

High_Bush_Cranberry_Research_1993.txt
HIGH BUSH CRANBERRY RESEARCH

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HIGHBUSH CRANBERRY RESEARCH

LATIN NAME: (Two Major Species)

(a) *Viburnum opulus*, var. *americanum* Ait (287-453, 369-148)

(b) *Viburnum edule* (Michx.) Raf. (287-453, 369-148)

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- Vieo (latin) = to tie (because of the pliability of the branches of the European plant 'V. lantana L.') (1-498)
- Edule (latin) = Edible (1-498)
- Opulus = Power or wealth (refers to abundance of foliage of this shrub) (147-99)

OTHER LATIN NAMES:

- (a) *Viburnum trilobum* Marsh (287-453)
- (b) *Viburnum pauciflorum* (287-453), *V. opulus* var. *edule*, *V. acerifolium* (342-842)

COMMON NAMES:

(a) V.O: Highbush Cranberry, Snowball, Wild Guelder-rose, Cranberry-tree (287-453), Viorne Trilobee ou Pimbina (206-162); Cramp Bark, Snowball tree, King's Crown, High Cranberry, Red Elder, Rose Elder, Water Elder, May Rose, Whitsun Rose, Dog rowan Tree, Silver Bells, Whitsun Bosses, Gaitre Berries, Black Haw (141-381); Ts'idipxst (Gitksan, 133-66), Spikst (Nisgha, 242-137), Kalina or Kalinushka (Russian, 215-102); T'elxumes (Plant) and T'els (Fruit) (Kwakiutl, -); Guelder rose, Cranberry tree, Marsh or Water Elder, Gaiter Tree or Gatten, Whitten Tree, Pembina, Pimbina (369-148); Nipimian (Cree, 369-148); Hobblebush, Moosewood, Nannyberry, Sheepberry, Wild Raisin, and Withe-rod (114-59);

(b) V.E: Highbush Cranberry, Moosewood, Squashberry (287-453), Crampbark, Petit Pimbina (206-162);

PLANT DESCRIPTION:

GENERAL:

(a) V.O: 2-6 foot shrub, erect to straggling. Stem yellowish-grey and smooth, to grey and slightly rough, with raised spots. (1-498); A shrub 1- meters tall, stems smooth. (369-148)

(b) V.E: Straggling to suberect shrub, up to 2.5 meters tall, with glabrous branches. (342-842); Straggling shrub 0.5-2 meters the stems often covered with glands.

LEAVES:

(a) V.O: Leaves generally trilobed, the lobes coarsely few-toothed or subentire (287-453). Surface of leaves is shiny, crinkly. Veins mainly palmate. (1-498) Leaves grow in stalked pairs. Some of the leafstalks have small red glands. It is possible that these glands, which only appear when the shrub is not flowering, attract ants and insects which extract nectar from them, and which may then be attracted to, and pollinate, the flowers. (119-290); Leaves like those of the maple 2-5 cm wide, the veins running from the stem, the teeth large, hairy beneath. (369-148); The leaves are readily distinguished, being nearly glabrous, scarcely toothed but conspicuously 3-nerved, and very deeply 3-lobed (much like a maple leaf, hence *opulus*. (1-498)

(b) V.E: Leaves elliptic to suborbicular, shallowly 3-lobed, sharply toothed, commonly with pair of glands near junction with petiole. (342-842). Opposite-leaved. Mature leaves are round in outline but usually with 2 pronounced notches at the outer end, and further sharply serrate. A pair of small, ear-like teeth at the junction of the blade and petiole. Terminal leaves are pointed-lanceolate, and like the others, short-hairy beneath, especially along the larger veins. Leaves turn bright crimson-purple in autumn. (1-498); Has nectar-secreting organs located outside the flower. (EB 5-817); The leaves 5-10 cm often hairy on the veins beneath. (369-148); Simple or, more often, shallowly-lobed leaves. (114-59); Mature leaves are round in outline but usually with 2 pronounced notches at the outer end, and further sharply serrate. A curious feature of these older leaves - useful in recognition - is a small, ear-like teeth at the junction of the blade and petiole. Terminal leaves are pointed-lanceolate, and like the others, short-hairy beneath, especially along the larger veins. Crimson-purple leaves in autumn. (1-498)

FLOWERS:

(a) V.O: Inflorescence with the marginal flowers neutral and enlarged, their corollas generally 1.5 - 2.5 cm wide, the whole inflorescence generally 5-15 cm wide at anthesis. (287-453) Flowers are 3 to 5 inches across, the inner ones very small, but with an outer ring of large, sterile blossoms, containing undeveloped stamens with no pollen and an ovary without ovules. Only the inner, complete flowers provide the nectar for the attraction of insects who are to fertilize them. (141-382) Two kinds in a composite cyme. Outer (sterile) ones are white, 1.5-2.0 cm across, with no stamens or pistals. The inner (fertile) ones are cream-coloured, much smaller, and have 5 yellow stamens and a pistal with 3 stigmas (forms fruit). Both species have a 5 lobed corolla. (206-162); The inner

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flowers are bisexual. Flowers from May to July. (119-290); The flowering stem 2-5 cm long, the outer flowers larger than those in the middle, white. (369-148); Flat clusters of white flowers are terminal on branch ends. Each perfect central flower is very small, with short pistil, and long stamens that project beyond the lobed corolla-tube. Very different are the sterile flowers ranged round the edge of the cluster. They are nearly an inch across, with very broad, flattened lobes of the corolla, and resemble flowers of the garden Hydrangeas. (1-498)

