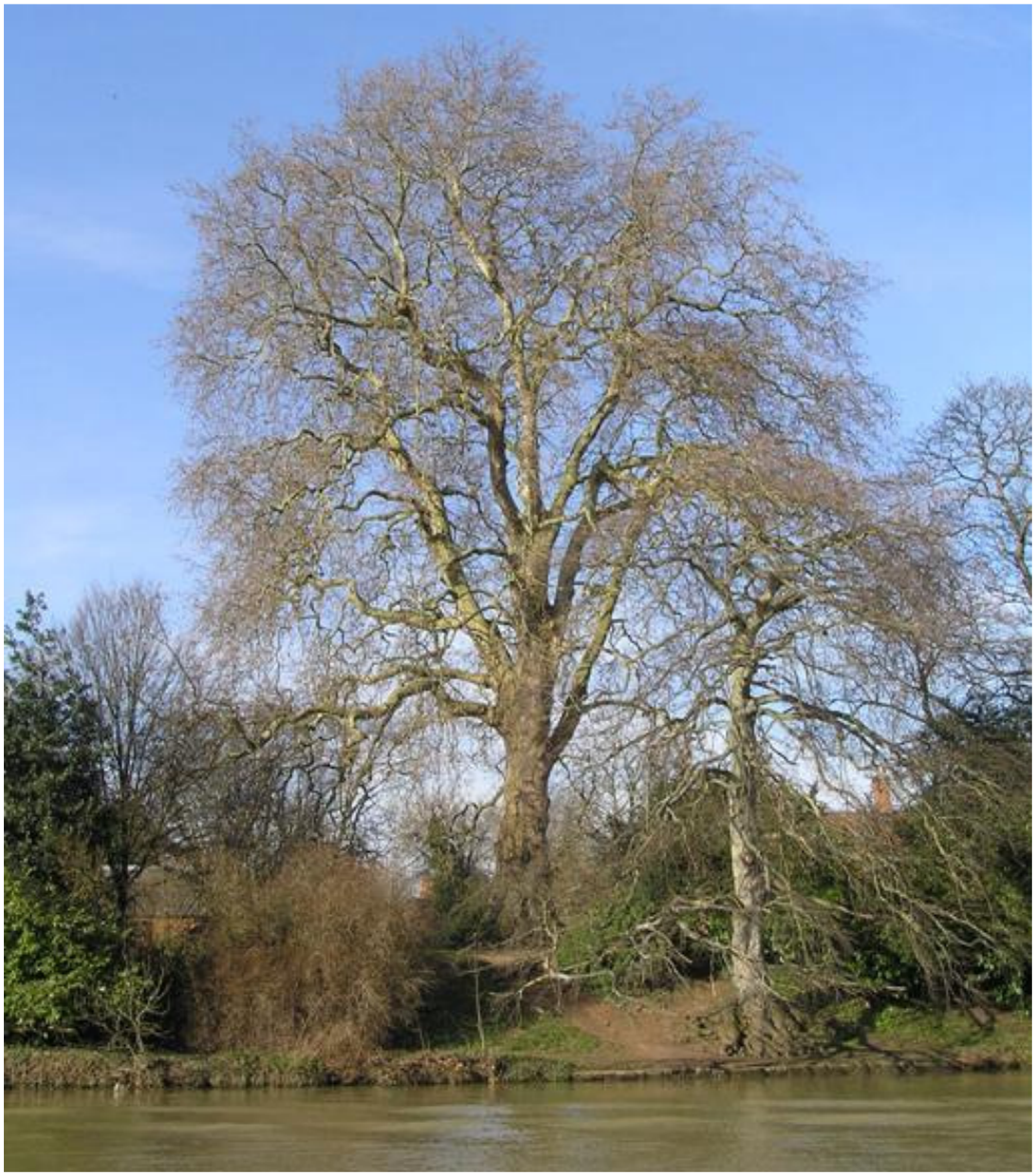
THE TREES OF WARWICKSHIRE, COVENTRY AND SOLIHULL

PART 4 - SPECIES ACCOUNTS FOR BROADLEAVED TREES (*NOTHOFAGUS* TO *ZELKOVA*)

