paint pigment by children. [0]

VERBENACEAE

Verbena lasiostachys Link. **Verbena, ortiga del coyote; shikhwapsh 'i'ashk'a'** (B), **s'uwmo'oyoso** (I), **'alsho'o** (V). Root decoction drunk for fever and smallpox; water in which mashed leaves have been soaked was used for washing the hair. [6]

LAMIACEAE

Marrubium vulgare L.* **Marrubio**. Not considered medicinal. [2]

Mentha spicata L.* **Yerba buena**. Boiled in water and the steam used to treat sore eyes associated with colds; plant placed on meat roasting in earth oven. [0]

Salvia apiana Jeps. **Salvia real, salvia mayor; khapshikh** (B), **khapshikh** (V). Pounded leaves added to cold water, drunk to induce vomiting; fresh leaves placed on head for headache. Young shoots peeled and eaten. Leaves placed in the mouth when hunting, said to prevent deer from detecting hunter's presence. Lining for acorn granaries. [2]

Salvia carduacea Benth. **Chia gruesa; pakh** (V). Seeds eaten, but less preferred than *S. columbariae*. [0]

Salvia columbariae Benth. **Chia; 'ilepesh** (B), **'ilepesh** (I), **'itepesh** (V). Seeds toasted, ground and eaten dry or mixed with water as a drink; seed dropped into the eye to remove foreign matter, which adhered to the seed's mucilaginous coating; chia seeds were important ceremonial offering. [0]

Trichostema lanatum Benth. **Romero; 'akhiye'p** (V). Unspecified medicinal use. [4]

SOLANACEAE

Datura wrightii Bye [*D. meteloides* A. DC. in literature]. **Toloache; mo'moy** (B), **momoy** (I,V). Roots mashed, steeped in water, and the liquid drunk as hallucinogen to obtain spiritual guidance, particularly at puberty; also drunk or leaves applied as poultice to treat injuries. [1]

Nicotiana bigelovii (Torr.) Wats. **Pespibata; show**. Leaves ground, often mixed with lime from burned shells, eaten or drunk mixed with water by men as emetic for health and social activity; tobacco smoked principally in curing or ritual contexts. Tobacco-lime mixture drunk to relieve stomach pains, poultice applied as topical anesthetic. Tobacco was an important ceremonial offering. *N. glauca* Graham.* [1]

Physalis philadelphica Lam.* **Tomatillo**. Fruits eaten cooked in stew. [1]

Solanum douglasii Dunal in DC. **Chichiquelite; 'aqlpop'** (B,I), **qolpo'op** (V). Fruits eaten raw or boiled. Leaves mashed in water, the liquid used for washing the hair. Leaves or berries rubbed on skin as poison-oak remedy, leaves applied as poultice for pain; juice of leaves mixed with charcoal as pigment for tattooing. [3]

SCROPHULARIACEAE

Keckiella cordifolia (Benth.) Straw. **Moronel**. Tea drunk for runny nose. [5] (*Lonicera subspicata* of the Caprifoliaceae included in this same folk taxon.)

PLANTAGINACEAE

Plantago spp.* **Lanten**. Leaves heated and applied as poultice for toothache, infected sores. [0]

CAPRIFOLIACEAE

Lonicera subspicata H. & A. **Moronel; tenech** (B). Tea drunk for runny nose. [4] (*Keckiella cordifolia* of the Scrophulariaceae included in this same folk taxon.)

Sambucus mexicana Presl. **Sauco; qayas** (B,I,V). Wood used for bows; hollow stems used for containers, flutes, split-stick rattles, fire drills, various tools; bark for fiber; fruits eaten. Decoction of flowers drunk and used as hot bath to induce sweating; tea of pounded roots used as strong laxative; plaster of elderberries, egg white, and mud put on aching place; wood splints for broken bones; leaves mixed with urine and applied to legs before going into brushy areas, so rattlesnake would rattle before person was upon it. [7]

Symphoricarpos mollis Nutt. in T. & G. **Oreja de ratón, escoba; tu'** (B,I), **chtu 'iqonon** (V). Sprigs bound together and used as brooms; stems used for baskets, toy arrows; berries eaten? [3] (*Lonicera johnstonii* (Keck) McMinn may be included in this folk taxon [2].)

