

Lobelia

Lobelia (/loʊˈbiˌli, lɒ-/ [4][5][6]) is a genus of flowering plants comprising 415 species,[7] with a subcosmopolitan distribution primarily in tropical to warm temperate regions of the world, a few species extending into cooler temperate regions.[8] They are known generally as lobelias.[9]

The genus Lobelia comprises a substantial number of large and small annual, perennial and shrubby species, hardy and tender, from a variety of habitats, in a range of colours. Many species appear totally dissimilar from each other. However, all have simple, alternate leaves and two-lipped tubular flowers, each with five lobes. The upper two lobes may be erect while the lower three lobes may be fanned out. Flowering is often abundant and the flower colour intense, hence their popularity as ornamental garden subjects.[10]

The genus Lobelia was first formally described in 1753 by Carl Linnaeus in *Species plantarum* and was named after the Flemish botanist Matthias de Lobel (1538–1616).[11][12][13]

Lobelia is probably the base form from which many other lobelioid genera are derived; it is therefore highly paraphyletic and not a good genus in a cladistic sense. For example, the Hawaiian species (see Hawaiian lobelioids), currently classified in several genera, originated from a single introduction to a now-submerged Hawaiian Island 15 million years ago, probably from an Asian Lobelia in Lobelia subg. Tupa.[14]

A New Zealand study concluded that local species of *Hypsela*, *Isotoma* and *Pratia* should be treated as Lobelia.[15]

See List of Lobelia species

Lobelia species are used as food plants by the larvae of some Lepidoptera species including the Setaceous Hebrew Character.

Several species are cultivated as ornamental plants in gardens. These include Lobelia cardinalis syn. Lobelia fulgens (cardinal flower or Indian pink), Lobelia siphilitica (blue lobelia), and Lobelia erinus, which is used for edging and window boxes.[10]

Numerous hybrids have been produced, notably Lobelia × speciosa, a hybrid derived from L. fulgens, L. cardinalis & L. siphilitica. The term "fan hybrids" is also used.[16] This plant is borderline hardy and requires fertile, moist soil. It is suitable for summer bedding schemes or growing in containers. The cultivars 'Kompliment Scharlach'[17] and 'Pink Elephant'[18] have gained the Royal Horticultural Society's Award of Garden Merit.[19]

The species used most commonly in modern herbalism is Lobelia inflata (Indian tobacco).[20] Use of lobelia for cardiovascular diseases may cause adverse effects.[21]

Lobelia has been used as "asthmador" in Appalachian traditional medicine.[22] Two species, L. siphilitica and L. cardinalis, were once considered a cure for syphilis.[23] Herbalist Samuel Thomson popularized medicinal use of lobelia in the United States in the early 19th century.[20]

Many members of the genus are considered poisonous, with some containing the toxic principle lobeline.[24] Because of lobeline's similarity to nicotine, the internal use of lobelia may be dangerous to susceptible populations, including children, pregnant women,[25] and individuals with cardiac disease. Excessive use will cause nausea and vomiting.[26] It is not recommended for use by pregnant women and is best administered by a practitioner qualified in its use. It also has a chemical known as lobellicyonicin,[citation needed] which may cause dizziness.

Extracts of *Lobelia inflata* contain lobeline[28] and those from *Lobelia chinensis* contain apigenin, lobeline, lobelanine, isolobelanine, lobelanidine, quercetin, coumarins, glucosides and other flavonoids.[29]

About eleven species native to Mexico and Central America have spurs on the flowers. These spurred lobelias appear to form a monophyletic group. Most have been classified in the genera *Heterotoma* (or sometimes *Calcaratolobelia*). However, since their closest relatives such as *Lobelia anatina* are in *Lobelia*, Koopman and Ayers classify them in *Lobelia*. [30]

