



Scientific Name: *Vallesia glabra*

Common Names smooth vallesia, pearl berry

Botanical Family: Apocynaceae

Botanical Characteristics:

Vallesia glabra is a multi-stemmed shrub or small tree, growing up to 20 feet tall (1,2,3,4,5). It has simple, evergreen leaves, lanceolate to elliptic in shape with entire margins, which occur in alternate configuration and measure 1-3 inches in length and $\frac{1}{4}$ to $\frac{3}{4}$ inches wide (1,2,3,6). Leaves may be

fleshy or leathery and have inconspicuous veins (5,6). Tiny triangular stipules with minute glandular hairs mark the base of leaves (1,2). Small odorless or nearly odorless flowers, salverform in shape and white or greenish in color, appear in racemes or paniculate cymes, frequently opposite leaves, and have corolla tubes measuring up to 1/6 inch (1,3,4,5). Fruits are white, translucent and oblong drupes, up to 3/8 inch in length and containing 1-2 seeds (1,3,4,6). The plant has tan bark that is smooth on young growth and becomes rough and fissured with age.

Compound: Val gla

Geographic Origin: Sonora to South America

Ecozone Origin: Neotropic

Biome Origin:

Natural History:

Vallesia glabra is widespread throughout the subtropical and tropical areas of the New World, extending from Mexico to northern South America, at elevations of approximately sea level to about 1650 feet (1,4). Colonies also appear in Florida, the West Indies, Baja California, and the Galápagos Islands (1,6). Its northern limit is the Sonoran Desert, where it inhabits washes, canyons, and plains (4). It can also be found in forests, margins of sand dunes and lava flows, along ridges, and in riparian and semi-riparian areas (1,5). It occasionally forms thickets (2). The plant is commonly found untouched in areas of heavy grazing because goats and other livestock do not find the plant palatable (1,5). There are two main varieties, var. *glabra* and var. *pubescens* (3) Var. *glabra* shows smooth new growth, including twigs, buds, leaves, and flowers (5). Var. *pubescens* is different in that it exhibits a fine pubescence on new growth, and leaf blades may appear a little wider relative to length (3,5). Var. *pubescens* is found only on the Galapagos islands, where it grows in the same habitat as var. *glabra* (3,5).

Cultivation Notes:

Vallesia glabra is a good choice for southwestern gardens. Based on the variety of natural settings in which it is found, it is a very adaptable plant. It tolerates a variety of soils, including heavy soils in river bottoms (1). The plant has low water needs once established (7). It is a tropical or subtropical plant, and will do best in warmer conditions but is hardy to about 23°F (7). It prefers full sun and can accept reflected heat, but, as it is often found in forest settings, can also endure part shade (1,7). In its natural setting, it typically flowers from October to May, but may flower during other months also (6). It can be planted as a screen (7).

Ethnobotany:

Various groups, including Mexicans, the Seri people of Sonora, tribes of the Baja California cape, and the Chorote Indians of Argentina, eat the fleshy fruit raw (1,8,9). The English botanist Edward Palmer likened their flavor to lychee fruit (9). A study conducted in Ecuador suggests that diets containing 0.5% and 1.0% of *Vallesia glabra* have a significant effect on the weight of hen chickens (18).

The plant has also been used in a variety of ways in traditional medicine. In Sinaloa, a decoction of the peel and leaves is used to alleviate indigestion, and the fruit is eaten raw to relieve stomach

sourness (10). The Mayo people of Sinaloa and Sonora use the plant extensively: the juice of the fruit is squeezed directly into the eye to treat mal de ojo, (usually pink-eye); a decoction of twigs is used to treat ulcers; and the leaves are heated over coals and applied to affected areas to relieve ant stings (1,11). In Sonora the fruit and leaves were used to treat inflammation and swelling around the eyes, as well as measles, rheumatism, and muscle aches (10). Burned, powdered leaves have been used to treat rashes (4). The Guarijío people of the Sierra Madre region of northwestern Mexico would roast and ground the root to make a poultice to treat the measles (12). In traditional Argentine medicine, curative properties were attributed to the plant's bitter bark, which was used as a purgative and febrifuge (2). Among the Izoceño-Guaraní people of southeastern Bolivia, the plant has many uses in traditional medicine: the ashes of burned leaves are applied to skin to treat dermatosis; a tonic of water and new leaves is taken to alleviate heart pain; another tonic made from leaves soaked in cold water is taken to stop vomiting of blood; the juice of the fruit is squeezed in the eye to treat infections; rheumatic pain is treated by anointing the area with an infusion of stems and leaves cooked in animal fat; rheumatic pain is also treated by applying a pomade made of the leaves or by soaking in a bath of water with the leaves; a tonic of leaves and water is used to treat bladder pain (13). The Toba people of northern Argentina use parts of the plant to treat skin conditions: the juice of the fruits is used as a wash to treat acne; an infusion of the twigs is used as a wash for pimples, pediculosis, and scabies (14). They also use the leaves, which appear to have fleacide properties, to sweep the floors of their homes (14). Research conducted in Peru suggests that extracts from *Vallesia glabra* have fungicidal properties that may be able to protect other plants (15). A study performed in Mexico, however, of nine medicinal plants used by ethnic groups in Sonora to treat tuberculosis or diseases with similar symptoms found that *Vallesia glabra* has no anti-mycobacterial activity against *Mycobacterium tuberculosis* strain H37Rv (16).