(b) V.E: Inflorescence dense; flowers uniform, perfect, milk-white, stamens included (342-842). Inflorescence with flowers all male & female and alike, their corollas less than 1 cm wide, the whole infl. generally 1-5 cm wide at the anthesis. (287-453) Greenish-white and tubular, arranged in flattened clusters between pairs of leaves along the stem, rather than at the ends of the branches; The flowering stem short, usually less than 50 white flowers. (369-148); The small, 5-petalled white flowers grow in rounded clusters, from June to July or August, followed by fruit. (305-79); Flowers are greenish-white and tubular, arranged in flattened clusters between pairs of leaves along the stem, rather than at the ends of the branches. Flower parts are in 5's, with very short stamens not projecting beyond the mouth of the wide flared, 5-lobed corolla-tube. (1-498)

FRUITS/SEEDS:

(a) V.O: Fruit is a unilocular, 1-seeded drupe with soft pulp, red. (287-453) The fruits ripen quickly, forming a drooping cluster of bright red berries, shining and translucent. (141-382) Fruit hangs on throughout winter; The fruit is a brilliant translucent red, the berries hang on the shrubs all winter. (369-148); Red, acid fruits in drooping terminal clusters. (114-59);

(b) V.E: Fruit red or orange, 1-1.5 cm long, subglobose, acid, juicy, with large, flattened stone. (342-842) Fruit hangs on throughout winter; The fruit light red not translucent. (369-148); Large, red, acid fruits borne in small clusters at the leaf nodes. (114-59); The fruit is borne in September and October. The berries often stay on the plant during the winter if the birds have not cleared the bushes, and their flavour is improved by the first frost. (305-80)

HABITAT:

(a) Circumboreal species of moist woods. (287-453); Moist woods and fields. (369-148);

(b) Woods, thickets, to at least 800 meters. (342-842) Widespread in moist woods and swamps. (287-453) In cold mountain woods. (369-148);

RANGE:

(a) V.O: Found in copses and hedgerows throughout England, though rare in Scotland, and also indigenous to North America. (141-381) In northern and western parts of Asia. (119-290); Nfld. to B.C., s. to Pa., n.O. and Wash. (369-148);

(b) V.E: Lab. to Alaska, south to Pa., Mich., Colo. and Ore. (369-148);

CLASSIFICATION:

CLASS: ANGIOSPERMAE

SUBCLASS: DICOTYLEDONEAE

SUPERORDER: ASTERIDAE

ORDER: DIPSACALES (Teasel)

- A small order of four families of lowering plants including about 40 genera and 1,100 species, chiefly herbs or shrubs and, rarely, small trees or climbers. (EB-5-815)

FAMILY: CAPRIFOLIACEAE (Elders & Honeysuckles)

- About 18 genera and 500 species, distributed primarily in the North Temperate Zone, especially in Chbina and the Himalayas, but extending to the mountains of the tropics, South America, and Australasia. (EB-5-817) Note: Sambucus has been treated in some classifications as a segregate family Sambucaceae. (EB-5-818)

- About 18 genera, 450 species. (118-260)

SPECIES: Viburnum

- 200 species worldwide (118-260)
- 8 species in Canada.(114-59)
- 200 species of Viburnum worldwide. (EB X-416)

PLANT USES

TOXICITY:

- None

POISON SYMPTOMS:

- None

TREATMENT:

- None

CONSTITUENTS:

- 1931 M. Grieve, A Modern Herbal, 382. "The active principle of Cramp Bark is the bitter glucoside Viburnine; it also contains tannin, resin and valerianic acid." (141-382) V.O.
- 1931 M. Grieve, A Modern Herbal, 382. "Its (V.o.) constituents are identical with the species of Viburnum that is more widely used and is an official drug in the U.S. viz, Viburnum prunifolium or Black Haw, though Cramp Bark contains 1/3 the resin contained in Black Haw and its similar properties are considered much weaker." (141-382)

- 1974 Alma Hutchens, Indian Herbage of North America, 101. "Vitamin K and minerals." (215-101).
- 1978 Bradford Angier, Field Guide to Medicinal Wild Plants, 240. "The berries, by weight, are about 1/1000 pure vitamin C." (201-240)
- 1979 Barrie Kavasch, Native Harvests, 18. "The BERRIES are high in Vitamin C." (157-18)

FOOD USES:

EUROPEAN FOOD USES:

- 1668 Marie de I'Incarnation Quebec 346. "We also make jam from gooseberries and from piminan, a wild fruit that sugar renders very pleasant." (369-148)
- 1749 Kalm Fort St. Frederic October 11th. 565. "The cranberry tree, a kind of opulus, flourished in some places on the shore. We consumed great quantities of the berries which were ripe. They had a pleasant acid flavor and tasted right well. Even if we had some other fruit, we should not have scorned these." (369-148)
- 1760 Jefferys New France 41. "The Pemine, another plant peculiar to this country, is a different shrub, growing along the sides of rivulets, and in meadows, which also bears a clustering fruit of a very sharp and stringent taste." (369-148)
- 1836 Trail Backwds Can. 61. "For richness of flavour, and for beauty of appearance, I admire the high-bush cranberries; these are little sought after, on account of the large flat seeds, which prevent them being used as jam: The jelly, however, is delightful, both in colour and flavour...The berries...when just touched by the frosts are semi-transparent, and look like pendant bunches of scarlet grapes...I was tempted one fine frosty afternoon to take a walk with

my husband on the ice..recognised...high-bush cranberries...stripped the boughs..hastened home, and boiled the fruit with some sugar to eat at tea with our cakes. I never ate anything more delicious than they proved; the more so perhaps from having been so long without tasting fruit of any kind." (369-148)

- 1852 Richardson "V. edule, the 'Pembina' of the voyagers, was traced by us northward to the Elk River. It is much less common than the preceeding (The true wild cranberry) and has a more fleshy and less acid fruit, of an orange-red colour. The voyagers relish this fruit; and it has given name to many of the rivers of Rupert's land. It is the 'Nipi-minan (water-berry) of the Crees." (305-80)

- 1931 M. Grieve, A Modern Herbal, 382. "...In Siberia the berries used to be, and probably still are, fermented with flour and a spirit distilled from them. They have been used in Norway and Sweden to flavour a paste of honey and flour." (141-382) (V.O.)

