

# Acer davidii Franchet (1884)

## Father David's Maple

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Originally published in *The Maple Society Newsletter*, Autumn 2007



*Acer davidii* fruiting branch

*Acer davidii*, named after the French missionary [Father Armand David (1826-1900)] who discovered it, is a Chinese snakebark maple, and is one of the most popular and frequent snakebark maple species in cultivation. As it grows wild over a very extensive area throughout central and southern China, it is a very variable species and can adapt to most garden conditions except shallow chalkland. It, plus its subspecies *grosseri*, includes several named cultivars selected for their outstanding striped bark, bright red shoots and leaf-stalks, or for their stunning autumn colours.

Normally, it forms a small to medium sized tree or shrub with smooth green to reddish bark striped white to light green, with green to purple shoots and leaf-stalks. The leaves vary from small to medium large, unlobed to 5-lobed, yellow-green to dark green bronzed red-purple, sparse to dense straw to rust-coloured short hairs on the veins and/or as tufts in the vein-axils beneath, and with rounded to small sharp saw-teeth on the leaf margins. The conspicuous and attractive strings of yellow flowers in May develop into large tassels of green to red-tinged

fruits during the summer.

The tallest tree in Britain grows in Winkworth Arboretum, Surrey, and was 68ft (21m) tall when measured in 2010. Father David's Maple is very easily propagated from seed, and roots readily from cuttings. It can also be grafted on to any of the larger snakebark maples.

### Distribution

*Acer davidii* grows wild over a very extensive area throughout southern and central China. It occurs from south-eastern Tibet and Yunnan to the Fujian Province in the south, northwards to Sichuan, and across to Hubei in the east. It grows mainly in deciduous and mixed forests and thickets in mountain areas at elevations ranging from 1,950-12,330ft (600-3,700m) above



*A. davidii* 'Earnest Wilson' in flower

sea level.

This great range in area and elevation helps to explain the great variation in growth, leaf habit and hardiness of this species. Yet, these differences are encapsulated in only two subspecies - *Acer davidii* subsp. *davidii* and subsp. *grosseri*. The former is confined to the southernmost provinces, while the latter grows in the central provinces, the two subspecies overlapping in the southernmost regions of Sichuan, Hunan and Jiangxi.

## Discovery and Introduction

*Acer davidii* was first discovered in April 1869 in west-central Sichuan, on the Muping mountain range near Baoxing, west of Chengdu. Dried herbarium samples were sent to the Paris Natural History Museum, and were described by the eminent French botanist, Adrian Rene Franchet, who named the species in honour of its discoverer, the French missionary and naturalist Father Jean-Pierre-Armand David (1826-1900).



Mature trunk



Typical bark

Armand David, born in 1826, was a Basque Jesuit sent to China in 1862. During his travels throughout northern, central and western China, including incursions into Mongolia, he collected herbarium samples of about 3,000 species. Of these, 1,600 were sent to the Paris Museum, but the rest were lost either in a shipwreck on the River Hans or in transit. Fortunately, *Acer davidii* was not among these, neither was the Pocket Handkerchief Tree, *Davidia involucrata*. He discovered the latter in the same area as *Acer davidii*.

Armand David eventually left China for good after he became very ill. Once recovered, he moved to Paris and lectured in natural history and medicine until he died in 1900. Although he had sent back some seeds to France, his maple was not among them. David's Maple was first introduced into cultivation in the West by seed brought back by Charles Maries in 1879. He collected it from the same locality in which David had originally discovered it. The Veitch and Son Nursery had sent Maries on a plant hunting expedition to China and Japan in 1877. Later, they also sent Ernest "Chinese" Wilson who collected seed of this maple in W.Hubei and Sichuan in 1901. Later, in 1906, seed was also collected further south in mixed forest on the Lichiang mountain range in Yunnan by George Forrest.

Another interesting introduction of this species was made by the Belgian, Joseph Hers, who went to China in 1905 as an interpreter for the Belgian Consul. Later, he took on the post of General Secretary of the Chinese Railway and Tramway Company from 1913 to 1924. This included locating timber sources for the railway. He became a keen dendrologist and sent back seed and plant specimens to the Brussels Botanic Garden.

This included maple seed he collected in Henan Province, central China, which Alfred Rehder described and named *Acer hersii*. Rehder mentioned the Chinese name for this was “tsin pi tuan”, which means green-barked linden because of the conspicuous green bark of the shoots and branches. This species has since been placed as a variety of *Acer davidii subsp.grosseri* [1], and appears to be the most versatile and reliable of the *Acer davidii* group in Western cultivation.

Unusually, Wilson’s, Forrest’s and Hers’s original introductions from the wild have been considered unique and stable enough to be given cultivar status as ‘Ernest Wilson’, ‘George Forrest’ and ‘Hersii’ [2].



*A. davidii* buds with typical striped bark of section *Macrantha*

## Classification

*Acer davidii* belongs to the Section *Macrantha*, the snakebark maples. This section contains 14 species, all Asiatic with the exception of the American Moosewood, *Acer pensylvanicum*. Beside the characteristic snakebark, these species are all deciduous small to medium-sized trees and shrubs, and have two pairs of valvate bud-scales with the outer pair completely enclosing the bud which is stalked. The leaves are unlobed to 5-lobed. The flowers appear in simple strings subtended by a pair of wings, each flower with 5 sepals and petals, and 8 stamens. The fruit usually has flattish nutlets with a dimple on one side.

Beside the type sub-species *davidii*, earlier mention was made of subspecies *grosseri* and its variety *hersii*.

### ***Acer davidii subsp. grosseri***

This subspecies forms a relatively small tree or shrub, smaller than subspecies *davidii*, usually less than 33ft (10m), with the crown quite broad. The bark is usually green with whitish striping. Current shoots are green to reddish with the snakebark barely visible.

