

MELIOSMA

1. The Botanical Muddle

Botanists now believe that there may be over 100 different species of *Meliosma* in the wild. There are, however, only 13 species listed as growing in the UK gardens in the latest International Dendrology Society (IDS) online article on the genus *Meliosma*. Of these, 12 species originate from China and Vietnam, and there is just one from Mexico. No species of *Meliosma* is well known in UK gardens despite at least 3 of the species having been introduced into UK cultivation by Wilson and Forrest a hundred or more years ago. That is not to say that there are not some very attractive and rewarding species of *Meliosma* or that they are in any way tender or difficult to grow.

A major problem for anyone interested in growing *Meliosma* is that the species names have been reviewed and changed in an incomprehensible way over the years. In 1981, Bean's 8th Edition of 'Trees and Shrubs Hardy in the British Isles', described and listed 8 species. In 1971 a young Dutch botanist, TH Van Beusekom, reclassified and renamed all the Asiatic species in a complicated arrangement of subspecies and varieties. Four previously separate species all became subspecies and two species were renamed entirely. When, in 2009, 'New Trees' was published by the IDS they followed the Van Beusekom taxonomy. Only recently has a new Plants of the World online and the IDS (but not the RHS) reverted to simple traditional *Meliosma* species names which are now virtually identical to the 1981 Bean listings. Botanists may well argue about the finer scientific points of these reclassifications but, to the layman, van Beusekom's analysis appeared totally confusing nonsense. How could a Mexican species of *Meliosma* be the same and have the same name as a Chinese species?

The result of this confusion was that specialist, continental nurseryman started to propagate *Meliosma* species from seed with highly confusing and totally incorrect names. At Caerhays we have purchased 4 separate individual species (or subspecies as they were then) from overseas in the last 25 years. In reality all but one has turned out to be the same species.

Faced with this muddle gardeners and plant lovers could easily be forgiven for steering well clear of *Meliosma* altogether. Nevertheless they are missing out on something rather splendid if they do!

2. Characteristics common to all *Meliosma* species (in so far as we currently understand them)

The generic name *Meliosma* means 'honey scented' which many, perhaps most, species flowers are. A peculiarity of nearly all the species of *Meliosma* that are currently known is the explosive way each mature flowers sheds its pollen when lightly touched. This is understood to be a way of attaching pollen to insects which visit the flowers without allowing the bee or insect to actually harvest the protein rich pollen. This may explain why *Meliosma* species often only occasionally set viable seed. The speculation is that in the wild they

may reproduce apomatically (i.e. asexually) As far as we yet know, individual plants of most species are widely distributed, scarce, and not found in groups.

All species of *Meliosma* have showy plumes of whitish scented flowers which are astilbe-like, followed by red, purple or black berries. Some species are shy flowerers and some are not. All species have little tufts of hairs where the axil veins join the midrib of the leaf.

All species of *Meliosma* that we so far know about have one other characteristic in common; a swollen 'dog leg' where the leaf and stem meet. Not always obvious, but this provides more proof in identifying these little known plants.

There are few other characteristics common to all species so it is necessary to further subdivide them into 3 distinct groups:-

3. Deciduous species of Chinese origin with attractive pinnate leaves which grow into small trees and which are best grown in full sun to encourage flowering and seed production after hot summers

Meliosma beaniana (previously *M. alba*)

Wilson first introduced this species into cultivation in 1907 where he described it as 'one of the most striking and handsomest of Chinese trees'. There are only 4 mature trees of this species in cultivation in the UK; at Borde Hill, Bodnant, Edinburgh Botanic Gardens and Caerhays. The Caerhays plant arrived here from Kew in 1919 and is already beginning to die of old age.

The Caerhays tree has never produced any seed, possibly because it is now in too much shade, and propagation has therefore proved impossible even if the tree is supposedly self-fertile. Grafting might be an answer but what do you graft it onto as a rootstock? Fortunately the Borde Hill plant does produce seed but they are hard to grow. We have, however, recently planted out a new seed grown *M. beaniana* here.

M. beaniana is one of the showier species of *Meliosma* when in flower. At Caerhays the flowers appear shortly after the leaves in April but the Borde Hill plant performs in May. The blossom is off-white in spreading and cascading large panicles and the flowers show up well in the more open landscape of Borde Hill. Less so at Caerhays.