- 1973 Alan Hall, The Wild Food Trail Guide, 153. "Berries improved in flavour by freezing." (79-153).

- 1973 Alan Hall, The Wild Food Trail Guide, 153. "Boiling the fruit with sugar and lemon or orange peel and juice, and then straining, produces a juice that is rich in Vitamin C and can be diluted and used as a beverage. The juice can also be made into a beautiful clear jelly of excellent flavour. Commercial pectin is required. The juice can also be fermented into wine." (79-153)

- 1973 Alan Hall, The Wild Food Trail Guide, 153. "The juice of the berries can be fermented to make an excellent wine." (79-253).

- 1973 Euell Gibbons, Stalking the Healthful Herb, 189. "I thought it would be an excellent table wine to serve with meats, fowl, or fish, but my wife detested its flavor, and my friends seem about equally divided on its merits. Let's just say that it is a good wine if you happen to like it." (4-189)

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- 1973 Euell Gibbons, *Stalking the Healthful Herb*, 186. "The Old World berries were too bitter to be really palatable, but many northern peoples ate them anyway, probably more for their health-giving benefits than for their flavor." (4-186)
- 1974 Alma Hutchens, *Indian Herbarology of North America*, 102. "In Russia it is supplied by commercial farms to the food industry which uses an extract and the berries for Candy, fillers, pastry, marmalade and aromatics. Pharmacy uses the bark, folk medicine, every part of Kalina." (215-102)
- 1974 J.E. Underhill, *Wild Berries of the Pacific Northwest*, 122. "My only major personal experiment with squashberry was in winemaking. There it was an utter disaster! The finished product, even at a year's maturity, had a peculiar disagreeable flavour so bad that I gladly consigned it to the toilet." (37-122).
- 1974 J.E. Underhill, *Wild Berries of the Pacific Northwest*, 122. "The berries are tart when raw, but when cooked with sugar make a sauce fairly closely resembling that from the quite unrelated cranberry." (37-123)
- 1976 Lewis Clark, *Wild Flowers of the Pacific Northwest*, 498. "Red fruit yields a tart but pleasing clear jelly, resembling that of the festive cranberry." (1-498)
- 1979 Turner & Szczawinski, *Edible Wild Fruits & Nuts of Canada*, #3, 61. "The fruits of High-bush cranberry and squashberry are juicy, but quite acid. When first mature, they are hard, crisp, and sour, but after being subjected to a heavy frost they become soft and quite palatable, though still tart. They are best when cooked as a sauce or jelly, and indeed, when properly prepared, are equal in flavour to the true wild cranberry (*Vaccinium macrocarpon* and *V. oxycoccus*)." (114-61).
- 1979 Turner & Szczawinski, *Edible Wild Fruits & Nuts of Canada*, #3, 59. "All 8 species in Canada have edible fruit. The fruits range in colour from red

to bluish black and all are edible, although some are better flavoured than others." (114-59)

- 1979 Turner & Szczawinski, Edible Wild Fruits & Nuts of Canada, #3, 63. "The Norwegians and Swedes ate High-bush Cranberries cooked with flour and honey, and distill a spirit from them. They were a favorite dish of Maine lumbermen, who used to eat them with molasses." (114-63)

PECTIN NEEDS:

- 1976 Eugene Kozloff, Seashore Life of Puget Sound, 151. "Commerical pectin is required for jelly." (99-151)

- 1981 Robert Hendrickson, The Berry Book, 84. "Berries are high in pectin." (207-84)

NATIVE USES OF FOOD:

- 1926-27 Densmore CHIPPEWA 307. Fruit of *Viburnum pauciflorum* (V. edule) eaten. (369-148)

- 1923 H. Smith MENOMINI 63. "These are rather scarce on the Menomini reservation, but are favored as a fruit whenever they can be found." (369-148)

- 1973 Nancy J. Turner, The Ethnobotany of the Southern Kwakiutl Indians, 281. "KWAKIUTL: Gathered in August when still green and steamed in a specially made box until they were soft and red, then poured into an empty oil box, covered with about four buckets of water, sealed with grease, and stored for winter. They were also preserved by steaming them with alder branches, fern, and skunk cabbage leaves in steaming pits for one or two days, and then covering them in an oil box with a whitish mixture of warm oil and water. Only a man, his wife, and their children and close relatives would eat cranberries preserved in this way. Roast salmon was eaten afterwards to take the taste of

oil out of their mouths. At feasts, only fresh ripe cranberries were eaten. Each person would dip bunches of them into oulachen grease and suck the edible parts, throwing the stems into the fire." (150-281)

- 1977 Kim Williams, *Eating Wild Plants*, 93. "The fruit has been used for jelly, in pemmican, ground up into a relish, cooked into a meat sauce to serve with gamne, and as a tea." (93-139)

- 1977 Virgil Vogel, *American Indian Medicine*, 296. "The leaves of this and other species were used as tea by Indians and settlers in colonial days." (146-296)

