

Devil's Club

Oplopanax horridum

A report of personal experience and some research notes

My intent is to gradually compile further information and personal experience with *Oplopanax horridum*. This may develop into some sort of occasional newsletter. In print and/or on-line. I hope to be involved with bringing devil's club into cultivation for commercial production of medicinal products. I also intend to remain a supplier of sustainably wildcrafted devil's club.

Oplopanax horridum (Torr. & A. Gray) Miq.
Echinopanax horridum Decne. & Planch. ex Harms.
Araliaceae family. Relative of ginseng and siberian ginseng.

Range: *Oplopanax horridum* is found primarily in the long chain of coastal mountain ranges running from south-central Alaska and southwest corner of Yukon through British Columbia, western Washington and Oregon and into northern California. It also extends into the wetter mountain forests in interior British Columbia, western Alberta, north Idaho and northwest Montana. Surprisingly, there is a disjunct population living around the northern and western sides of Lake Superior in Ontario and Michigan. Most likely the genotypes of this population will be hardier than any of the West Coast genotypes.

There is one other species of *Oplopanax* which the Japanese call Nakai. *O. japonicus* differs from *O. horridum* in having the leaves sometimes peltate, the lobes more deeply cut and long-acuminate. It is classified as USDA hardiness Zone 6. It is more frost tender than *O. horridum* which is classified as a Zone 4 plant. *Oplopanax* is closely related to the east Asia *Araliaceae* family including *Kalopanax*, *Fatsia*, and Siberian ginseng (*Acanthopanax senticosus* syn. *Eleutherococcus senticosus*).

In most of North America, *Oplopanax* is considered the genus name for this beautiful plant. The Alaskans and Asians, however, favor the botanical name of *Echinopanax*. So one should check indexes under both genus names when consulting texts from Alaska or northern Asia.

horridum or horridus?

Hitchcock and Cronquist in *Flora of the Pacific Northwest* use the name of *O. horridum*. *Hortus Third* uses the species name of *O. horridus*. I have seen both of these spellings used in numerous scholarly and popular texts. So one can find ample experts to back the use of either spelling you should prefer to use. Personally, I like the sound of horridum better than horridus.

Elevational range: Devil's club is found from sea level to 4500' elevation in Washington and British Columbia. It is found up to timberline in se Alaska. Here in the Puget Sound region I seldom find it in the lowlands. It is up in the foothills and mountains that I find it. I don't know whether it was always rare in the Puget Sound lowlands or just that their habitat has largely been eradicated.

Devil's Club in Alaska

Devil's club is found in large amounts in southeast Alaska where it forms impenetrable thickets in coastal and flood plain forests.

How much devil's club is in Alaska? A recent US Forest Service publication sheds some light on this question. The authors weighed plant biomass for many species on hundreds of plots in southeast Alaska's ecosystems. According to their plot tests the total weight of Devil's club aboveground biomass was 2,264,237,000 kg. (5,094,533,000 pounds. This works out to 2,547,000 tons. They found that devil's club was found on 69% of all the sites studied.

224 kg/ha x 3,678,000 hectares of closed needleleaf forest. = 823,872,000 kg

165 kg/ha x 1,338,000 hectares of open needleleaf forest = 220,770,000 kg

1,474 kg/ha x 823,000 hectares of tall shrub nonforest = 1,213,103,000 kg

33 kg/ha x 217,000 ha of low shrub nonforest = 7,161,000 kg

Total 2,264,237,000 kg

OVER 5 BILLION POUNDS !

Phytomass in Southeast Alaska

Bert R. Mead. USDA Forest Service PNW Res. Stn. Research paper PNW-RP-505, May 1998. 48 pp.

Phytomass tables are presented for the southeast Alaska archipelago. Average phytomass for each sampled species of tree, shrub, grass, forb, lichen, and moss in 10 forest and 4 nonforest vegetation types is shown. This covers a 10,878 million-hectare area. Ground sampling measurements were done at 401 tree plots and 167 vegetation plots at 85 locations.

Phytomass coefficient development followed techniques similar to those first used by Harcombe and Marks in 1977. For details see: *Understory structure of a mesic forest in southeast Texas*. P.A. Harcombe and P.L. Marks in *Ecology*, 58: 1977. 1144-1151.