Steven Falk, 2011



London Plane, Stratford on Avon

Warwickshire Biological Records Centre

Warwickshire County Council

The trees (alphabetical by scientific name)

Nothofagus – Southern Beeches

Deciduous and evergreen trees of the northern hemisphere, distantly related to *Fagus* beeches. They evolved in the southern hemisphere when the ancient continent of Pangaea broke up. About 40 species exist worldwide, and these include some of the dominant trees of South America and Australasia. Some have remained remarkably *Fagus*–like and even produce similar mast-type fruit, despite millions of years of geographic isolation. The various species found locally are easily distinguished by leaf shape, especially the number of veins. Barton House, Barton on the Heath, has a particularly fine collection (seven species in 2007).

Nothofagus antarctica – Antarctic Beech

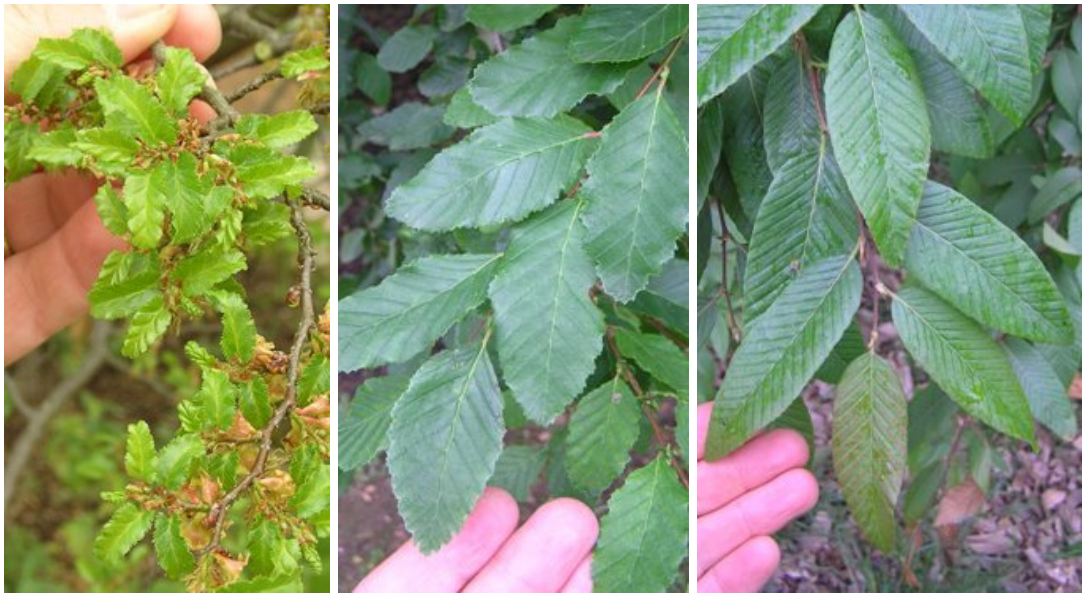
Source: S America from Chile to Cape Horn. Introduced to Britain in 1830.
Distribution: Scattered specimens in a suprising variety of locations.
Further Notes: A very distinctive tree at all ages with tiny, deciduous leaves about 2-3cm long and typically with just 4 pairs of veins and 4 corresponding blunt lobes on each side of the leaf. The young bark is smooth, shiny grey with horizontal stripes like some cherries. It can become a medium-sized, though rather gaunt tree in time, though most local specimens are young.
Key locations for seeing some: Brueton Park, Solihull (several in various places, largest 0.70m GBH/2007); Nuneaton town centre (several in front of Council House, Coton Rd); Warwick University (a relatively large, multistemmed one in the Westwood Campus); Ragley Hall Gardens (a very young one); Rock Mill Arboretum, Milverton (a young one); Warwick Castle (a couple in the car park); Compton Wynyates (one in meadow beside main entrance, 0.61m GBH/2007); Keresley House, Coventry (a young one); Barton House, Barton on the Heath (young); Arbury Hall (in private arboretum).
Largest local specimen: Warwick University, Westwood Campus (largest of three stems 0.95m @ 60cm/2007).

Nothofagus cunninghamia – Myrtle Beech

Source: Tasmania. Date of introduction to Britain unknown.
Distribution: Rare locally.
Further Notes: This species has some of the smallest leaves of any *Nothofagus*, about 1cm long and rounded.
Key locations for seeing some: Young ones at Keresley House, Coventry and Barton House, Barton on the Heath.