- 1978 Nancy J. Turner, *Food Plants of B.C. Indian's*, Part 2, 136. "The tart berries were harvested in late fall, after they had been softened and sweetened by the frost. *V. edule* fruits were used by all of the Interior Indian groups, wherever they were available. *V. opulus* berries were eaten by the Shuswap and Kootenay, the only groups having access to them." (103-136)

- 1978 Nancy J. Turner, *Food Plants of B.C. Indian's*, Part 2, 136. "The NISKA, following the traditions of the Coastal peoples, boiled the berries and mixed them with oil. In winter, they sometimes made a kind of 'ice-cream' (not the same as the "Indian ice-cream" made from soapberries) by whipping them to a froth with eulachon oil and freshly fallen snow. Today the berries are used everywhere for jams and jellies." (103-136)

- 1978 Nancy J. Turner, *Food Plants of B.C. Indian's*, Part 2, 136. "High-bush cranberries were harvested in bunches or, if at an advanced stage of ripeness, could be shaken onto mats or bark trays. Some people ate them raw, chewing them, swallowing the juice and discarding the large, flat seeds. The THOMPSON people named the berries from the loud clicking sound the seeds make when chewed. The CARRIER ate them with bear grease. Sometimes, if they ripened early enough, they were mixed with fresh Saskatoon berries to make the latter more digestible. Father Morice notes that "despite its (the fruit's) pungency it is much appreciated by the native palate (referring to the Carrier)." (103-136)

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- 1979 Turner & Szczawinski, Edible Wild Fruits & Nuts of Canada, #3, 63.
"KWAKIUTL Indians: A box of squashberries were considered equal in value to two pairs of blankets." (114-63)
- 1979 Cruikshank ATHAPASKAN. "Fish eggs you can dry, or you can mix eggs with high bush cranberries. They make special willow net to hang eggs to dry. When dry right through, put in moose stomach which is stretched and dried like plastic." (ATHAPASKAN WOMEN: Lives and Legends. National Museum of Man, Mercury Series, Ethnology Service Paper 57. Ottawa. 29, 32.) (305-80)
- 1980 Gitksan Elders, Gathering What the Great Nature Provided, 66. "The GITKSAN preserved well in grease." (133-66)
- 1982 Nancy J. Turner, Food Plants of B.C. Indian's, Part 1. "V.E.: When the berries are unripe, they are hard and extremely acid; later, especially after a frost, they become soft and palatable, though tart. They contain a large, flattened seed." (44-127)
- 1982 Nancy J. Turner, Food Plants of B.C. Indian's, Part 1, 127. "V.E.: The acid berries were eaten in large quantities by the central and northern Indian groups of the B.C. Coast, and were also eaten, when possible by Coast Salish groups such as Sechelt, Squamish, and Comox. They are becoming increasingly difficult to obtain, especially on the Queen Charlotte Islands, where they are virtually extinct over large areas." (44-127)
- 1982 Nancy J. Turner, Food Plants of B.C. Indian's, Part 1, 129. "V.E: Most groups pick them (the berries) in late summer or early autumn when the berries are just turning red and are still hard and sour. Uncooked, or steamed for a short time, they are placed in tall cedar boxes, covered with warm water, and allowed to stand for several months. During this time, they become soft and red. In winter, before they freeze, the water is drained off and the berries are mixed with eulachon grease and other types of berries and eaten with spoons. The KWAKIUTL also preserved them by steaming them for one or two

days in pits lined with alder branches, fern fronds, and skunk cabbage leaves, before mixing them with a whitish mixture of eulachone grease and water. Only a family group (a man, his wife, children, and close relatives) would eat cranberries preserved in this manner. At feasts, the KWAKIUTL served mainly fresh, frost-ripened cranberries, picked in bunches with stems still attached. The bunches were dipped in grease, the juice and edible portion sucked, and the stems, rkins, and seeds discarded." (44-129)

- 1982 Nancy J. Turner, Food Plants of B.C. Indian's, Part 1, 129. "V.E.: High-bush cranberries were considered to be a prestigious food among the HAIDA, and probably among other groups as well, patches of high-bush cranberry bushes were "owned" by certain high-class people within a village. Only these people were allowed to pick the fruit. Boxes of preserved high-bush cranberries were a valuable trading and gift item. Ethnological accounts and recorded texts and myths make frequent mention of this use, particularly among the northern groups - the HAIDA and the TSIMSHIAN. They are the most frequently mentioned plant food in Haida myths; they were associated with salmon, and were thought to have been the food of supernatural beings." (44-129)

- 1990 Nancy J. Turner, Thompson Ethnobotany, Royal British Columbia Museum, 201. "The fruits are clustered and as large as one's small fingernail, with thin skins and flat seeds. They are juicy and very sour. They were eaten, and were sometimes dried for storage, but AY said that they take a long time to dry. They were sometimes cooked in soups. AY used to gather them on the Hudson's Bay trail above Spuzzum and make them into jelly. Sometimes she made a sauce from them by straining out the seeds and adding cornstarch to them....the fruits were eaten by both divisions of Thompson." (450-201)

RECIPES:

(1) HIGH-BUSH CRANBERRY SAUCE: (114-62)

High-bush cranberries	4 cups
(Washed and de-stemmed)	
Water	1/4 cup

Gelatin	1 tbsp
Sugar	1 cup

Place berries and water in a large saucepan, heat, and simmer until juice is free (about 10 minutes). Press through a sieve to remove skins and seeds. While still hot add gelatin and sugar and stir until dissolved, then cool. Serve with wild game or lamb. This sauce can be stored in the refrigerator and used as needed. Makes about 3 cups of sauce.

