

Acer campbellii Hooker & Thomson ex Hiern (1875)

Campbell's Maple

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Acer campbellii

This large attractive Himalayan maple has very distinct (5-)7 lobed deeply cut leaves, in which the lobes are arranged like the spokes of a wheel to almost form a circle. Each leaf, when it emerges in the spring, hangs down like a bright red down-covered duck's foot, and in the autumn turns an eye-catching bright yellow. The young shoots are covered in a conspicuous glaucous bloom.

Distribution, Discovery and Introduction

The natural distribution of *Acer campbellii* extends from the Himalayas in Nepal, Bhutan, Darjeeling, into N.India, N.Myanmar and S.W. China. It occurs in broadleaf and mixed mountain forests at 1,800-3,700 metres above sea level, and it can grow up to 31m (100ft) tall.

Acer campbellii is said to be the only maple associated with the overrunning of a nation. It was first discovered by Sir Joseph Hooker during his famous 1849 expedition into Tibet. Archibald Campbell, the Liaison officer between Britain and the Sikkim Rajah at that time, accompanied Hooker during the expedition which crossed into Tibet.

The Sikkim Prime Minister, who was jealous of Campbell's friendship with the Rajah, had Hooker and Campbell arrested as they re-entered Sikkim, and Campbell was badly beaten up. He then demanded a ransom for their return to India. Once this exchange was completed, the British Indian Army overran Sikkim, and so it became part of the British Empire.

Roy Lancaster was impressed by a 100ft tree he came across in Nepal "with a huge trunk as straight as a gun barrel, supporting a beautiful autumn canopy of golden leaves." He likened it to an English elm in its branching and autumn colour.

Campbell's maple was first introduced into cultivation by Sir Joseph following his Sikkim adventures, and has been introduced several times since. However, the type species is somewhat tender and never really got established [in the United Kingdom]. It has a wide altitude range, hence higher altitude forms are probably more suitable than earlier introductions. The subsp. *yunnanense* from the more easterly regions certainly grow happily here. The tallest Campbell's Maple in Britain is at Brodick Castle in Ayrshire, and was 52ft (16m) when last measured in 2007.



Terminal buds

Classification

Acer campbellii, together with its close relatives *Acer elegantulum*, *Acer erianthum* and *Acer oliverianum*, belongs to the Series *Sinensia* of Section *Palmata*.

The *Sinensia* group contains more than 20 species, most of which are warm temperate or sub-tropical trees. Only a handful of these can grow outside in Britain. The main characteristics of species in this series are :-

- a) Unstalked buds with four pairs of bud scales.
- b) 3-7 lobed papery-to-leathery leaves with toothed margins – the teeth may be so small they are barely visible.
- c) The leaves, when they first appear, have deeply divided finger-like lobes and hang down, conspicuous saw-teeth around the margins, plus the leaves are often dark purplish-red to pinkish-green.
- d) There are tufts of fine white hairs scattered irregularly in the vein-axils of the leaf undersides, often looking like miniature white cocoons.
- e) Small flowers with 5 red sepals, 5 petals and 8 stamens inserted on top of the round receptacle disc (extrastaminal).
- f) The active stamens and ovaries occur in separate flowers but on the same tree.
- g) The fruits have elliptical to round swollen nutlets.

The characteristics and distribution of the hardier subspecies of *Acer campbellii* mentioned earlier are outlined below.



Acer campbellii subsp. *flabellatum*

Acer campbellii subsp. *flabellatum* (Rehder) Murray (1977) ⁽¹⁾

Native to S.W. and Central China, Upper Myanmar and Vietnam, this subspecies is hardier and more common in Western cultivation than the subsp. *campbellii*. The tallest tree in Britain is thriving in the Trewithen Gardens, Cornwall, and has been measured at 49ft (15m) tall.

It differs from Campbell's Maple in having shallowly divided fan-shaped lobes, deeply heart-shaped leaf-bases, and irregular short-pointed, forward curving teeth on the leaf margins, in contrast to the bristle-tipped teeth of Campbell's Maple.

Acer campbellii subsp. *yunnanense* Rehder (1905) ⁽²⁾

Native to southern Yunnan and Upper Myanmar, growing in mountain forests at elevations of 7,475-13,000ft (3,000-4,000m) above sea level.

It was first described by Alfred Rehder from material collected by Augustine Henry in Yunnan.

It is much hardier than subsp. *campbellii* and has been planted in many Western tree collections. It differs from subsp. *campbellii* in having smaller 5-7 lobed leaves with slightly narrower more deeply divided lobes and short pointed lobe tips, a hairless receptacle disc, and reddish paired fruit wings held at a very wide angle to horizontal. The autumn colour is an attractive reddish-orange.

