

## CASCADE BILBERRY

*Vaccinium deliciosum* Piper

plant symbol = VADE

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Abrams & Ferris (1960)

### Alternate Names

Blue-leaf huckleberry, little huckleberry, Rainer bilberry

### Uses

**Ethnobotanic:** Traditionally, Cascade bilberry fruits were eaten raw and fresh, or were cooked, mashed, and dried in the sun in cakes. Columbia Plateau Indians of Washington dried surplus berries slowly over a fire kept smoldering in a rotten log (Filloon 1952). This method of drying the berries preserves the bulk of the Vitamin C content in the fruits (Norton et al. 1984:223). The dried berries are sometimes mixed with pounded salmon and a good portion of salmon oil, making a delicious dish.

After the huckleberry feast, the *Sahaptin* people of the Columbia plateau traveled to the productive berry fields higher in the mountains for a series of day, overnight, or weekend trips. The knowledge of the location of the berries is part of an Indian family's inheritance (Hunn 1990). Special berry picking baskets include "Klikitat baskets" of cedar root decorated with bear grass and bitter cherry bark.

Each family would harvest and store approximately four or five pecks (ca. four to five gallons) of dried berries for winter use (Perkins n.d. (1838-43), Book 1:10). Hunn (1990) estimates that there were 28-42 huckleberry harvest days in a year. This resulted in a total annual harvest of 63.9-80.2 kg/woman/year from the Tenino-Wishram area, and 90 kg/woman/year from the Umatilla area. The net result was a huckleberry harvest yield of 31 kcal/person/day in the Tenino-Wishram area and 42 kcal/person/day for the Umatilla area (Hunn 1981: 130-131). *Vaccinium* species contain 622 Kcal per 100 gm huckleberries, with 15.3 gm carbohydrate, 0.5 gm fat, 0.7 gm protein and 83.2 gm water (Hunn 1981:130-131).

In the fall, after the harvest, it was common for the *Sahaptin* to burn these areas to create favorable habitat (Henry Lewis 1973, 1977). Fire creates sunny openings in the forest and edges that foster the rapid spread of nutritious herbs and shrubs that favors the huckleberries (Minore 1972:68).

The leaves and berries are high in vitamin C. The leaves and finely chopped stems contain quinic acid, a former therapeutic for gout said to inhibit uric acid formation but never widely used because of mixed clinical results. The leaves have been widely used to lower or modify blood sugar levels. Many herbalists maintain that bilberry-leaf tea may be useful in stabilizing blood sugar levels in cases of diabetes, and medical research has shown that consumption of the leaf extract decreases blood sugar levels shortly after administration. Taken on regular basis, bilberry tea will gradually help alleviate both glycosuria and hyperglycemia and has a benign but useful effect as an adjunct treatment to diabetes mellitus. The leaves are believed also to stimulate appetite, and have astringent and antiseptic qualities that are useful in urinary disorders.

**Other Uses:** Cascade bilberry has a particularly sweet berry, and is prized for its flavor. The berries are eaten fresh, baked in pancakes, pies, and muffins, canned, frozen, or made into jams and jellies. Berries are usually picked in late July or August. The leaves can be used fresh or dried to make a tea.

Elk and deer browse the foliage of cascade bilberry. Flowers attract butterflies and other insects. For several species of grouse, huckleberries and bilberries are among the most important summer and early fall foods. Chipmunks, black bear, mice, scarlet tanagers, bluebirds, thrushes, and other

songbirds eat berries. Deer and rabbit browse freely on the plants.

### **Description**

*General:* Heath Family (Ericaceae). Cascade bilberry is a low, bushy shrub less than 4 dm tall. The branches are slightly angled; young branches are grayish and minutely pubescent, turning purplish with age. The leaves are obovate, 2-4 cm long, finely dentate, very glaucous, and rounded at the apex. The flowers are solitary, pinkish, urn-shaped blossoms in the axils of the leaves. The dusky blue berries are > 9 mm in diameter.