English/Metric conversions

1 hectare = 2.471 acres.

1 kilogram = 2.205 pounds.

Devil's Club, *Oplopanax horridum*

Natural History - Environment

Devil's club only occupies a relatively small percentage of the forests in the upper Skykomish Valley of Washington's North Cascades. Perhaps 1%, or less of the area is in *Oplopanax* patches. It likes seepage areas, streambanks, high humus areas, moist areas, ravines and steep draws. Their roots are shallow and they can survive with bedrock close to the surface if there is adequate moisture and leaf litter. I find it growing in the duff on top of huge boulders where there is virtually no soil. Some of the plants I noted growing with devil's club in this location included Hooker's fairybells (*Disporum hookeri*), many species of moss, *Geum*, vanilla leaf (*Achlys triphylla*), yellow violets and *Trillium*. It really likes living under cottonwoods since they drop so much leaf & litter. Devil's club is often associated with red cedar, sitka spruce and douglas fir.

Size: Individual ascendent stems in the Washington stands are generally 6 to 10 feet tall. I have seen the occasional exceptionally tall stem up to 15' tall. The plants in the southern part of its range (California and Oregon) tend to be smaller than plants in the northern parts of its range.

Devil's club blooms in April-June depending on elevation and seeds ripen in September and October.

I find it primarily in the early and late stages of forest succession. It is part of the riot of life in newly disturbed sites where sun allows a profusion of life to flourish. As the trees canopy gets shadier and shadier you die out. This is where I especially like to harvest devil's club. In the deep shade where it is dying out and it has big roots and stout recumbent stems thick with bark. They are easier to pull out than their younger progeny growing lustily at the edge of light.

Northwest maritime forests left to their own devices gradually thin and open up as old-growth conditions return. Old-growth allows more shafts of light to the understory and devil's club thrives again in these late stages of succession. The current trend for early harvesting and clearcutting of forest stands does not bode well for devil's club abundance in the landscape, as it dies out when the shade gets thick in the tightly planted monoculture conifer plantations.

The Uses of Devil's Club

Indigenous people in its range used devil's club for a wide range of uses and still do to a lesser extent. Modern people are just beginning to learn the uses of devil's club, which will in the long run, undoubtedly turn out to be many. Following are a few of devil's club's possible uses.

Medicine. Devil's Club was, and is, one of the main medicines of the northwest coast peoples. The list of its purported uses for medicine is lengthy and beyond the scope of this report. Some of the major conditions it is currently used for are: as an expectorant and lung stimulant; adult onset diabetes; colds; rheumatism, ar-

thritis and some other auto-immune conditions. The list of medicinal uses goes on and on. See the reference books for more details on medicinal uses.

Spiritual: Devil's Club is one of the more psychic plants in the Northwest and is a very intelligent plant. *Oplopanax* demands to be treated with respect. Their height puts them on the same eye level as humans. Devil's club was/is perhaps the Native people's most important magic plant and native shamans used it extensively. It was widely regarded as a protective influence and placed above doorways and in boats. It was eaten on vision quests, used in sweat lodges and conferred supernatural powers.

Wood products. One of my favorite devil's club stories involves a stranger at a crowded farmers market recognizing a bag of dried devil's club rootbark under my arm. He made and sold walking sticks made from devil's club stalks. He threw away the bark and I threw away the sticks! We obviously needed a merger. He said that devil's club had the lightest wood found in the Northwest and made a fine, light-weight walking stick. I know from personal experience that the wood is very white and very light. It is not very strong, but is easily carved. Native people carved fish lures out of devil's club wood. The range of craft items this lightweight wood could be used for is limited only by the imagination. I would propose that any commercial grower or wildcrafter find a market for the stripped stems. It would add to the overall income, plus spin-off additional jobs and respect the plant by utilizing more of it.

Fragrance. the native people used it for fragrance in a number of ways. The Cowlitz pulverized the dried rootbark into a powder and used it for a perfume. The Lushootseed of British Columbia used the powder for deodorant. The rootbark was also used for a general fragrance in the dwellings. The aromatic elements are responsible for the lung stimulating properties according to Michael Moore. These native uses suggest that many products could be derived for aromatherapy, essential oils, potpourri, perfumes, deodorants, and products seeking attractive, unique scents.