Nothofagus dombeyi – Coigüe

Source: S America (S central Andes). Introduced to Britain in 1916.
Distribution: Rare locally.
Further Notes: The leathery, shiny leaves are much smaller than *N. obliqua* and *N. nervosa* but more triangular than *N. antarctica*. It can produce a large and attractive tree in time.
Key locations for seeing some: Young ones at Keresley House, Coventry and Barton House, Barton on the Heath.



Foliage of our three most frequent southern beeches, Antarctic Beech (left), Roble Beech (middle) and Rauli (right) in a sequence that shows progressively increasing leaf size and number of leaf veins.

***Nothofagus fusca* – Red Beech**
Source: New Zealand. Introduced to Britain in about 1910.
Distribution: Rare locally.
Further Notes: Rather birch-like, but semi-evergreen foliage, which can give an autumn flush of copper colour, but also producing colourful dying leaves at other times of the year. The mature bark becomes flaky.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Nothofagus menziesii* – Silver Beech**
Source: New Zealand. Introduced to Britain in about 1850.
Distribution: Rare locally and nationally.
Further Notes: A small-leaved *Nothofagus*, most resembling the more familiar *N. antarctica* but with different lobing of the leaf margins.
Key locations for seeing some: Barton House, Barton on the Heath (a young one).

***Nothofagus nervosa* – Rauli**
Source: S America (southern Andes). Introduced to Britain in 1910.
Distribution: Rare locally.
Further Notes: A fast growing conical tree with leaves somewhat like a hornbeam and with many more veins than Roble Beech *N. obliqua* (15-18 pairs as opposed to 6-11). Known as *N. procera* until recently.
Key locations for seeing some: Warwick Castle (one in Fox's Study near the Bird of Prey Enclosure, 0.90m GBH/2007); Warwick University (some in zone 7, teste D. Howell); Luddington Horticultural Centre in water meadow (teste Pam Copson, 1980s).

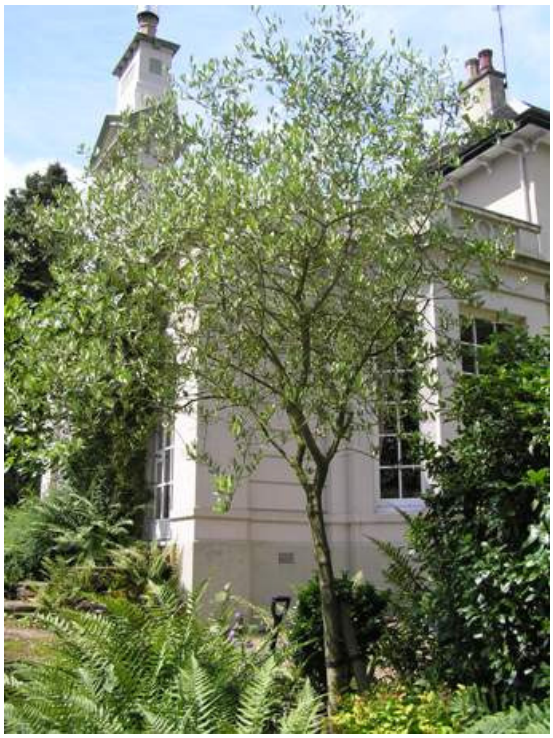
***Nothofagus obliqua* – Roble Beech**
Source: S Andes of Argentina and Chile. Introduced to Britain by 1902, possibly earlier.
Distribution: Occasional in local parks, golf courses and larger gardens.
Further Notes: A rather hornbeam-like species, the leaves typically with 8–11 pairs of veins and a similar number of corresponding blunt lobes on each side of the leaf. The slender branches tend to weep strongly and older specimens can become attractive, slim trees with cascading foliage. It can produce fine autumn colours.
Key locations for seeing some: Warwick: Priory Park (a fine one near the main entrance) and Warwick Castle (a large one in grounds north of castle walls); Jephson Gardens (one near the main entrance – has been incorrectly referred to as *N. procera* in some lists); Kingsbury Water Park (along Bodymoor Heath Lane close to the main entrance); Brueton Park, Solihull (several); Allesley Park, Coventry (several); Stratford Golf Course (many fine ones in an avenue at SE end); Coughton Court (a couple in field in front of house); Middleton Hall (a fine one at end of drive near car parks, 1.79m GBH/2006); Coton House near Rugby (one amongst buildings 1.21m GBH/2007); Crewe Lane Arboretum, Kenilworth; Talton House near Newbold on Stour (a young one); Oversley Wood (several in the arboretum zone).
Largest local specimen: Warwick Castle 1.94m GBH/2009.