The species grows into a fairly upright tree of around 30-40 feet in height and the pinnate leaves have 5-11 pairs of leaflets. It appears perfectly hardy and the bark is quite distinctive.



Meliosma oldhamii (previously *M. pinnata* subsp. *arnottiana* var. *oldhamii*)

This is perhaps an even rarer species than *M. beaniana* in UK cultivation but there are well grown plants both at Caerhays and in Burncoose Gardens. Contrary to what the reference books have previously stated, these are both tall growing, vigorous and upright trees. The Caerhays plant is around 30 years old and a good 25-30 feet in height today growing in full sun at the top of a hot, dry bank. The plant at Burncoose was acquired from a Belgian nursery while the older Caerhays plant was a gift from Windsor.

There are several notable and attractive features to *M. oldhamii*. The leaf buds are globose with dense light brown or, almost orange, pubescence before the leaves appear. Americans have christened *Meliosma*

with the ugly, common, name 'worm headed tree'. This is not a bad description of the appearance of the emerging buds here. *M. oldhamii* flowers at the shoot tips in June or July with huge upright flower heads that can even bend branches over with the weight of the flowers. The individual flowers are pure white and the seed forms and ripens surprisingly quickly after flowering in only a matter of 3-4 weeks. The tiny seeds are black when ripe and drop immediately. The attractive pinnate leaves have 5-13 pairs of leaflets. Of these, the lower ones are ovate and the higher ones oblong.

The annoying feature of *M. oldhamii* is that it only flowers at its spectacular best after a particularly dry summer. Last year, after a wet August in 2021, only one flower appeared here this year and none on the Burncoose plant. Nevertheless it is very well worth waiting for when it is covered in flowers as you can see. Sadly we have so far failed to germinate the seed.





Meliosma veitchiorum (no name change)

This is the largest leaved and most widespread species of *Meliosma* in UK gardens. It has been offered by Burncoose Nurseries for some time partly from seed grown in cold frames at Caerhays where the seed can often take two years to germinate.

It was first introduced by Wilson in 1901, and the original multi-branched Caerhays tree was around 40 feet tall before it died of old age and, probably, over seeding. We used to spread plastic sheets under the tree to catch the large and attractive round, reddish-purple seeds and try to beat the grey squirrels to them.

M. veitchiorum is a statuesque, upright tree with huge pinnate leaves with red petioles of 3 feet in length with 7 to 15 pairs of leaflets. In autumn the leaves turn an attractive orange-brown and, when they eventually fall in November or later, the tree then looks gaunt and skeletal. The winter buds at the tips of the shoots look a bit like drumsticks.

The species has erect, terminal, and very open flower heads in May. A young plant at Burncoose has started flowering and fruiting after only 12 years. From a distance the flower heads look greenish but, close to, the individual flowers are white. Not quite the show of the *M. oldhamii* but the species does have year round interest and the bark is easily recognisable.

Young plants are particular attractive to roe deer so a tall wire netting surround is essential. They have done best here in full sun rather than the partial shade where flowering is more occasional even if the trees look perfectly happy when grown in full shade.



4. Deciduous species of Asiatic origin with entire leaves which are definitely best grown in at least partial shade in dampish, moist conditions where they cannot dry out in hot summers

Meliosma tenuis (previously *M. dilleniifolia* subs. *tenuis*)

This is a Japanese species which, unlike other *Meliosma* species, is common in deciduous forests at relatively low altitudes. It has a low growing and wide spreading habit achieving a height of 6-10 feet here with a similar or, usually, greater width. We have a single stemmed plant with some later basal shoots and another that has

always been multi-stemmed. Of the 6 plants which we have grown (4 survive) all have been sourced from overseas nurseries. There were two different names given to these plants (*M. dilleniifolia* and *M. cuneifolia*) but, with the information now available from the IDS website, they are all, very probably *M. tenuis*.

M. tenuis was first introduced to the UK in 1915 at Kew and Wakehurst Place. Today there are only a few wild collected plants in cultivation and these are mainly in Scotland and the North of England which suggest the plant has no issues with cold winters.