Detailed Description

A medium to large tree, reaching 60ft (18-6m) plus in cultivation, but attaining 100ft or so (31m+) in the wild. Older trees have a tall dome-shaped crown. Current shoots vary from strong to slender, are smooth and hairless (except at the nodes), light green on one side reddish on the other and often have a grey-white bloom (glaucous). The shoot is sparsely covered in narrow whitish long-oval lenticels which, on older shoots, become light brown and slightly raised. The green side remains green for many years, the reddish side becoming red-brown to grey brown in 2-4 years. Older shoots and bark remain smoothish.

The small (about 5mm long) reddish winter buds are ovoid with pointed tips. The current shoot ends in a pair of lateral buds, as the previous spring's terminal bud had developed into flowering shoots. There are 2-4 pairs of partially overlapping reddish outer bud scales which are green where covered by adjoining scales. Each bud sits on a collar of fine light-coloured hairs. Each scale has fine light-coloured hairs on the margin and outer surface.

The leaf-scars of winter shoots are very narrow and the upper sides are fringed with hairs around the bases of the buds. The paired scars do not completely encircle the shoot, but are connected by a slight ridge on each side. Arising between the leaf scars, there is also a vertical ridge for a short distance down the shoot. At each shoot base several rings can be seen, formed by the scars left by the previous year's bud scales.



Acer campbellii leaf

Leaves: The large leaves – 9-12 by 10-15cms long by wide – are palmately 7 lobed with strongly heart-shaped leaf-bases, which are occasionally flat. The two small basal lobes are angled backwards towards the shoot. The other 5-lobes are similar in shape and size to each other, and are arranged like the spokes of a wheel to almost form a circle. Occasionally, the basal lobes are absent to form a 5-lobed leaf.

Each lobe is ovate-triangular with a short tail-like tip. The acute-angled lobe junctions (sinuses) are $\frac{1}{3}$ to almost $\frac{2}{3}$ the way to the leaf-base. The leaf margins are regularly, finely, shallowly and sharply saw-

toothed. Venation is green or red-tinged, palmately 7-veined, with irregular laterals arising from the main veins and becoming reticulate.

The upper surface is matt mid-green, hairless, and with slightly raised main-veins. The under surface is a lighter green with a slight sheen. It has sparse fine light-coloured hairs along the veins at first, becoming hairless except for small “cocoon” of white hairs in the vein-axils. The red leaf-stalks are shorter than the leaves, 4-8cms long, slightly grooved on the upper side, and with swollen bases covering the lateral buds.

Emerging young leaves are shiny reddish to chocolate-brown, with long finger-like lobes divided about 3/4-way towards the leaf-base. They hang downwards but, as they develop, the leaves gradually rise to the horizontal, become green and losing their gloss, plus expanding from the middle, becoming less deeply lobed as described above. In the autumn, the leaves become an attractive clear yellow to yellow-orange.

Flowers: The small greenish-yellow to greenish-white flowers appear with the leaves in May, in slender hanging clusters 5-15cms long. They arise from terminal buds on long slender, hairless main stalks (peduncles). The very small flowers are on 6-10mm long stalks (pedicels) arising from the peduncle, and are also slender and hairless.

The 5 sepals are red, hairless, ovate-oblong, acute and 1-1.5mm long. The 5 petals are white, oblong, acute and as long as or longer than the sepals. There are 8 4-5mm long stamens, with hairless filaments and reddish anthers. The stamens are inserted on top of the round hairy receptacle disc. The ovary is densely hairy, rudimentary in male flowers, with a nearly hairless style which divides into 2 short spreading 2mm-long stigmas.

Fruit: The paired samaras are in hanging tassels. The keeled wings, with faint curved veins are broadest in the outer third with rounded ends and narrowing sharply to the width of the nutlets. Each nutlet is ovoid and strongly rounded – 5-6mm long x 3-3.5mm wide x 2-3mm deep. The paired wings are held at a very wide angle to horizontal.



Samaras

(1) In the Acer account in the *Flora of China*, Xu *et al* (2008) *Acer flabellatum* is treated at the rank of species, with *Acer campbellii* subsp. *flabellatum* included in the synonymy.

(2) Peter Gregory’s article uses the subspecific rank rather than the varietal rank as described by Rehder. In *Maples of the World*, van Gelderen *et al.* (1994), *Acer campbellii* var. **yunnanense* (as included above) is treated as *A. campbellii* subsp. *flabellatum* var. *yunnanense*. In the *Flora of China*, it is treated as a synonym of *A. flabellatum*. Some align var. *yunnanense* more closely with *A. campbellii* than with *A. flabellatum*, in agreement with Rehder's original treatment, though more work is required to fully understand this taxon and indeed other members of this species complex.

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