Nothofagus procera* – the old name for *N. nervosa

***Nothofagus solanderi* – Black Beech**
Source: New Zealand. Introduced to Britain by 1917.
Distribution: Rare locally and nationally.
Further Notes: The small leaves are arranged in flat sprays and have unlobed leaf margins in contrast to other locally-found *Nothofagus* species. They are very glossy above but dull-grey below.
Key locations for seeing some: Barton House, Barton on the Heath (young).

***Nyssa sylvatica* – Tupelo (Black Gum)**
Source: N America from Ontario to NE Mexico, where it favours waterlogged areas. Introduced to Britain in 1750.
Distribution: Very occasional in local gardens and parks.
Further Notes: A large and attractive deciduous tree when mature, producing some wonderful autumn golds and reds. The tree made the news in 2005, when a Tupelo-dominated wetland in Arkansas was found to harbour a population of the spectacular Ivory-billed Woodpecker, a bird that had been considered extinct for over half a century. The leaves are rather bay-like and the minute flowers give rise to small black berries.
Key locations for seeing some: Jephson Gardens, Leamington Spa (a young memorial tree near to the Westfelton Yew); Rock Mill Arboretum, Milverton (recent planting by D. Howells); Crewe Lane Arboretum, Kenilworth (a young one); Ilmington Manor (a young one); Arbury Hall (a couple of small ones in private gardens/lakes). The bushier Chinese Tupelo *N. sinensis* may be present at Radway Grange (on the site's tree list but not found on a 2007 visit).

***Olea europaea* – Olive**
Source: Probably originating in SW Asia and Arabia, but long cultivated throughout the Mediterranean and occasionally in Britain.
Distribution: Rare locally.
Further Notes: A rather privet-like, evergreen, shrubby tree that struggles to grow in Britain, where it is most typically cultivated in pots. The familiar, edible fruit are the source of olive oil and many varieties exist, with fruit of varying size, colour and taste. Some of the oldest trees in the Mediterranean are estimated to be more than two thousand years old.
Key locations for seeing some: unpotted ones at Keresley House, Coventry and Barton House, Barton on the Heath (the latter one producing fruit).




A young Olive at Keresley House (left). Foliage and flowers of an Osmanthus at Jephson Gardens (right).

***Osmanthus delavayi* – Chinese Holly (Delavay's Osmanthus) and its hybrids.**
Source: China. Introduced to Europe from 1890.
Distribution: Seemingly scarce locally.
Further Notes: An evergreen shrub somewhat resembling a privet or phillyrea growing to 6-7metres. It produces masses of sweetly-scented white trumpet-shaped flowers in spring. Burkwood Osmanthus *O.* x *burkwodii* is a hybrid between *O. delavayi* and another Asian species *O. decorus*.
Key locations for seeing some: Delavay's: Keresley House. Burkwood: War Memorial Park, Coventry (a fine one by the sunken garden, determined by O. Johnson based on images). Unchecked: Jephson Gardens (a fine one in west side, adjacent to Newbold Terrace).