### **Distribution**

For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site. Cascade bilberry grows in alpine meadows, subalpine coniferous woods, and near the coast at elevations from 600-2000 m. The range of *Vaccinium deliciosum* is from southern British Columbia to northern California, in the Klamath Range and the northern high Sierra Nevada Mountains.

### **Establishment**

*Live Plant Collections:* Take cuttings from rhizomes in early spring or late summer and autumn. Dig up the rhizomes and cut them into lengths of 10 cm or longer. Place the cuttings in vermiculite at 21° C. Once the roots are established and meristematic activity is initiated, the small cuttings may be moved to individual pots with a peat sand soil mixture (1:1) potting soil. The soil should be kept fairly moist. When the plants are of a desired size, they can be planted in areas with moist soils and partial shade.

*Seed Collections:* Collect the berries in late summer or early fall. Clean the seeds by macerating in water, floating off the pulp, then allow the seeds to dry. Seeds require no stratification and can be sown on a moist peat surface. Temperatures of 18° C (for 12 hours) during the day and 13° C (for 12 hours) are ideal for germination. Seven weeks after germination, change temperatures to 20° C (for 14 hours) and 14° C (for 10 hours). Fertilize seedlings 10 weeks after germination. After the seedlings are 12 weeks old, transplant to a peat sand (1:1) media in individual pots (Minore and Smart 1978). The soil should be kept fairly moist.

### **Management**

This plant grows very rapidly in moist, shady conditions. If summer drought occurs, the plants should be watered so roots are kept fairly moist.

*Traditional Resource Management:* Management of this plant includes the following: 1) occasional burning to stimulate new growth; pruning the branches after picking the berries to stimulate new growth and fruit production the next growing season; and 3) ownership of cascade bilberry shrubs provides the basis for careful tending and sustainable yield of valued resources.

### **Cultivars, Improved and Selected Materials (and area of origin)**

Please check the Vendor Database, expected to be on-line through the PLANTS Web site in 2001 by clicking on Plant Materials. This plant is available from some native plant nurseries within its range.

### **References**

- Abrams, L. & R.S. Ferris 1960. *Illustrated flora of the Pacific states*. Stanford Univ. Press, Palo Alto, California.
- Cooke, S.S. 1997. *A field guide to the common wetland plants of western Washington and northwestern Oregon*. Seattle Audubon Society and Washington Native Plant Society. 414 pp.
- Crossley, J.A. 1974. *Vaccinium L. blueberry*. pp. 840-843 IN: Shopmeyer, C.S. (tech. coord.) 1974. *Seeds of the Woody Plants in the United States*. USDA, Forest Service, Agric. Handbook 450, Washington, D.C. 883 pp.
- Crowley, D.J. 1933. *Observations and experiments with blueberries in western Washington*. State College of Washington. Agricultural Experiment Station. Bull. 276. 20 pp.
- Filloon, R.M. 1952. *Huckleberry pilgrimage*. Pacific Discovery 5(3):4-13.
- Gunther, E. 1945 rev. 1973. *Ethnobotany of western Washington*. University of Washington Publications in Anthropology, 10(1). University of Washington Press, Seattle, Washington.
- Gilkey, H.M. & L.J. Dennis 1980. *Handbook of northwestern plants*. Oregon State University Bookstores, Inc., Corvallis, Oregon. 507 pp.
- Hickman, J.C. (ed.) 1993. *The Jepson manual. Higher plants of California*. University of California Press. 1399 pp.
- Hunn, E.S. 1990. *Nch'i-Wana "The Big River" Mid-Columbia Indians and their land*. University of Washington Press, Seattle and London. 378 pp.

Hunn, E.S. 1981. *On the relative contribution of men and women to subsistence among hunter-gatherers of the Columbia Plateau: A comparison with ethnographic atlas Summaries*. Journal of Ethnobiology 1:124-34.

Isaacson, R.T. 1993. *Anderson horticultural library's source list of plants and seeds*. Anderson Horticultural Library, University of Minnesota Libraries, and Minnesota Landscape Arboretum. 261 pp.

