



Platanus × acerifolia

Platanus × acerifolia, the London plane, London planetree, or hybrid plane, is a tree in the genus *Platanus*. It is usually thought to be a hybrid of *Platanus orientalis* (oriental plane) and *Platanus occidentalis* (American sycamore). Some authorities think that it may be a cultivar of *P. orientalis*.

Description

The London plane is a large deciduous tree growing 20–30 m (66–98 ft), exceptionally over 40 m (131 ft) tall, with a trunk up to 3 m (10 ft) or more in circumference. The bark is usually pale grey-green, smooth and exfoliating, or buff-brown and not exfoliating. The leaves are thick and stiff-textured, broad, palmately lobed, superficially maple-like, the leaf blade 10–20 cm (4–8 in) long and 12–25 cm (5–10 in) broad, with a petiole 3–10 cm (1–4 in) long. The young leaves in spring are coated with minute, fine, stiff hairs at first, but these wear off and by late summer the leaves are hairless or nearly so. The flowers are borne in one to three (most often two) dense spherical inflorescences on a pendulous stem, with male and female flowers on separate stems. The fruit matures in about 6 months, to 2–3 cm diameter, and comprises a dense spherical cluster of achenes with numerous stiff hairs which aid wind dispersal; the cluster breaks up slowly over the winter to release the numerous 2–3 mm seeds. The London Plane is one of the most efficient trees in removing small particulate pollutants in urban areas.

It shares many visual similarities with *Platanus occidentalis* (American sycamore), of which it is derived; however, the two species are relatively easy to distinguish, considering the London plane is almost exclusively planted in urban habitats, while *P. occidentalis* is most commonly found growing in lowlands and alluvial soils along streams.

Origin

The species was formed by hybridization in the 17th century after *P. orientalis* and *P. occidentalis* had been planted in proximity to one another. It is often claimed that the hybridization took place in Spain, but it could also have happened in Vauxhall Gardens in London where John Tradescant the Younger discovered the tree in the mid-17th century. The leaf and flower characteristics are intermediate between the two parent species, the leaf being more deeply lobed than *P. occidentalis* but less so than *P. orientalis*, and the seed balls typically two per stem (one in *P. occidentalis*, 3-6 in *P. orientalis*). The hybrid is fertile, and seedlings are occasionally found near mature trees.

Controlled reciprocal pollinations between *P. occidentalis* and *P. orientalis* resulted in good yields of germinable seed and true hybrid seedlings. Crosses of both species, as females, with *P. racemosa* and *P. wrightii* produced extremely low yields of germinable seed, but true hybrids were obtained from all interspecific combinations. Apomixis (asexual reproduction from non-fertilized seeds) appeared common in *P. orientalis*.

In 1968 and 1970, Frank S. Santamour, Jr., recreated the *P. orientalis*, *P. occidentalis* cross using a *P. orientalis* of Turkish origin with American sycamores (*P. occidentalis*). The offspring were evaluated following several years of exposure to anthracnose infection. Two selections, 'Columbia' and 'Liberty', were released in August, 1984.

Leaves

The London Planetree has alternate leaf mosaic, lobed leaf shape, palmate leaf venation, and dentate leaf margins.

Taxonomy

Platanus × acerifolia was first formally described in the botanical literature by the Scottish botanist William Aiton in his 1789 work *Hortus Kewensis* as a variety of *P. orientalis*. Aiton described this variety with a two-word Latin diagnosis, "foliis transversis", and called it the Spanish plane tree. In 1805, Carl Ludwig Willdenow chose to elevate Aiton's variety to species rank, publishing the new species *P. acerifolia* in the fourth edition of *Species Plantarum*. The species name was then modified to include the multiplication symbol to indicate its suspected hybrid parentage. The other name commonly used for this taxon, *Platanus × hispanica* auct. non Mill. ex Münchh., is a *nomen dubium* based on an uncertain description.

Cultivation

In London

The London plane is very tolerant of atmospheric pollution and root compaction, and for this reason it is a popular urban roadside tree. It was planted extensively in Victorian times to weather the pollution of London. It is now extensively cultivated in most temperate latitudes as an ornamental and parkland tree, and is a commonly planted tree in cities throughout the temperate regions of the world, in London and many other cities. It has a greater degree of winter cold tolerance than *P. orientalis*, and is less susceptible to anthracnose disease than *P. occidentalis*.

The tree is fairly wind-resistant. However, it has a number of problems in urban use, most notably the short, stiff hairs shed by the young leaves and the dispersing seeds; these are an irritant if breathed in, and can exacerbate breathing difficulties for people with asthma. The large leaves can

create a disposal problem in cities. These leaves are tough and sometimes can take more than one year to break down if they remain whole.

London planes are often pruned by a technique called pollarding. A pollarded tree has a drastically different appearance than an unpruned tree, being much shorter with stunted, club-like branches. Although pollarding requires frequent maintenance (the trees must usually be repruned every year), it creates a distinctive shape that is often sought after in plazas, main streets, and other urban areas.

In New York City

According to the New York City Department of Parks and Recreation the symbol of that organization is a cross between the leaf of the London plane and a maple leaf. It is prominently featured on signs and buildings in public parks across the city. The tree is on the NYC Parks Department's list of restricted use species for street tree planting because it constitutes more than 10% of all street trees.

In Australia

In Australia, the London plane is used extensively as a street tree in major cities, particularly Sydney, Melbourne and Adelaide. The tree is commonly used because of its resilience to warm weather, its benefits as a shade tree, resistance to breakage and tolerance of urban pollution.

Timber

When quarter-sawn the timber has a distinctive and highly decorative appearance of dark reddish-brown flecks against a lighter background and is known as Lacewood.