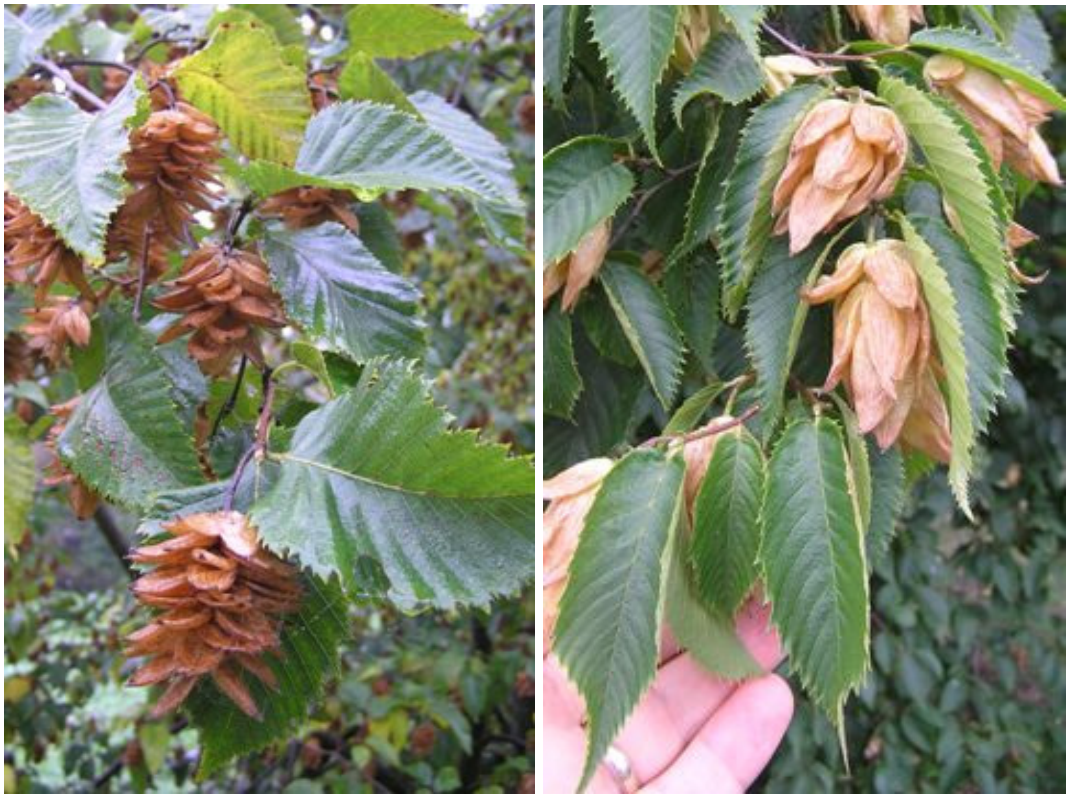
***Osmanthus heterophyllus* – Holly-leaved Osmanthus**
Source: Japan. Introduced to Britain in 1856.
Distribution: Rare locally.
Further Notes: An evergreen shrub with spiny leaves that area a little reminiscent of Holly *Ilex aquifolium*. It produces masses of sweetly scented flowers in the autumn. Form 'Aureomarginatus' has the leaf margins deep yellow.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting of 'Aureomarginatus' by D. Howells); Keresley House, Coventry ('Aureomarginatus' on owner's 2007 plant list, but not seen by the author).

***Ostrya carpinifolia* – European Hop-hornbeam**
Source: SE Europe to the Caucasus. Introduced to Britain in about 1724.
Distribution: Just a few local sites, but has been used in some recent planting schemes.
Further Notes: Closely resembling Common Hornbeam *Carpinus betulus* but with leaves that average a little larger and longer and highly distinctive hanging fruit that look remarkably like those of Hop. In spring it produces long, hazel-like male catkins, which often remain attached and wilted alongside the fruit in late summer. At least two further *Ostrya* species exist in local collections (see those species accounts for distinguishing features).
Key locations for seeing some: Brueton Park, Solihull (one one along north edge between Parkridge Centre and Malvern Park with a second smaller *Ostrya* species, possibly Ironwood *O. virginiana*, beside it); Priory Park, Warwick (a couple of young ones); Leamington Spa: Christchurch Gardens and Jephson Gardens (a young one in each in c2006); Brownsover Hall Hotel (a couple of quite tall ones near the giant Horse Chestnut, largest 1.12m GBH/2006); Sherbourne Fishing Pool, near Barford; Rock Mill Arboretum (young planting).
Largest local specimen: Brueton Park (1.41m GBH/2006).