(1979 Turner & Szczawinski, Edible Wild Fruits & Nuts of Canada, #3, 62)

(2) HIGH-BUSH CRANBERRY JELLY: (114-62)

High-bush cranberries	8 cups
(Washed and de-stemmed)	
Water	1 cup
Sugar	

Place berries and water in a large saucepan, heat, and simmer until juice is free (about 10 minutes). Place in a fine nylon jelly-bag and allow juice to drain for several hours, or until dripping ceases. Measure juice and boil in saucepan, uncovered, for about 5 minutes. Measure sugar, allowing 6 cups of sugar for every 4 cups of juice, add to juice, stir until dissolved, then bring to a boil and cook, stirring constantly, until jelly sets when a small amount is tested on a cold plate. Pour into hot, sterilized glasses, cool, seal, and label. Store in a cool place. Makes approximately 6 medium-sized jars of a tangy, dark-red jelly.

(1979 Turner & Szczawinski, Edible Wild Fruits & Nuts of Canada, #3, 62)

(3) HIGH-BUSH CRANBERRY JELLY: (204-27)

Bring each 2 cups (of cranberries) to a boil in 3 cups of water. Mashing them as they cook, simmer for 5 minutes. Then strain. Add 2/3 cup of sugar to every cup of resulting juice and bring to a bubble. Then pour into hot sterilized glasses and seal immediately.

(1972 Bradford Angier, Feasting Free on Wild Edibles, 27.)

(4) HIGH-BUSH CRANBERRY JUICE: (4-187)

Fill a 6-quart kettle two-thirds full of berries and just cover with water. With a potato peeler, shave the outside colored part of an orange rind into the kettle, then add the juice of the orange. The orange peel and juice is to improve the aroma, and is quite necessary, as the guelder-rose doesn't smell like a rose. Both the flowers and the crushed berries of *V. opulus* are ill-smelling to most noses, but the orange oil in the peel masks this bad smell, or rather, blends with the odor of the berries and transforms it into a bearable fragrance. Simmer the berries for about 3 minutes, then crush with a potato masher, stir to loosen any pulp that has stuck to the bottom, simmer 2 minutes more, then strain through a jelly bag or two thicknesses of cheesecloth. Reheat the juice just to boiling, then pour into sterilized bottles and seal with crown caps. This juice contains so much acid and other flavors that it must be treated like lemon juice or like the concentrated juices that you buy at the supermarket. Mixed with 2 parts water to 1 part juice, and sweetened to taste with sugar syrup, it makes a dandy "Cranberry" cocktail that is loaded with vitamins to protect your health. (1973 Euell Gibbons, *Stalking the Healthful Herb*, 187.)

(5) Highbush Cranberry Jelly: (4-187)

Prepare the juice exactly as directed above (#4), strain it into a mixing bowl, and set it in the refrigerator overnight to settle. Next day carefully dip off 4 cups of juice, stir in 1 package commercial powdered pectin, and bring to a boil. The instant it boils, stir in 5 cups of sugar, bring back to a boil, and boil hard for 1 minute, then pour into straight-sided, half-pint jars and seal with two-piece metal lids. This jelly has a full-bodied flavor that makes it go very well with meats or fowl, but it can also be eaten with hot biscuits, muffins or rolls, or just spread on an ordinary piece of toast. (1973 Euell Gibbons, *Stalking the Healthful Herb*, 189.)

(6) Highbush Cranberry Catsup: (247-86)

6 lbs of highbush cranberries	1 tablespoon of cinnamon
1-1/4 lbs sweet white onions	1 tablespoon allspice
3 cups of water	1 tablespoon salt
3 cups of mild vinegar	2 tablespoons celery salt
6 cups of sugar	1-1/2 teaspoons pepper
1 tablespoon cloves	

Cook berries and onions in the water until soft. Put through a sieve and return the pulp to saucepan. Add remaining ingredients. Bring to a boil, reduce heat and cook until thick and catsuplike in consistency. Stir frequently to keep from sticking. Pour into sterilized canning jars and seal immediately. Process for 5 to 10 minutes in a boiling water bath.

(1982 Alaska Magazine, Alaska Wild Berry Guide & Cookbook, 86.)

OTHER RECIPES:

- Squashberry Sauce (376-294)
- Squashberry Jelly (376-294)

MEDICINE:

NATIVE MEDICINAL USES:

- 1915 Speck PENOBSCOT 310. "High-bush cranberries...are steeped and drunk for swollen glands and mumps. (Also a Malecite remedy)"...316 MONTAGNAIS. "Plant is boiled and the mess rubbed in the eyes for sore eyes." (369-148)
- 1928 H. Smith MESKWAKI 208. "(Viburnum opulus L. americanum). Specimen 3618 of the Dr. Jones collection is doubtfully identified as the root of this species and...'used when in cramps all over'. It is boiled and drunk by one who feels pain over his entire body." (369-149)

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- 1932 H. Smith OJIBWE 361. "The Pillager Ojibwe used the inner bark as a physic, and also drank the tea to cure cramps in the stomach. Among the white men, *Viburnum opulus* is considered to be the same as *Viburnum prunifolium*, only less potent. It is recommended as an antispasmodic in asthma, hysteria, puerperal convulsions, and dysmenorrhea." (369-149)

- 1977 Virgil lVogel, American Indian Medicine, 296. "V.O.: Lloyd reported that Indians used a decoction of high-bush cranberry bark as a diuretic. Pills and plasters were devised from the plant and the bark was smoked by some western Indians in lieu of Tobacco....Dr. Millspaugh asserted (1887) that this species was "now proving valuable in many forms of uterine affections and puerperal diseases."....Speck reported that the PENOBSCOT and MALECITE Indians steeped and drank *V. opulus* for swollen glands and mumps, although he did not name the part used. The PILLAGER OJIBWAS used the inner bark as a physic and drank a tea of it for stomach cramps. A decoction of it was used by the MESKWAKIS for cramps or 'pain over the whole body.'" (146-296, 147-99, 158-26)