CUCURBITACEAE

Cucurbita foetidissima HBK. **Chilicoyote, calabazilla; mokh** (B), **mo'kh** (I), **mo'okh** (V). Root scraped and used as soap, but considered irritating; inside of fruit also used as soap. Tendrils or root pounded, put in water, and drunk as purgative. Fruits dried and used for containers, dippers, rattles. [0]

Marah macrocarpus (Greene) Greene. **Chilicote; molo'wot'** (B), **cha'** (I), **'anmakhwakay** (V). Seeds strung for jewelry, used as gaming pieces. Seeds toasted until black, mashed, mixed with water, and drunk for the blood, before childbirth; given as purgative especially for young children; the black powder painted on the body for curing, also applied to the hair. Spiny fruit husk thought to be the only safe container for carrying dangerous magical substances. [2]

ASTERACEAE

Achillea millefolium L. **Yerba de la muela; shteleq' 'a'emet, masteleq 'a pistuk** (I), **yepunash** (V). Poultice for cuts. [3]

Ambrosia psilostachya DC. **Munakh** (B,I,V). Bitter decoction taken to reduce fever. [3]

Artemisia californica Less. **Romerillo; we'wey** (B), **wewey** (I), **wewe'y** (V). Firesticks (horizontal hearth portion); arrow foreshafts; brush windbreaks and enclosures. Poultice or hair wash to treat headache. Plant burned, also soaked in water to bathe with or sprinkle for ritual purification, especially related to death; bundles of branches erected along path to shrines. [3]

Artemisia douglasiana Bess. in Hook. **Estafiate; molush** (B,I), **molish** (V). Leaves pounded and rubbed on, or decoction used in bath as poison-oak remedy. Fuzz from dried leaves molded into pellets, burned on aching place or to cauterize sores; leaf poultice for sore neck; to induce sweating as cure

- for **pasmo** (severe infection or pain caused by air trapped in the body), patient lies on layer of green sprigs put over hot coals. [3]
- Baccharis glutinosa* Pers. **Guatamote**; **shu'** (B,I), **wita'y** (V). Fire drill and hearth; fish traps used with weirs in river; fish poles, arrows. [2]
- Baccharis plummerae* Gray and *Conyza canadensis* (L.) Cronquist.* **Yerba del aire**, **yerba del aigre**; **wili'lik'** (B), **wililik'** (I). Plant ground and applied to any aching part of the body; tea drunk for kidney trouble. *B. plummerae* [3], *C. canadensis* [3]
- Cirsium* sp. **Cardo**; **qayish** (B). Leaves (?) eaten. [2]
- Conyza canadensis* (L.) Cronquist.* See *Baccharis plummerae*.
- Gnaphalium* spp. **Gordolobo**. Unspecified medicinal use. *G. bicolor* Bioletti [2], *G. californicum* DC. [4], *G. microcephalum* Nutt. [1]
- Grindelia robusta* Nutt. **Copaiba**; **shtiqsh 'ishaw** (V). Gum used medicinally. [1]
- Haplopappus arborescens* (Gray) Hall. **Yerba del pasmo**. See *Adenostoma sparsifolium* (Rosaceae). [4]
- Helenium puberulum* DC. **Rosilla**; **manakhshmu** (V). Medicinal use for influenza; crushed, dried flowers put in water, drunk to cure effects of too much tobacco smoking. [1]
- Hemizonia* spp. Seeds eaten as pinole or raw, molded into balls; plants tied in bundles for use as brooms. *H. fasciculata* (DC.) T. & G. [3]
- Heterotheca grandiflora* Nutt. **Yerba de la pulga**. Used to repel fleas. [1]
- Hypochoeris radicata* L.* **Cardo**; **qayish** (B). Leaves eaten. [1]
- Layia platyglossa* (F. & M.) Gray. **Spawa** (I). Seeds eaten as pinole. [1]
- Matricaria matricarioides* (Less.) Porter. **Manzanilla**. Unspecified medicinal use. [1]
- Perezia microcephala* (DC.) Gray. **Sacapellote**; **'alashkhalalash** (B). Root decoction drunk for cough. [2]
- Solidago californica* Nutt. **Oreja de liebre**; **stu' 'ima'**, **smolush 'i'ashk'a'** (B), **shtu'ama'** (I), **chtu 'ima** (V). Decoction drunk for cough and used as wash for bruises, especially on horses. [3]
- Sonchus oleraceus* L.* **Cardo**; **qayish** (B), **tsaqsmi** (V). Leaves eaten. [3]
- Xanthium strumarium* L. **Guachapore**, **cadillo**; **sho'moy** (B), **mokoksh** (I), **shomoy** (B). Tea used as a wash for cuts. [1]