You can see a picture of the toothed and pointed leaf here which have 8-14 pairs of veins and tufts of pale down under the leaf vein axils. Flower clusters are visible in June but do not usually open until August. The flower clusters are usually drooping with zig-zag stalks and the individual flowers at the end of the clusters open first. The tiny rounded flowers themselves are a creamy-yellow, fading to dull white, but richly scented. At the height of summer this large shrub does make a significant and noticeable display. The tiny black seeds set quickly but are usually sparse and irregular on the inflorescence.

As we have discovered this plant struggles and dies in hot sunny locations. The leaves burn and defoliate in full sun with dieback. Our only two mature plants grow in much shadier locations.





Meliosma cuneifolia (formally *M. dilleniifolia* subs. *cuneifolia*)

This species was once part of the *Meliosma* species collection at Caerhays but died after a few years of vigorous flowering as a young plant. Again we made the mistake of growing it in full sun. I am therefore indebted to Tom Hudson at Tregrehan for these photographs and information on this species which he sensibly grows in full shade with full tree cover.

M. cuneifolia is a Chinese species growing much larger than *M. tenuis* but still with a multi-stemmed habit. Tom's small trees were planted in 2001 and are around 15-20 feet tall with erect, and then, slightly drooping branches. Unlike *M. tenuis*, the 3 or 4 branched panicles of flowers are upright as well as being much larger. Flowering takes place in June/ July and the strongly scented flowers have greenish/ yellowish petals which turn white. Rounded seeds form here and there in the inflorescences.

The toothed, cuneate leaves have a roughened upper surface, pointed ends, and 16-20 pairs of leaf veins on the underside of the leaves.

The largest known tree in cultivation is at Birr Castle in Ireland and dates from 1916 which makes it a probable Forest introduction. There have been other more recent introductions of this species from the wild but it remains scarce in cultivation with the added problem of the confusion over the botanical naming.



Another trio of small trees of *M. cuneifolia* at Tregrehan come from a different Chinese wild collection planted in 1995. These are also multi-stemmed trees but we do not grow it here.



5. Evergreen species with entire leaves that also seem to prefer moist and shady conditions

Meliosma simplicifolia subs. *pungens* (possibly now *Meliosma yunnanensis*)

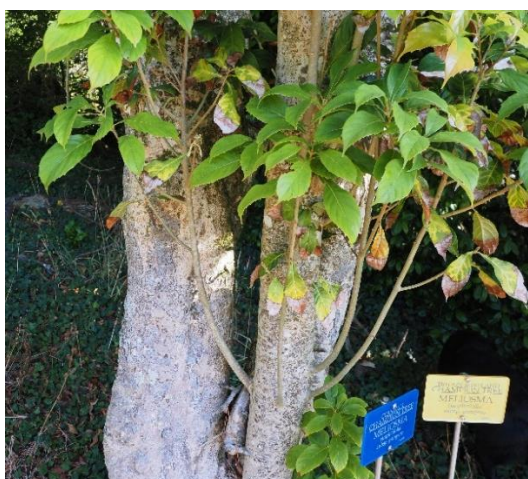
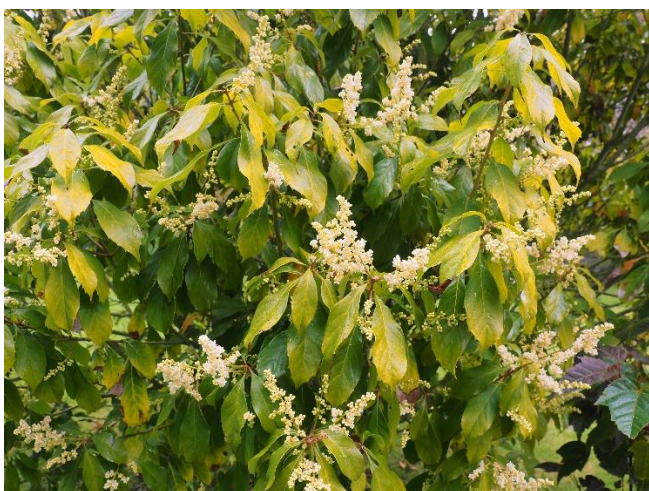
Caerhays and Trewithen have grown what we have always known as *Meliosma pungens*, presumably from Forest introductions, although no formal records exist. Van Beusekom's reclassification listed 7 subspecies of *M. simplicifolia* but this has largely been unravelled by taxonomists. In any event *M. pungens* is the only member of the former *M. simplicifolia* group believed to be growing in Western Europe today.