Kunlein, H.V. & N.J. Turner 1991. *Traditional plant foods of Canadian indigenous peoples. Nutrition, botany, and use*. Food and Nutrition in History and Anthropology Volume 8. Gordon and Breach Science Publishers. 632 pp.

Leigh, M. (August) 1997. *Grow your own native landscape: A guide to identifying, propagating, and landscaping with western Washington native plants*. Environmental Protection Agency, The Washington State Department of Ecology, and Washington State University Cooperative Extension.

Lewis, H. 1973. *Patterns of Indian burning in California: Ecology and ethnohistory*. Anthropological Papers No. 1. Ballena Press, Ramona, California.

Lewis, H. 1977. *Maskuta: The ecology of Indian fires in northern Alberta*. Western Canadian Journal of Anthropology 7:15-52.

Martin, A.C., H.S. Zim, & A.L. Nelson 1951. *American wildlife and plants: A guide to wildlife food habits*. Dover Publications, Inc., New York, New York. 500 pp.

Minore, D. & A.W. Smart 1978. *Frost tolerance in seedlings of Vaccinium membranaceum, Vaccinium globulare, and Vaccinium deliciosum*. Northwest Science 52(3):179-185.

Minore, D. 1972. *The wild huckleberries of Oregon and Washington - A dwindling resource*. USDA, Forest Service Research Paper No. 143, Portland, Oregon.

Moore, Michael. 1979. *Medicinal plants of the mountain west*. Museum of New Mexico Press. 200 pp.

Norton, H.H., E.S. Hunn, C.S. Martinsen, & P.B. Keely 1984. *Vegetable food products of the foraging*

*economies of the Pacific Northwest*. Ecology of Food and Nutrition 14:219-228.

Peck, M.E. 1961. *A manual of the higher plants of Oregon*. Binfords & Mort, Portland, Oregon. 936 pp.

Perkins, H.K.W. no date (1838-1843). "*Diary and letters*." Edited by Robert T. Boyd. Manuscript, Pacific Lutheran University, Tacoma, Washington.

Rose, R., C.E.C. Chachulski, & D. Haase 1998. *Propagation of Pacific Northwest native plants*. Oregon State University Press, Corvallis, Oregon.

Schopmeyer, C.S. 1974. *Seeds of woody plants in the United States*. USDA, Forest Service, Agriculture Handbook No. 450, Washington, D.C. Pages 840-843.

Turner, N.J., L.C. Thompson, M.T. Thompson and A.Z. York 1990. *Thompson ethnobotany: Knowledge and usage of plants by the Thompson Indians of British Columbia*. Royal British Columbia Museum Memoirs No. 3, Victoria, British Columbia.

Turner, N.J., J. Thomas, B.F. Carlson & R.T. Ogilvie 1983. *Ethnobotany of the Nitinaht Indians of Vancouver Island*. British Columbia Provincial Museum Occasional Paper No. 24, 165 pp.

Turner, N.J. & B.S. Efrat 1982. *Ethnobotany of the Hesquiat Indians of Vancouver Island*. British Columbia Provincial Museum Cultural Recovery Paper No. 2, 99 pp.

Turner, N.J. 1978. *Food plants of British Columbia Indians. Part II. Interior peoples*. British Columbia Provincial Museum Handbook No. 36, Victoria, British Columbia.

Turner, N.J. 1975. *Food plants of British Columbia Indians. Part I. Coastal peoples*. British Columbia Provincial Museum Handbook No. 34, Victoria, British Columbia.

Vanbianchi, R., M. Stevens, T. Sullivan & S. Hashisaki 1994. *A citizen's guide to wetland restoration*. U.S. Environmental Protection Agency, Region 10. 71 pp.

Young, J.A. & C.G. Young 1987. *Collecting, processing, and germinating seeds of wildland plants*. Timber Press, Portland, Oregon. Page 135.

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