***Ostrya japonica* – Japanese Hop-hornbeam**
Source: Japan, Korea and China. Introduced to Britain in 1888.
Distribution: Rare locally.
Further Notes: Resembling *O. carpinifolia* and *O. virginiana* but its leaves are smaller, have fewer veins and are velvety-hairy beneath.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

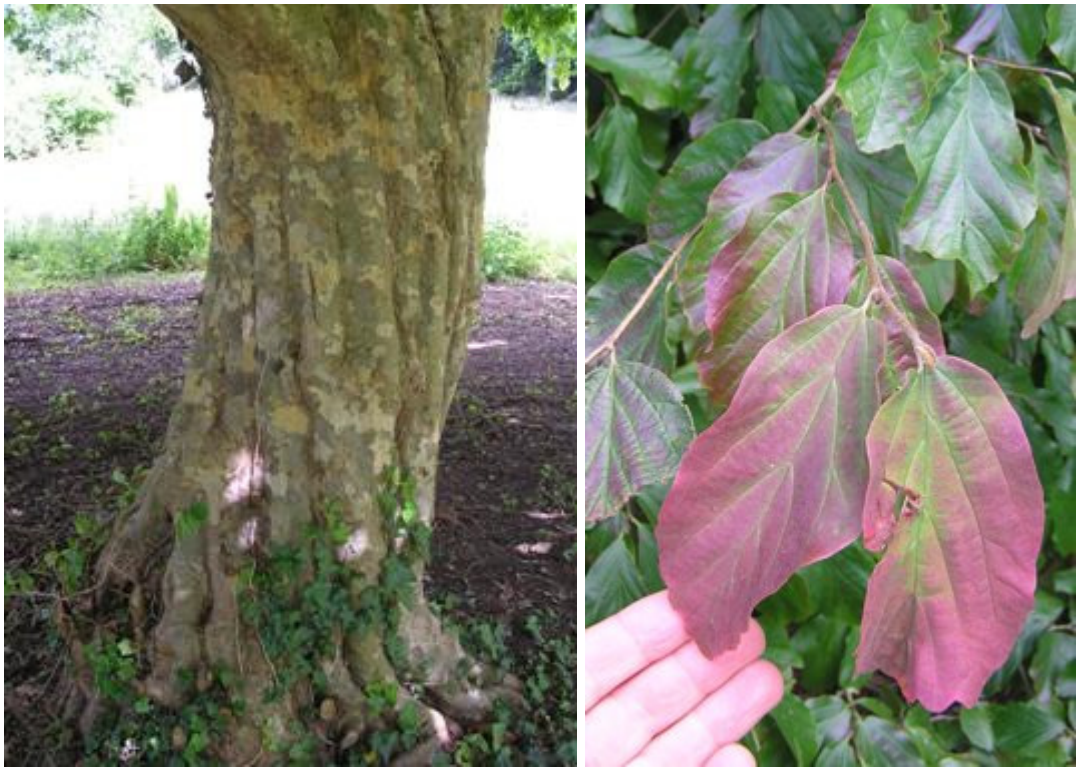
***Ostrya virginiana* – Ironwood (requires confirmation)**
Source: E USA. Introduced to Britain in 1692.
Distribution: Rare locally.
Further Notes: The specimens concerned closely resemble *O. carpinifolia* but have leaves that average smaller with fewer veins, plus hanging fruit clusters that have fewer but larger fruit bladders. At Brueton Park, Solihull, the suspected Ironwood specimen grows next to a typical *carpinifolia*, and the differences in leaf size and fruit clusters are quite striking. In mid October 2007, the suspected Ironwood had lost most of its leaves whilst the *carpinifolia* was still fully green.

Key locations for seeing some: Brueton Park, Solihull (a specimen beside the main path leading from the Parkridge Centre to Malvern Park, with a larger *O. carpinifolia* beside it). A small *Ostrya* that recently died at Jephson Gardens, Leamington Spa (in the NE corner beside the Keaki) appears to have been the same species.



Foliage and hop-like fruit of Hop-hornbeam (left) and a probable specimen of its N American relative, Ironwood (right) showing the very different fruit.