The Mayo people of Sonora have employed the plant in various cultural and religious ways, including to ward off spells or infections from the dead or to prevent ethereal pathogens from entering sores or lesions (17). *Vallesia glabra* is one of the species used by the Science and Conservation department of the Kew Royal Botanical Gardens to restore and increase the biodiversity of the dry forests of southern Peru (19).

Height: 16 - 20 feet

Width: 6 - 10 feet

Growth Rate: Moderate Growing

Grow Season: Summer

Flower Season: Fall

Color: White

Function: Accent

Spread: Non-spreading

Allergen: Non-allergenic

Invasive: Benign

Toxicity: Benign

Hardy: Semi-hardy

Water Use: Low water Use

Resources:

1. Felger, R., Johnson, M., and Wilson, M. (2001). *Trees of Sonora, Mexico*. Oxford University Press.
2. "Apocynaceae: *Vallesia glabra* (Cav.) Link." *Flora Argentina: Plantas Vasculares de la Republica Argentina*. Accessed August 11, 2015.
3. McMullen, C. (1999). *Flowering Plants of the Galápagos*. Cornell University Press.
4. Turner, R., Bowers, J., and Burgess, T. (1995). *Sonoran Desert Plants: An Ecological Atlas*. University of Arizona Press.
5. Wiggins, I., and Porter, D. (1971). *Flora of the Galápagos*. Stanford University Press.
6. Shreve, F., and Wiggins, I. (1964). *Vegetation and Flora of the Sonoran Desert*. Stanford University Press.
7. "Smooth *Vallesia* – *Vallesia glabra*." Tohono Chul Park. Accessed August 12, 2015.
8. Arenas, P. and Scarpa, G. "Edible wild plants of the Chorote Indians, Gran Chaco, Argentina." *Botanical Journal of the Linnean Society*. 2007, 153, 73-85.
9. Hodgson, W. (2001). *Food Plants of the Sonoran Desert*. University of Arizona Press.
10. "Citabaro." *Atlas de las Plantas de la Medicina Tradicional Mexicana*. Biblioteca digital de la Medicina Tradicional Mexicana. Accessed August 11, 2015.
11. "Cacaragua." *Filoterapia Doméstica Mayo-Yoreme del Norte de Sinaloa*. Tlahui Medic. Accessed August 11, 2015.
12. Yetman, D. (2002). *The Guarijíos of the Sierra Madre: Hidden People of Northwestern Mexico*. University of New Mexico Press.
13. Bourdy, G., Châvez de Michel, L., and Roca-Coulthard, A. "Pharmacopoeia in a shamanistic society: the Izoceño-Guaraní (Bolivian Chaco)." *Journal of Ethnopharmacology*. Vol. 91, Issues 2-3 (April 2004), pages 198-208.
14. Martínez, G., and Barboza, G. "Natural pharmacopoeia used in traditional Toba medicine for the treatment of parasitosis and skin disorders (Central Chaco, Argentina)." *Journal of Ethnopharmacology*. Vol. 132, Issue 1 (October 2010), pages 86-100.

15. Osorio, L. "Plants protecting other plants: An alternative to pest-resistant GM crops." *Leisa Magazine*. December 2001. Agriculture Network (<http://www.agriculturesnetwork.org>). Accessed August 12, 2015.
16. Robles-Zepeda, R., et al. "In vitro anti-mycobacterial activity of nine medicinal plants used by ethnic groups in Sonora, Mexico." *BMC Complementary and Alternative Medicine*. 2013, 12:329. doi:10.1186/1472-6882-13-329. Accessed August 11, 2015.
17. Robichaux, R., and Yetman, D., eds. (2000). *The Tropical Deciduous Forest of Alamos: Biodiversity of a Threatened Ecosystem in Mexico*. University of Arizona Press.
18. Manzano Santana, P., et al. "Evaluación de Parámetros Zootécnicos en Pollos de Engorde Alimentados con Raciones que Incluyen *Vallesia Glabra*, una Planta que crece Silvestre en la Costa Ecuatoriana." *Revista Tecnológica ESPOL – RTE*. Vol. 23, Number 1 (December 2010), pages 129-134. Accessed August 12, 2015.
19. "The Hurango Festival." Kew Royal Botanical Gardens. Accessed August 12, 2015.