Cosmetics. The fragrance angle would have application within the cosmetics industry. The Lummi of upper Puget Sound used devil's club berries rubbed into the scalp to combat lice and dandruff and to make hair shiny. It would take a pretty big planting of devil's club to produce enough berries to have marketable quantities of berry pulp, but it is something to experiment with on the small scale. If one was extracting seed to sell, than perhaps ways could be devised to separate the pulp from the seeds in a way that retains the pulp in a usable form.

Dyes. Devil's club was used by various tribes in different ways to produce dyes for cloth, tattoos and face/body paints. Often-times it was the ash used in various admixtures with grease and other ingredients.

Landscape ornamental. Devil's club makes a knock-out accent

Devil's Club, *Oplopanax horridum*

plant. Its dangerous character relegates it to less frequented corners of large gardens and estates. It would be an effective addition to barrier plantings! We can certainly see it being used more as an ornamental.

Propagation material. One of the income potentials for commercial plantings of devil's club is to provide planting stock. Seeds and root cuttings can be sold to people putting in commercial plantings, as well as to the landscape and restoration industries.

Restoration. Devil's club should be used in restoration plantings in suitable riparian and mountain habitats throughout its range. Restoration already consumes a large number of plants and this will likely (and hopefully) increase in the coming decades. Commercial plantings could supply propagation material for this restoration work with the caveat that restoration projects should, by and large, obtain genetic material from as close to on-site as possible.

The different parts of devil's club

Some herbalists promote using the bark from the aboveground stem, as well as the recumbent stem and the true roots. Thus the wildcrafter can deliver a number of different products. I am sure that all parts of the plant are useful, but some parts have higher concentrations of various constituents than other parts. Most herbal books talk about using devil's club rootbark.

* **Recumbent stembark.** This is the "rootbark" of commerce. This is the part most frequently encountered in the trade and is the part considered most active in most herbals. Recumbent stems have few or no remaining spines and a thick succulent bark. The bark is relatively easy to remove from the inner core wood. The recumbent stems generally have to be brushed or scraped to remove dirt, duff and moss. The recumbent stem has several layers. The outer bark is very thin, paperlike and light brown. Underneath this thin outer bark is a thick, succulent bark, which is the medicinal part. For the best quality product, I flake off the brown outer bark by rubbing a butterknife briskly back and forth along the stem. This exposes another layer of root bark. This cambial bark is smooth and either a bright green or a bright yellow color. The green is more pronounced on the ascending stems, but is still often met with in the recumbent stems also. This indicates (to me at least) that the bark itself contains chlorophyll and is photosynthesizing. The older parts of the recumbent stems are predominantly the bright yellow color. The rootbark tastes good. Pungent, earthy (reminiscent of burdock) with a peppery aftertaste.

* **True roots.** True roots descend at nodes spaced out along the recumbent stems or rhizomes. The true roots are found about every 6 to 12 feet along the recumbent stem network. These true roots are quite fleshy. The true root also has several layers. The outer layer of the true root is very thin and a tan color reminiscent of the somewhat thicker light brown bark on the stems. The

surface of the cambial bark is reddish brown in color. The bark of the root is thicker in proportion to its inner core compared to the recumbent stems. Slicing the true rootbark exposes small pockets of a glistening, golden, resinous substance. This resinous golden substance most likely contains some of the useful constituents. These small pockets are just discernable with the human eye. They are also found in the bark of the recumbent stems but to a lesser degree, and to an even lesser degree in the ascending stems. Most herbalists utilize the whole true root. The highest quality product would be to peel the true root bark off the inner core and discard the inner core.

* **Ascending stems.** The bark is not as thick as in the recumbent stems. The bark of the ascending stems can be as readily removed from its hard, woody core as the underground stolon bark, AFTER the spines have been scraped off the stem. Which is easier than it appears, although good gloves are a must. It takes 2 to 3 times as long to remove the outer bark with spines compared to the recumbent stems. Some ethnobotany texts on native uses of devil's club mentions them scraping spines off the bark before using. This indicates that the bark of the ascending stems has medicinal value.

