

Bauhinia L.

bauhinia

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Growth habit, occurrence, and use. There are about 600 species of this genus found in the tropical regions of the world (Larson 1974). The genus includes trees, vines, and shrubs that are frequently planted for their showy flowers and ornamental foliage (Bailey 1941; Neal 1965). Practical usage of the bark of orchidtree as an astringent in tanning and dyeing and of the leaves and flower buds as a vegetable has been reported (Bailey 1941). Seeds of bauhinias have served as a human food source (malucreeper, *B. vahlii* Wight & Arn.) (Ramasastry and Shenolikar 1974); a source of vitamin A (butterfly bauhinia) (Essien and Fetuga 1989); and as a possible pest control agent (malucreeper) (Freedman and others 1979). Butterfly bauhinia is used for fuelwood on Puerto Rico and for fences on Jamaica (Little and Wadsworth 1964); it is considered a weed on Guam (McConnell and Muniappan 1991). Three species, all small evergreen or deciduous trees, have been planted in the continental United States (table 1). Hawaii has 13 species of introduced bauhinias (Neal 1965), whereas Puerto Rico has at least 5 (Francis and Liogier 1991).

Flowering and fruiting. The large 5-petaled orchid-like flowers of bauhinias occur in racemes and range in color from white to deep purple and yellow. The fruits (figure 1) are flat and dark, and dehiscent or indehiscent legumes (pods) varying in length from 8 to 60 cm (Bailey 1941). Flowers of butterfly bauhinias have only 1 fertile stamen per flower and a calyx splitting along one side (Little and Wadsworth 1964; table 2). Flowers of purple bauhinias have 3 to 4 fertile stamens and a 2-parted calyx, whereas those of orchidtrees have 5 to 6 fertile stamens/flower and a calyx that splits on one side (Little and others 1974; Neal 1965). Information on pollinators is scarce, but Heithaus and others (1982) report that *B. unguolata* L. is pollinated by bats and that 59.4% of flowers examined show evidence of herbivory.

Butterfly bauhinia seeds are elliptic, flat, and 1 cm long; fruits are present throughout the year (Little and Wadsworth 1964). Purple bauhinia seeds are shiny-brown, rounded, flat, and range in length from 1.3 to 1.6 cm; flowering and fruiting occur in autumn and winter months (Little and others 1974). Orchidtree seeds are fairly large, about 1.3 cm in diameter, and the fruits mature in late spring or early summer. Rugenstein and Lersten (1981) report the presence of stomata on the seeds and pods of purple bauhinias and orchidtrees. In general, bauhinia seeds contain high amounts of linoleic and oleic fatty acids and low amounts of myristic and linolenic fatty acids (Balogun and Fetuga 1985; Ramasastry and Shenolikar 1974; Sherwani and others 1982; Zaka and others 1983).

Collection, storage, and germination. Seeds may be stripped from unopened legumes. Some and others (1990) reported satisfactory germination after 52 weeks when seeds of *Bauhinia rufescens* Lam. were scarified using 97% sulfuric acid (H₂SO₄), washed, dried, sealed into containers, and stored at 4 °C. Another study determined that seeds of orchidtree had a higher germination percentage when stored after cleaning; however, viability was lost within 3 years (Athaya 1985). Because *Bauhinia* is a hard-seeded Fabaceae, dry seeds should store well for many years. Loss of viability after 3 years could be attributable to high moisture content or mechanical damage. Germination studies of orchidtree using excised embryos produced results comparable to experiments using intact seeds (Babeley and Kandy 1986). Francis and Rodríguez (1993) reported excellent germination of bauhinia without scarification (table 3).

Nursery practices. Bauhinias species grow easily from seeds and bloom within 3 to 4 years (Bailey 1941). Some species can be propagated from suckers but rarely from cuttings.

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Table 1 *Bauhinia*, bauhinia: nomenclature, occurrence, and uses

Scientific name & synonym	Common name	Occurrence
<i>B. monandra</i> Kurz <i>B. kappleri</i> Sagot <i>Caspereopsis monandra</i> (Kurz) Britt. & Rose	butterfly bauhinia, pink bauhinia, pink orchidtree	Native of Southeast Asia; planted in Hawaii, escaped & naturalized in Puerto Rico & throughout the West Indies
<i>B. purpurea</i> L. <i>Phanera purpurea</i> (L.) Benth. <i>Caspereopsis purpurea</i> (L.) Pittier	purple bauhinia	Native of Southeast Asia from India to China; planted in Florida, Hawaii, Puerto Rico, the Virgin Islands, & elsewhere in tropical America
<i>B. variegata</i> L.	orchidtree, poor-man's-orchid, mountain-ebony	Native from India to China; planted in Florida & Hawaii; escaped & naturalized in Puerto Rico & the Virgin Islands

Sources: Francis and Liogier (1991), Little and others (1974), Neal (1965).

Table 2*Bauhinia*, bauhinia: flower and fruit morphology

Species	Flowering time	Petal color	Fertile stamens/flower	Legume
<i>B. monandra</i>	All year	Pink with red dots	1	15B30 cm long, pointed at apex, twists as opens
<i>B. purpurea</i>	Autumn & winter	Deep pink to purple	3B4	15B30 cm long, black, thin, twists as opens
<i>B. variegata</i>	Autumn to spring	Purple variegated with red & yellow	5B6	13B30 cm long, thin, pointed on both ends

Table 3*Bauhinia*, bauhinia: seed and germination data

Species	Seeds/wt		Germination *	
	/kg	/lb	Period (days)	Percent
<i>B. monandra</i>	5,680	2,576	4	100
<i>B. purpurea</i>	4,670	2,118	4	99
<i>B. variegata</i>	4,950	2,245	4	77

Source: Francis and Rodríguez (1993).

* Sample size = 100; germinated on filter paper; germination recorded when radicle emerged from seed