EUROPEAN MEDICINAL USES:

- 1868 CAN. PHARM J. 6; 83-5 The bark of the high-bush cranberry, *V. opulus*, included in list of Can. medicinal plants. (369-148)

- 1870 Briante 39. "Whooping cough, take two ounces of Wild snow ball bark, and steep it in a quart of water. Dose, one table-spoonful, three times a day..95. Secative, astringent adn expectorant." (369-148)

- 1892 Millspaugh 74. "The High Cranberry (*Viburnum opulus*), now proving valuable in many forms of uterine affections and puerperal diseases." (369-148)

- 1925 Wood & Ruddock. Cramps in the legs..make a strong tea of cranberry bush bark. Drink a third of a cupful, will stop cramps in 20 minutes. Best to take it night and morning for several weeks, the trouble seldom returns. Also bark of root of black haw. *V. prunifolium*. (369-148)

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- 1931 M. Grieve, A Modern Herbal, 382. "USP/NF: The bark, known as Cramp Bark, is employed in herbal medicine. It used formerly to be included in the U.S. Pharmacopoeia (1894-1916), but is now omitted though it has been introduced into the National Formulary (1916-1960) in the form of a Fluid Extract, Compound Tincture and Compound Elixir, for use as a nerve sedative and anti-spasmodic in asthma and hysteria." (141-382)
- 1931 M. Grieve, A Modern Herbal, 382. "In herbal practice in this country (England) its (the BARK) administration in decoction and infusion, as well as the fluid extract and compound tincture is recommended. It has been employed with benefit in all nervous complaints and debility and used with success in cramps and spasms of all kinds, in convulsions, fits and lock-jaw, and also in palpitation, heart disease and rheumatism. The decoction (1/2 oz. to a pint of water) is given in tablespoon doses." (141-382)
- 1955 Mockle Quebec transl. 85. "The bark is used in treating functional uterine troubles. It contains viburnin and salicoside." (369-149)
- 1973 Carrier Linguistic Committee, Plants of Carrier Country, 77. "The stem of the high-bush cranberry looks like a willow stem. The people make medicine with its stem by boiling it and drinking the water. This is used for things like coughs. When the berries come, they are in bunches. They make jelly with it. It's good when people get hungry." (280-77)
- 1973 Euell Gibbons, Stalking the Healthful Herb, 191. "The dried bark is nearly odorless, and the taste is astringent and decidedly bitter. Its active principle is a bitter glucoside called viburnin....Pharmacists manufacture tinctures and elixirs from this bark, but for home use it is usually taken as an infusion, or tea. A level tablespoon of the bark, cut fine, is covered with a pint of boiling water and allowed to infuse for 1/2 hour, then strained. This is taken cold, a whiskey glassful at a time, until the cramps disappear." (4-191)

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- 1973 Euell Gibbons, Stalking the Healthful Herb, 185. "Chaucer calls the fruit "gaitre berries" and lists them among the plants that "shal be for your hele" and recommends that you "picke hem right as they grow and eat hem in," an excellant way of being sure that you are taking full advantage of this berry's not inconsiderable vitamin C content." (4-185)

- 1973 Euell Gibbons, Stalking the Healthful Herb, 189. "It is listed (in the National Formulary) as an antispasmodic, and its chief use has been as a uterine sedative to allay the pains that sometimes accompany the menstrual period. Its usefulness in this condition was apparently discovered independently by Europeans, Asiatic tribes, and American Indians. However, this medicinal bark is not solely a woman's remedy, for it has been used as an antispasmodic in treating asthma, epilepsy, and convulsions, and even as a preventive of muscular cramps or "charley horses"." (4-189)

- 1974 Alma Hutchens, Indian Herbalogy of North America, 101. "Antispasmodic, nervine, tonic, astringent, diuretic. Giving relief to cramps and spasms of involuntary muscular contractions such as in asthma, hysteria; cramps of female during pregnancy, preventing the attack entirely if used daily for the last two or three months of gestation. Steep 1 teaspoonful of the cut bark in 1 cup of boiling water for 1/2 hr.; when cold, drink 1 or 2 cupfuls a day. Of the tincture, 1'2 fl. dram." (215-101)

- 1974 Alma Hutchens, Indian Herbalogy of North America, 102. "EXTERNAL USE: Seasonal but worth remembering. The low cranberry (and probably the high cranberry will have the same results) is known to be direct medication for dangerous erysipelas. If applied early this malady yields at once. Also for malignant ulcers and scarlet fever when applied to the throat. Pound the berries and spread them in a fold of old cotton cloth and apply over the entire diseased surface and the inflammation will speedily subside." (215-102)

- 1974 Alma Hutchens, Indian Herbalogy of North America, 102. "HOMOEOPATHIC CLINICAL: Tincture of fresh bark, collected in October or November - after-pains, Cough (of pregnancy), Cramps, Dysmenorrhoea (spasmodic, neuralgia,

membranous), Ears (painful), Epididymitis, Headache, Hysteria, Labour pains (false), Lumbago, Menstruation (painful), Miscarriage, Ovaries (pain in), Paralysis, Uterus (cramps in, bearing down in)." (215-102)

- 1977 Virgil J. Vogel, American Indian Medicine, 296. "The commercial supply is reported to come from wild plants in the northern states." (146-296)