The original Caerhays tree of *M. pungens* remains rather dilapidated in extreme old age at about 20 feet in height. It lost its shade and tree cover in 2006, and didn't like it, but is now reshooting vigorously from the main stem. I have only once seen a flower myself and, a younger plant propagated from cuttings by Philip Tregunna, died recently of honey fungus at a height of about 10-12 feet. Burncoose Nurseries started stocking this rare species and, in 1999, Tregrehan acquired a plant which grows (again in probably too much sun) on the lawn by the car park. It is a pyramidal, small spreading tree, say 25-30 feet in height, while the similar plant in Burncoose garden has a more ovate overall shape. The Tregrehan plant, whose leaves go yellowish in dry summers, has however flowered and fruited in 2022 as you can see in these pictures.

Unlike the pinnate leaved species of *Meliosma* one probably has to say that *M. pungens* is both extremely rare and an equally unexciting collectors item.

In the wild *M. pungens* originates from SW. China, Myanmar and Bhutan in warm, wet, evergreen forest. It is therefore likely to be rather more tender than other species although we have not found this to be the case here in the many, severe, cold winters over the many decades since it arrived here.

Taxonomists now suspect that *M. pungens* should be renamed as *M. yunnanensis* based on the numbers of pairs of leaf veins on the underside of the leaves (there should be 10 but there are not) and the size of the adjacent tufts of hairs. For the sake of simplicity it remains *M. pungens* to us.



Meliosma dumicola (possibly *M. myriantha* or *M. thompsonii*)

This species is now well established at Tregrehan and just starting out at Caerhays. The original plant came from a Vietnamese source although *M. dumicola* is widely found in China and in the tropics of South East Asia as well. The Tregrehan plants are growing away quickly in full shade and the expectation is that they will eventually become large, densely foliated, single stemmed trees.

The leaves are narrow and elliptic, the new growth has a reddish tinge and, initially, the new leaves are much narrower. There are 7-10 pairs of veins on the undersides of the leaves which do not meet the leaf margins. The original Tregrehan tree has yet to flower but the flowers are believed to be small and dull, appearing in March to May. When its does flower the identification can finally be confirmed.



Meliosma dentata

M. dentata is probably the first New World species to be cultivated in Europe. It was collected in the cloud forests of Mexico and, now at 6 feet in height, it has so far proved hardy at Tregrehan where it grows well in dense shade but has already started to flower. 12 years on from being planted its privet-like flower heads cannot be said to be that exciting but, as ever, rarity and dullness go hand in hand.



6. Propagation

Although only rarely tried, it would seem that evergreen *Meliosma* species can be successfully propagated from cuttings taken in late summer or early autumn and set in a heated mist bench.

Meliosma with large seeds need to go into a rodent free, cold frame to germinate over time. However, it would appear that this applies only to *M. veitchiorum* which sets as a very large, hard seed when fully ripe in November. Other *Meliosma* species, whose much smaller seeds, seem generally to ripen quickly after flowering, should probably be sown right away rather than being stored until the spring. This could be the problem with our failures with *M. oldhamii* and with or seed from Borde Hill of *M. beaniana*. Equally it may just be that asexual plants like *Meliosma* only occasionally set small amounts of viable seed and only in the year after hot summers?

I dare say that the *Meliosma* story will evolve and broaden as our knowledge and understanding of this obscure genus increases over time.

It would be interesting to try and grow *Meliosma parviflora* which flowers at the Botanic Gardens in Nantes in France (and elsewhere in the UK). Also *Meliosma myriantha* which grows at Nymans, *Meliosma*

flexuosa which grows at the Hillier Arboretum and *Meliosma rigida* which grows at Tregrehan but is now thought to be another, as yet, unidentified species. I suspect that one of the plants labelled *M. flexuosa* bought by Caerhays, which is now dead, might well have been true to name (photographs below).



My most sincere thanks to the IDS for making this all now much simpler to understand and for Tom Hudson in sharing all his botanical and plant collecting knowledge which, as ever, is infinitely greater than my own.

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