Each of these parts would have more or less different properties. Most likely the bark of all parts of the plant will be stronger than their associated woody interiors. Different parts of a plant often have synergistic affects when used together. Extensive experience will teach us what parts of the devil's club will be useful for treating what conditions. Have any studies been done to compare the constituents and the actions of different parts of the plants?

Harvesting

Some figures gained from my experience:

In one 1996 drying experiment, it took 4 pounds of fresh stripped devil's club recumbent stem bark to yield 1 pound dried. It took 3.5 pounds of fresh devil's club true root to yield 1 pound dried.

Proportion of true-root to recumbent stem bark. One batch of wildcrafted devil's club I harvested on May 12, 1996 in the Skykomish River valley yielded 25 pounds of rootbark and 5 pounds of true root. This suggests that whole plant harvesting from commercial plantings might yield 4 parts root bark (80%) to 1 part true roots (20%). This would be for whole plant harvesting.

Harvesting gear: Harvesters should always wear thick gloves and long sleeved shirts and pants with a strong fabric. Devil's club spines are sharp and thickly set on the stem and upper portions of the plant. The spines are barbed, poisoned with formic acid and easily break off in the skin. They are difficult to extract and will fester and be painful for weeks. Native legend has it that the barbed spines will penetrate into the blood stream and be carried to the heart and kill people. Anyone who works with

Devil's Club, *Oplopanax horridum*

devil's club should carry needles and tweezers. When I am wildcrafting, one of my first acts is to decapitate the devil's club (cut off the spiny top) before attempting to pull up the recumbent stems, because otherwise the tops have a nasty habit of flopping around and slapping you in the face! Which is perfectly understandable self-defense.

Tools:

The old-fashioned butterknife is one of my favorite tools for devil's club. Don't use the modern butterknives since they tend to have a short, curved blade with serrated teeth. Serrated teeth are not as effective as a plain blade. Look in 2nd hand stores. Michael Moore recommends using a stiff brush to clean the outer bark of devil's club. I use a butterknife to peel the bark off the stem in long narrow strips. The last remaining bits are rubbed off with the butterknife. The butterknife is less dangerous than a sharp knife and does a better and faster job. These long barkstrips curl up as they dry. The dried barkstrips are called quills. I like nibbling a few quills for the flavor and notice an almost immediate sharpening of the mind.

Few devil's club plants have many true roots and some have hardly any. In general I would say that devil's club has one of the smallest root masses in proportion to its aboveground parts of any woody-stemmed plant I know of. It exists with very little invested in below ground root systems. This is one reason it needs a constant supply of water. Where devil's club roots in duff pockets on tops of rock faces, one could almost say it was growing in a form of natural hydroponics since the devil's club is picking up nutrients from the water seeping through the duff. The nutrients are supplied by the break down products of soil microorganisms in the duff and humus layers, as well as by nutrients in the throughfall. Another reason to plant overstory trees in devil's club commercial plantings is to take advantage of the nutrient-rich throughfall which is the result of rain passing through the canopy.

Sustainable wildcrafting standards. What percentage of a stand to harvest at a time and how often are questions that need to be considered. These standards would be different over different parts of its range. Harvesting would have to be much more judicious and light-handed at the edges of its range where it is rarer (such as California, Oregon and the interior parts of its range) as compared to areas like British Columbia and SE Alaska where it is massively abundant. An assessment of devil's club populations in the various parts of its range has yet to be attempted.

In my wildcrafting I have been harvesting 1% to 5% of a stand, but I don't come back for at least several years. 5% may not be sustainable if taken on an annual basis and at these percentages harvesting might be better done every two or three years. I do not harvest the outlier stems as I wish the patch to expand, not contract. This means I lightly thin out the interior of the stand. It is usually possible to take just part of each recumbent stem system. Cut the recumbent stems 8 inches or so from the ascending stems that are to be left.