***Parrotia persica* - Persian Ironwood**
Source: Forests S of the Caspian Sea. Introduced to Britain in 1841.
Distribution: Occasional in local parks and larger gardens.
Further Notes: Typically forming a large, spreading shrub rather than a tree, and popular for its fine autumn colours that can include yellow, orange, red and deep purple. The leaf shape and venation make for a reasonably distinctive species. The inconspicuous flowers appear in late winter and the mature bark flakes in small patches like that of a plane tree. The form 'Vanessa' grows with an upright habit.
Key locations for seeing some: Jephson Gardens, Leamington Spa (several, including a fine one just north of the river in the east side); St Nicholas Park, Warwick (a fine one); Ragley Hall Gardens (a large, spreading specimen); Brownsover Hall Hotel (a fine one in the front garden, 1.61m/2006); Riversley Park, Nuneaton N of river); Rock Mill Arboretum, Milverton (young planting of 'Vanessa').
Largest local specimen: Ragley Hall Gardens (1.86m @ 1m/2005), one of the largest in Britain.



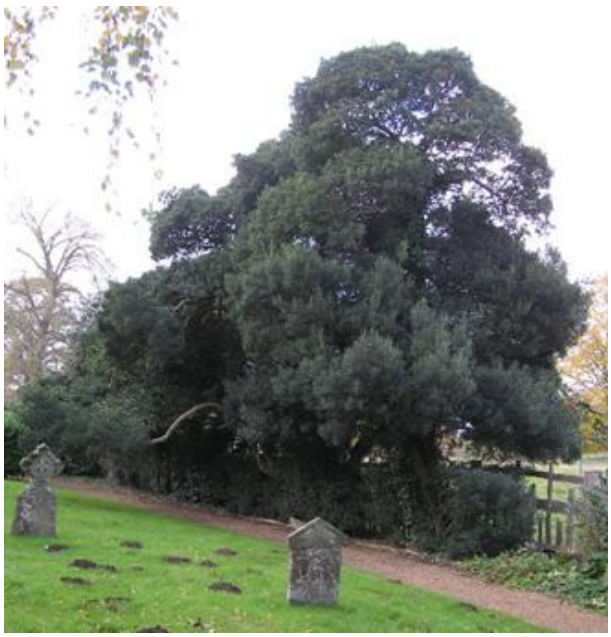
The plane-like bark of one of Britain's largest Persian Ironwoods at Ragley Hall (left) and the fine autumn colour this species produces (right).

***Paulownia fargesii* – Farge's Foxglove Tree**
Source: W China. Introduced to Britain in about 1896.
Distribution: Rare locally.
Further Notes: Resembles the more familiar *P. tomentosa* but with almost hairless leaves and paler flowers.
Key locations for seeing some: Barton House, Barton on the Heath (a young one).

***Paulownia fortunei* – Empress Diamond**
Source: S China, Taiwan & E. Himalayas. Introduced to Britain by 1940.
Distribution: Rare locally.
Further Notes: Resembles the more familiar *P. tomentosa* but has slenderer, darker leaves and flowers that are creamy-white to lilac with cream insides bearing purple splashes.
Key locations for seeing some: Barton House, Barton on the Heath (a very young one).

***Paulownia tomentosa* - Foxglove Tree**
Source: N China, but introduced into Britain from Japanese stock in 1838.
Distribution: Several local parks and larger gardens, occasionally in smaller, private gardens.
Further Notes: The large, vaguely triangular leaves are very similar to the unrelated catalpas and bean trees and can be 40cm long. But the erect clumps of tubular, blue flowers produced in May and June (before the leaves have expanded) are very different. These eventually produce clumps of round, brown downy fruits, very unlike the hanging pods of catalpas and bean

trees. In time it forms a medium-sized, broad tree with a rather irregular shape.
Key locations for seeing some: Riversley Park, Nuneaton (several young ones); Priory Park, Warwick (a fine one north of the main path towards the railway station); Stratford riverside (immediately south of the Theatre); Ragley Hall Garden (a young one); Upton House (a fine one near the bog garden, 1.13m GBH/2006); Miner's Welfare Park, Bedworth (a young one); Reed Business College, Little Compton (1.22m GBH/2006); Sherbourne Fishing Pool, near Barford (see below); Eathorpe Hall (a tall one of 1.35m GBH/2007 in gardens); Arbury Hall (in private arboretum).
Largest local specimen: Sherbourne Fishing Pool, near Barford (1.60m GBH/2007).

The beautiful flowers of a Foxglove Tree (left). A very fine Phillyrea at Charlecote Church (right) - a shrubby evergreen tree which resembles a small Holm Oak.