- 1977 Bianchini & Corbetta, Health Plants of the World, 148. "The drug (from the bark) is reputed to have a depressant action on the uterus that is due to the presence of an essential oil. It is recommended for the treatment of menopausal disturbances and is used in gynaecology. Herbalists employ the Guelder Rose for asthma and to relieve cramp in the extremities because of its fast action." (90-148)

- 1978 Bradford Angier, Field Guide to Medicinal Wild Plants, 240. "Women afraid of miscarriage often took a teaspoon of the extract 3 times daily for 5 or 6 weeks before the expected event. It was also used to offset nervousness, weakness, to treat uterine infections, painful menstruation, as a kidney stimulant, and even for asthma." (201-240)

- 1978 Jackson & Prine, Wild Plants of Central North America for Food & Medicine, 25. "The bark is a powerful anti-spasmodic and nervine, effective in convulsions, cramps, and all types of spasm. It has been beneficial in cases of fits, lockjaw, palpitation, heart disease, rheumatism, asthma and hysteria. Boil 1/2 ounce of dry bark in 1 pint of water." (109-25)

- 1979 Nelson Coon, Using Plants for Healing, 206. "BARK is antispasmodic and uterine sedative, effective in cramps, convulsions, and spasms. Used to treat nervous complaints, debility, and in connection with other drugs, "pulpitation, heart disease, and rheumatism", says Grieve's Herbal." (134-206)

- Decoction: 1/2 oz of bark in 1 pint of water. Dose: 1 tbl, taken frequently as needed. Tincture: 4 oz bark in a pint of alcohol (1 teaspoon per dose).

RUSSIAN MEDICINAL USES:

- 1974 Alma Hutchens, Indian Herbalogy of North America, 102. "White Russia especially has a very impressive list of uses. Berries are rich in vitamins, especially C & K, and minerals. They are used alone, fresh or dried, with honey for high blood pressure, heart conditions (recommended with the seeds), cough, cold, tubercular lungs, shortness of breath, kidney; bladder and stomach conditions, bleeding, stomach ulcers. A decoction of the flowers for coughs, cold, fever, sclerosis, lung tuberculosis, stomach sickness (including stomach cancer). EXTERNALLY: Children and adults are bathed with a strong decoction of the flowers for tubercular skin. Eczema and various other skin conditions. For scrofula a decoction of both berries and flowers in 1-10 parts, used as a tea. CLINICALLY: Prescribed in doses of 20-30 drops, two to three times a day, in cases of female bleeding, hysteria, cramps, etc." (215-102)

CHINESE MEDICINAL USES:

- 1973 Li Shih-chen, Chinese Medicinal Herbs, 453. "Viburnum opulus (Hsueh-ch'iu): This 'snowball' plant is mentioned in the Kuang-chun jang pu, but is not used medicinally. It is known in Europe as the Gulder Rose, but in China it is confounded with the Hydrangea, which is called 'Yang-hsiu-ch'in', and which also is not used medicinally. This confounding is liable to lead to disastrous results, since the leaves of Viburnum are said to be emetic and drastic." (343-453)

- 1973 Li Shih-chen, Chinese Medicinal Herbs, 453. "Viburnum dilatatum (chia-mi): Also called 'Hsi-mi'. The leaves are like to those of Hibiscus syriacus, and the fruits resemble those of Deutzia gracilis, red in color and sweet in taste. The tree grows in mountain valleys. The fiber of the internal bark is used in making ropes. The twigs and leaves are used in making medicine, and are considered anthelmintic and corrective. A decoction is used as a wash to maggoty sores, destroying the maggots, and acting as an astringent and stimulant to the sore." (343-453)

INDIAN (AYURVEDIC) USES:

- 1986 Dr. Vasant Lad & David Frawley, The Yoga of Herbs, 199. "Viburnum opulus (Crampbark): Bitter & astringent in taste, Energy (heating), P.D. Effect (pungent), Dosha (KV-P+), Actions (Emmenagogue, astringent, antispasmodic)." (396-199)

COLLECTING & DRYING:

- 1931 M. Grieve, A Modern Herbal, 382. "THE BARK is collected chiefly in northern Europe and appears in commerce in thin strips, sometimes in quills, 1/20 to 1/12 inch thick, greyish-brown externally, with scattered brownish warts, faintly cracked longitudinally. It has a strong, characteristic odour and its taste is mildly astringent and decidedly bitter." (141-382)

- 1973 Euell Gibbons, Stalking the Healthful Herb, 190. "The best time to gather the bark is in the spring, when the rising sap causes it to peel easily...With a sharp pocketknife make a cut all around the stem, through the bark, every six inches, then slit each of these sections down one side and remove the bark by sliding your knife under it. Often these small sections of bark can be removed whole; they will curl back together as they dry, leaving you with quill-like tubes of bark. Dry the bark thoroughly in a warm room, then keep in a covered container until used. Renew your supply yearly, for it loses its strength with age." (4-190)

- 1978 Jackson & Prine, Wild Plants of Central North America for Food & Medicine, 25. "The bark should be collected in warm spring weather, thoroughly dried in a warm, well-ventilated place, then stored in airtight containers." (109-25)

- 1979 Barrie Kavasch, Native Harvests, 18. "GATHERING BARK: The bark should be gathered in the spring. Change the bark each year." (157-18)

MATERIAL:

IMPLEMENTS:

- 1931 M. Grieve, A Modern Herbal, 382. "The wood, like that of the Spindle Tree and Dogwood, is used for making skewers." (141-382)
- 1977 Bianchini & Corbetta, Health Plants of the World, 148. "In Japan, the white, fine-grained, flexible wood of the branches is used mostly for toothbrushes." (134-206)
- 1979 Nancy J. Turner, Plants in B.C. Indian Technology, 272. "The KOOTENAY made pipe stems from the hallowed out branches." (137-272)