When wildcrafting in natural stands, I obtain almost all of my

plant material by pulling the plants up by hand. I hardly ever resort to a digging tool. Since devil's club is almost always associated with a riparian area or seepage zone, we want to minimize site disturbance, hence no digging tools. Devil's club can grow on quite steep and unstable slopes including avalanche chutes. Undue harvesting on such sites may cause slippage, erosion or slides. Do not harvest where devil's club is helping hold a slope from sliding. Do not harvest in old-growth stands.

Bringing devil's club into cultivation & cultural requirements

Soils to use for devil's club plantings.

Moist but well-drained soils are critical. High levels of humus are needed. Heavy clay soils are not likely to be good, although huge amounts of amendments, drainage and/or mounding might make it possible. These have economic costs.

Rich agricultural soils will probably work well. Some further amendments with organic matter is likely to be helpful (or necessary). Drip irrigation or rill irrigation will be necessary where soils dry out. Optimum levels of N, P, K, Ca, Na, Mg, Mn and trace elements need to be determined. Doing soil tests of soils under healthy natural stands will tell us much of what we need to know.

Mycorrhizal fungi, soil microflora and microfauna. Since devil's club root systems are concentrated in the surface levels of duff, humus and soil, it is most assuredly dependent on symbiotic relationships with associated soil life. Commercial plantings should pay careful attention to inoculating soils and nursery stock with fungi and soil life obtained from native stands. Cultural practices should ensure a healthy, lifeful, rich, humusy soil. Organic growing practices are called for.

Using woody biomass for fertilizer/mulch.

When harvesting devil's club in the wild, I find they like to root within and under decayed down logs and large woody debris. This suggests that it would be advantageous for commercial growers to utilize decayed woody material as a mulch. This conserves moisture, shades soil surfaces and provides nutrients to the growing devil's club. If preparing a forested or previously forested site for devil's club planting, all the biomass should be retained for this purpose. This includes stumps, logs, branches, etc. If preparing a former field for planting then thought should be given to obtaining forest biomass for this purpose. The more rotted that biomass the better. Fresh green material will take longer to become available to the planting. Too much carbon material can tie up nitrogen temporarily.

Mulch materials to enhance soil organic matter levels can include many materials. Spoiled hay, straw, crop wastes, sawdust, manures, and so forth. Some of these materials are best composted first. Care should be taken not to use any material which has been contaminated by pesticides, herbicides, heavy metals, etc. Follow the guidelines for organic farming certification standards.

Devil's Club, *Oplopanax horridum*

Shade Requirements

American and Asian Ginseng (*Panax* species) are generally grown commercially under artificial shade. In Asia, traditionally under lathe or mats. Modern plantings in North America are generally under woven shade cloth supported by a network of poles and wires. A very expensive system to install. What will be the optimum shade/sun for commercial devil's club plantings? This will vary from site to site and depending on latitude. At this point we have virtually no experience with commercial plantings of *Oplopanax*, but here are some general guidelines. Devil's club have large horizontal leaves adapted to catching filtered light in the understory of a forest.

Devil's club in the southern part of its range is found almost exclusively in dark, shady forests. Similarly in the dryer, interior parts of its range it is limited to shady, moist sites in forest canyons. However, in the northerly parts of its range it can be found in full sun. Here in Washington's North Cascades it likes partially shaded riparian corridors. It is found under conifers, but especially likes deciduous trees. It probably likes the somewhat higher light levels in early spring before the big leaf maples and alders fully leaf out.

So I believe that light levels for optimum growth will be higher in the north than in the south. Conversely a higher amount of shade will be beneficial in the southern and interior parts of its range.

I would suggest that commercial devil's club plantings include a component of deciduous overstory trees. The density of the overstory trees and the best species to use need to be determined by test plantings. Cottonwoods should be looked at because they get tall quick and dump large loads of leaves. Cottonweed leaf and litter makes soils more alkaline than do alders or conifers. Alders (*Alnus* spp.) are one of the obvious first choices as alders are nitrogen-fixing and a common native companion. Big leaf maple is also a common companion, although it is only hardy up to Vancouver Island and adjacent BC mainland. A common agroforestry strategy is to plant overstory trees rather thickly at first to achieve a quick canopy cover, and thin gradually as the trees grow to keep light levels at the desired level. These thinnings should yield income plus provide fertility inputs for the devil's club. Nutrients are supplied via several pathways 1) roots "leaking" (actually they push out nutrients) into the soil to feed the whole root-zone biosphere. These root biospheres, sometimes call rhizospheres, have elevated soil populations and diversity. Devil's club and other understory plants take advantage of the fertility generated. 2) Leaf and litter fall provides an annual feeding of the soil micro-organisms. 3) Throughfall of rain from the canopy with its nutrient load. 4) Fallen branches, logs and large woody debris.