The smaller leaves, 5-7cm long x 4-5cm wide, are very shallowly 3-5 lobed, sometimes smaller and unlobed on older less vigorous shoots. The dominant central lobe is broadly triangular with a short sharply pointed tip. The lateral lobes are much smaller but also with triangular pointed tips. The margins are finely doubly saw-toothed, and sometimes the main veins are red-tinged. The petioles are often red on the upper exposed

side and green beneath. The inflorescence is also smaller than the type *subsp.davidii* – 5-8cm long, with fewer flowers. The fruit (nutlet + wing) is similar to *subsp.davidii* but smaller – 1.5-2.5cm long.

With the exception mentioned below, *Acer davidii subsp.grosseri var. hersii* is distinct in that the shoots, petioles and leaves are normally green to yellow-green, and the young shoots have a whitish-grey bloom at least near the tips. The bark, shoots, petioles and leaves are never bronzed and reddish with the exception of young very vigorous shoots which may be pink-tinged. Its distribution is confined to mountain areas in Hunan and Hupeh at 3,900-6,500ft (1,200-2,000m) a.s.l.

## Detailed Description

A deciduous tree reaching 33-49ft (10-15m) in height, sometimes multi-stemmed near the base, and forming a vase-shaped tree with arching branches, the crown becoming broadly dome-shaped with age. The bark varies from olive-green to reddish-purple, and with light green to whitish snakebark striping, becoming green-brown to grey-brown with orange-brown fissures and slightly corky at the base of older trees.

Current shoots are smooth, slightly shiny, olive-green often with a red to purple tinge, and with whitish striations which become more conspicuous with age, although the shoots remain semi-shiny for several years. The small (up to 1cm) green-to-red hairless winter buds are ovoid to oblong with short pointed tips. They have two pairs of valvate scales and sit on short stalks.



Leaf upper side

Leaves : The leaves vary in shape and size from simple unlobed to 3-lobed with heart-shaped to rounded leaf-bases. When unlobed, the leaf may be broadly oval, about 1.5 times as long as wide, with a tail-like sharply pointed tip. When 3-lobed, the basal lobes are small, often obscure, and in the lower third of the leaf. Sizes vary from 7-16cm long x 4-8cm wide.

The leaf margins have either numerous shallow small irregular sharply pointed saw-teeth, or round bluntly pointed teeth, sometimes lobed. The margins are sometimes red or bronze-tinged. The lobe junctions (sinuses) are very shallow and roughly right-angled. Venation is green with a central midrib, sometimes tinged red on the upper side, with 7-10 pairs of roughly parallel, but not always opposite, lateral veins which become reticulate.

The upper surface is mid-to-dark green, sometimes bronzed, matt to semi-shiny, and with sandy to rusty short hairs along veins and clustered at the “throat” early on, soon becoming hairless. The undersurface is a lighter green with sandy or rusty hairs along the raised veins, and as tufts in the vein-axils. The hairs along the veins usually disappear as the summer progresses. Autumn colour varies from clear yellow to orange and red.

The petiole is shorter than the leaf – up to 6cm long – stout with a central groove on the upper side, and with a slightly swollen base. Short brownish hairs are present at first, but the petioles soon become more or less hairless. The petioles are red on the upper exposed side and yellow-green tinged pink below.



Leaf under side, showing short hairs along the veins

**Flowers** : The 15-30 yellow to yellow-green flowers appear in late April/early May after the leaves have emerged, in narrow pendulous simple tassels at the ends of lateral shoots. The male and female flowers are in separate tassels and sometimes on separate trees, the female larger and longer than the male tassel - up to 15cm long x 2cm across, compared to 4-10cm long.



*A. davidii* flowers in pendulous tassels

The saucer-shaped flower is about 1cm in diameter, has 5 sepals and petals, 8 stamens, and hangs on a short slender hairless stalk (pedicel) attached to a thin green main stalk (peduncle). The yellow-green sepals are ovate with bluntish tips, 3mm long x 2mm wide. The pale yellow petals are obovate with rounded tips, and slightly larger than the sepals.

In the male flowers, each of the 8 stamens consists of a hairless slender filament with a short yellow ovoid anther on the outer end, and with the inner end inserted into the edge of the notched green receptacle disc (intrastaminal). The anthers barely peep above the perianth rim. The ovary is rudimentary with a short 2-pronged stigma in the centre.

The perianth of the female flower is similar but not quite as open. The squat 2-winged ovary is about 2mm long and 1mm tall at first, with the short style dividing to form a bilobed stigma curling at the tips. The small undeveloped stamens are on short filaments and crowded round and below the stigma surfaces.

**Fruits** : The glabrous fruits, on slender stalks, hang in narrow pendulous strings. Each samara (nutlet + wing) is 2-3cm long. The weakly keeled and veined wings are up to 8mm broad at the widest point in the outer third, narrowing only slightly to 6mm at the nutlet junction. The pairs of wings are widely spread to almost horizontal, occasionally angled backwards as if diving. The small (5-8mm long) oval nutlets are smooth and rounded on one side and dimpled on the other. The green fruits, sometimes red-tinged, ripen in September when the wings become straw-coloured.



Closeup of female flowers

[1] Rehder described *hersii* as a variety of *grosseri*, having originally placed it at the rank of species. *Flora of China* initially raised *A. hersii* back to species rank, but currently treats it as synonymous with *A. davidii* subsp. *grosseri*.

[2] Although 'Hersii' is mentioned by Jacobson in "*North American Landscape Trees*" (1996) we are not aware of any such legitimate cultivar. Grafted plants under the name *A. davidii* subsp. *grosseri* var. *hersii* are occasionally available.

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