SMOKING MIXTURE:

- 1977 Virgil Vogel, American Indian Medicine, 296. "V.O.: The bark was smoked by some western Indians in lieu of Tobacco." (146-296)
- 1978 Nancy J. Turner, Food Plants of B.C. Indian's, Part 2, 136. "The CARRIER people formerly smoked the bark, but this practice was not widespread." (103-136)
- 1979 Turner & Szczawinski, Edible Wild Fruits & Nuts of Canada, #3, 63. "The bark of the high-bush cranberry and squashberry was sometimes used in native smoking mixtures." (114-63)

DYEING:

- 1931 M. Grieve, A Modern Herbal, 382. "They (the berries) turn black in drying and have been used for making ink." (141-382)
- 1975 Dr. Triska, The Hamlyn Encyclopedia of Plants, 290. "The fruits contain a red dye." (V.O.) (119-290)

CULTIVATION:

- 1981 Robert Hendrickson, The Berry Book, 84. "V. opulus: The most widely grown cranberry substitute in America, and bushes are offered by several nurseries (including Southmeadow, Spring Hill, Field, and Ackerman). Exceptionally easy to grow and is a worthy addition to any shrub border; it will do well in sun or partial shade, and its scarlet berries are one of the few fruits that are rarely bothered by birds...thrives in a fairly moist, loamy soil, not needing an acid soil like true cranberries. Little cultivation is needed to grow it, and pruning consists merely of cutting some of the older shoots to the ground in the winter to encourage the growth of new shoots. The bush can be increased from seed or from cuttings of ripe wood taken early August." (207-84)

HISTORY/BELIEFS:

HORICULTURE:

- 1931 M. Grieve, A Modern Herbal, 382. "The garden variety, Viburnum sterile, with snowball flowers, does not produce the snowy fruit of the wild species." (141-382)

- 1973 Oliver Medsger, Edible Wild Plants, 85. "V. opulus is the parent of the 'Snowball', which by careful selection has been made to produce only sterile flowers, forming the well known clusters of the 'Snowball Bush'." (7-85)

- 1974 Alma Hutchens, Indian Herbalogy of North America, 102. "Very important plant in Russia, and is included in a popular song. The Ukraine, White Russia, and Siberia supply Russia commercially." (215-102)

- 1978 Alex Bristow, The Sex Life of Plants, 157. "A spectacular example of a plant that employs sexless but attractive flowers to drum up patrons for sexual but dull ones. Bears heads of pallid, insignificant, fertile flowers

surrounded by a border of sterile but much larger flowers, sparkling white and very attractive, both to insects and to humans." (142-157)

NOMENCLATURE:

- 1853 Reid, 31. "The name, however, by which it is known among the Indians of Red River is 'anepeminan,' from 'nepen,' summer, and 'minan', berry. This has been corrupted by the fur traders and voyageurs into 'Pembina': hence the name of a river which runs into the Red and also the name of the celebrated but unsuccessful settlement of 'Pembina' formed by Lord Selkirk many years ago." (369-148)

- 1913 Hodges & White 384. "Pembina. A Canadian name for the acid fruit of *Viburnum opulus*, the high-bush cranberry...The word is a corruption of Cree nipiminan, 'watered-berry' i.e. fruit of a plant growing in, or laved by, water." (369-148)

- 1931 M. Grieve, A Modern Herbal, 382. "The name Guelder comes from Gueldersland, a Dutch province, where the tree was first cultivated. It was introduced into England under the name of 'Gueldres Rose'." (141-382)

- 1931 M. Grieve, A Modern Herbal, 382. "The 'Gaitre-Beries' of which Chaucer makes mention among the plants that 'shal be for your hele' to 'pickle hem right as they grow and ete him in,' are the deep red clusters of berries of the Wild Guelder Rose (*Viburnum Opulus*, Linn.)." (141-381)

RELATIONSHIP TO OTHER LIFE-FORMS:

- 1978 Nancy J. Turner, Food Plants of B.C. Indian's, Part 2, 136. "The Shuswap note that willow grouse and other birds like to eat the berries." (103-136)

AGE:

- 1982 Encyclopedia Britannica, Volume 5, 817. "Leaf impressions of *Viburnum vetus* were found in the Cretaceous deposits (about 100,000,000 years old) in Portugal. Fossil leaves of *Viburnum* are fairly widely reported from Upper Cretaceous deposits of the United States and Europe. This genus was exceedingly widespread and characteristic of Tertiary times (between about 7,000,000 and 65,000,000 years ago), and both pollen and leaves occur in many American, European, and Asiatic deposits." (EB 5-817)

STORIES:

- 1977 Bianchini & Corbetta, *Health Plants of the World*, 148. "'White as announcing angels, and breathing a fragrance of lemons.'" (Marcel Proust) (90-148)

ILLUSTRATIONS:

(a) *Viburnum opulus*:

(b) *Viburnum edule*:

- Range map & fair B/W picture (342-842)
- Excellent B/W picture (305-79)
- Excellent B/W picture (376-293)

The information in these articles is primarily for reference and education. They are not intended to be a substitute for the advice of a physician. The instructor does not advocate self-diagnosis or self-medication; He urges anyone with continuing symptoms, however minor, to seek medical advice. The reader should be aware that any plant substance, whether used as food or medicine, externally or internally, may cause an allergic reaction in some people.

Maurice L.B. Oates Jr., M.A.
(Ya'-ga-hlo'o)

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LATIN NAME:

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(a) *Viburnum opulus*, var. *americanum* Ait

(b) *Viburnum edule* (Michx.) Raf.