Overstory tree plantings will be found much cheaper than artificial shadecloth systems, last longer and provide income. Growers utilizing overstory tree systems will have an economic advantage over growers using artificial shadecloth systems.

Understory or companion plants. the range of species which can be grown compatibly with devils club is undoubtedly large.

Modern agriculture generally plants in monocultures, and so we can expect most devil's club plantings to be monocultures. The prickly nature of devil's club does not lend itself well to harvesting companion plants, but to the perceptive and innovative agroforester, economically sound companion crops are likely to be found.

How to produce recumbent stems in commercial plantings. Harvests from commercial plantings would most likely concentrate on recumbent stems and/or ascending stems. One management strategy might be to peg down stalks when long enough and flexible enough. If the goal is to produce as many recumbent stems as fast as possible (typical commercial goals).

If maximizing production of true roots is the goal than perhaps shallow burying of whole stems might induce root formation along the length of the cutting. Such a strategy would take a lot more plant material (linear feet of stems) than propagating from small stem cuttings.

Propagation:

I have found extremely little in textbooks on the propagation of devil's club. Here are some bits that I found, plus reports on my own experience as well as that of several associates.

Hortus Third says *Oplopanax* is propagated by seeds, suckers, and root cuttings.

Arthur Kruckeberg in *Gardening with Native Plants in the Pacific Northwest* says that devil's club can be propagated by seed and by cuttings, but in either case plants are slow to start and that transplanting young rooted plants from the wild produces a larger plant faster.

Richard & Barbara Porter, who have a native plant nursery, Streamside Native Plants, on Vancouver Island have had good success growing plants by fall planting of 4" stem pieces with nodes in sawdust. They have also pegged down ascending stems in their wild patches which then subsequently root. This is a satisfactory propagation method but takes more effort per plant produced. Their experience validates the assumption that we can grow dense nursery beds for layering propagation.

Brent Naylor, of Raymond, Washington has had success with seed. He planted seed in a commercial potting mix in 4" pots and placed them in a semi-protected outside location next to a building where they had some rain protection to keep them from "getting too wet". He had a good germination rate the next spring. At the end of their first growing year they were about 12" tall and pencil diameter. Brent Naylor feels that it is better to pick the berries when they are turning scarlet rather than at late stages of ripening. There is also the practical problem that birds and critters eat the ripe berries and there are simply less around late in the season.

Devil's Club, *Oplopanax horridum*

Michael Pilarski supplied selected propagation material to Fourth Corner Nursery, Bellingham Washington and to Donna Flora Gardens, La Conner, Washington in June 1997. They both had good success rates. The material came from a wildcrafted harvest at a 4,000' elevation stand at the edge of snow melt. The plants were just beginning to break bud. Six burlap bags of harvested stems yielded about 50 choice rooted cuttings and only utilized about 2% of the material collected. Wildcrafters should be alert to the opportunity to obtain planting material when they process.

Richard Haard of Fourth Corner Nursery did an acid bath treatment of devil's club seed and they imbibed nicely after the treatment. They were fall planted in the field. They did not yield a stand, although the reason was unknown. Since seeds are adapted to bird and mammal ingestion and dispersal, they probably like acid treatment.

Propagation with cuttings.

There are many possible parts of the plants to obtain cuttings from: Ascendent stems.

Recumbent stems.

Rooted portions of recumbent stems.

Small buds ("eyes") on recumbent stems.

Small buds ("eyes") on ascendent stems.

True roots

Leaf cuttings

Leaf cuttings with heel.

Cleaning seed.

I have had good luck using maceration and floatation. Rub through a hardware cloth (metal screen) to separate pulp from the seeds and then use running water in a deep container to float off pulp. Wear rubber gloves if you are rubbing flower spikes through hardware cloth to forestall getting stuck with any spines. Seeds are surface dried at room temperature if they are to be stored dry. Ideally they would probably be planted without drying out. Perhaps the best way is to do moist stratification such as is done with ginseng seed. Seed which is stored at warm, dry conditions may get increasingly harder to germinate over time. *Oplopanax horridum* has how many cleaned seeds to the ounce?

Tissue culture may be possible, but I don't know if anyone has worked on this. Tissue culture gives large numbers of small plants at cheap prices. The disadvantage is they are small and take a long time to grow out and usually require several repotting so the eventual cost may not be that much cheaper, if at all. One danger of tissue culture is it can lead to a smaller genetic base.

Selecting superior plants. As in most plant species, we can find and select superior plants from the wild (for qualities we choose) and then vegetatively (or tissue) propagate from them. I doubt any white people have been doing any conscious selecting although native Americans undoubtedly did or still do. Criteria for selection could be higher concentrations of desired constituents,

faster growth, productivity, seed set, hardiness. etc.

Reference Books:

Alaska's Wilderness Medicines: Healthful Plants of the Far North. Eleanor G. Viereck. 1987. Alaska Northwest Books, 22026 20th Ave. SE, Bothell, WA 98021. 107 pp. She covers about 25 plants.

Discovering Wild Plants. Janice J. Schofield. 1989. Alaska Northwest Books, Seattle. 354 pp. A wonderful book for wild plant enthusiasts of Alaska, B.C. or the PNW. A beautifully done book with many color photographs. The text gives much information on traditional and contemporary uses.

Edible and Medicinal Plants of the Rocky Mountains and Neighboring Territories

Terry Willard. 1992. Wild Rose College of Natural Healing, 302, 1220 Kensington Rd. N.W., Calgary, Alberta T2N 3P5, Canada. 278 pp.

Edible and Medicinal Plants of the West

Gregory Tilford. 1997. Mountain Press Publishing, PO Box 2399, Missoula, Montana 59806. (406) 728-1900, 1-800-234-5308. 239 pages. \$21.00.

Medicinal Plants of the Pacific West.

Michael Moore. 1993. Red Crane Books, Santa Fe. 358 pages. \$22.50. Over 300 species of plants are covered, ranging from Baja, California to Alaska. An excellent book, both for its detailed information on little-known native herbs as well as its entertaining, witty style. This is the best book for information on native west coast medicinals I have seen. Up-to-date. Highly recommended. Michael Moore gives the most detailed look at devil's club's medicinal uses of any of the tests reviewed here.

Plants of Coastal British Columbia. Jim Pojar and Andy MacKinnon. 1994. Lone Pine Publishing, Vancouver, B.C. 526 pp. The best field guide for the region. It gives lots of information on First Nations' (indigenous peoples) uses of devil's club.

Devil's Club, *Oplopanax horridum*

ODE TO DEVIL'S CLUB

Oh devil's club - I greet you
and hail your beauty and wisdom.

Oh devil's club - I admire your beauty.
Scarlet berries like blazing jewels in the green forest.
You sprawl, lounging gracefully across the forest floor.
You live in community.
Dense thickets . . . Colonies you grow in.
One or several chance seeds from passing bird or mammal is enough to start a new colony.
Parent plants pushing out stems to fall over, root, grow and fall yet again
... and again... and again.
Networks of crisscrossing stems, alternately lying and rising.
Patches growing outwards and larger with time.

Oh, devil's club -
May your protective influence be upon me,
my loved ones, my home and upon your wild haunts.
May all these new dwellers in your lands come to recognize you
with the knowledge and affection of the native peoples.
Good medicine for the body and for the soul.
Shaman plant and vision plant.
May you sharpen my vision into the unseen realms.
May you help me converse with my plant and animal kin.

Oh devil's club -
May your healing properties help my lungs, my immune system,
my endocrine system and all my body parts and processes.
Grant me greater strength and stamina.

Oh devil's club -
May we honor your spirit as well as your products.
I promise to work with you and for you.
That you may grow more abundant rather than less

Oh devil's club -