***Phellodendron amurense* – Amur Cork Tree**
Source: NE Mainland Asia. Introduced to Britain in 1885.
Distribution: Rare locally.
Further Notes: A medium-sized tree with alternately arranged, pinnate leaves resembling those of certain walnuts *Juglans* or wingnuts *Pterocarya* and silver-haired winter buds. Older trees have ridged and furrowed corky bark. Female trees produce bunches of shiny black fruits.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Phillyrea latifolia* – Phillyria**
Source: The Mediterranean. Long-grown in warmer parts of Britain.
Distribution: Occasional in local historic gardens, churchyards and parks, though easily overlooked as a small Holm Oak *Quercus ilex*.
Further Notes: An evergreen shrub or small tree with rather privet or osmanthus-like, opposite leaves that have small spiny teeth on their margins.

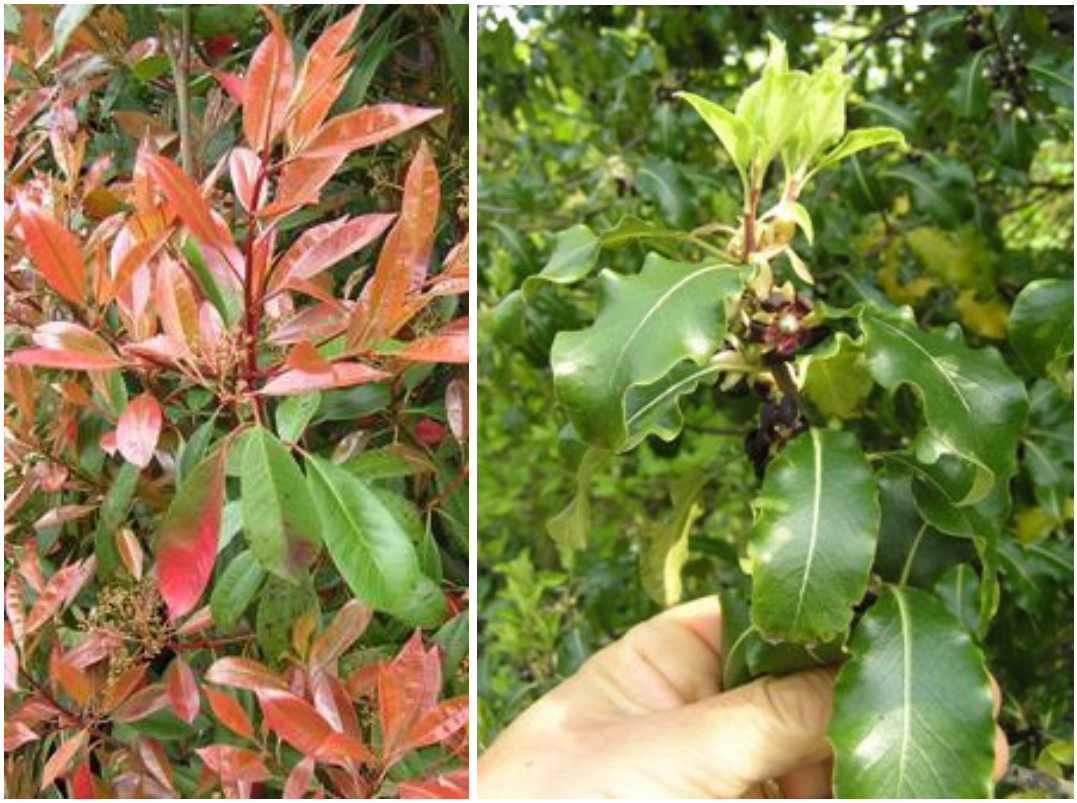
The inconspicuous greenish-white flowers emerge in early summer and give rise to 1cm blue-black berries on female plants (specimens are either male or female). There is some variation in the leaf shape of local specimens, as a Little Compton specimen has much more pronounced teeth on the leaf margin and some other specimens have particularly narrow leaves. The bark of mature specimens is closely square-cracked – rather reminiscent of Holm Oak, and it is occasionally misidentified as this, though the leaves are much smaller and green beneath (but beware Ubame Oak *Q. phillyreoides*, which is much more Phillyrea-like).
Key locations for seeing some: Charlecote Church (some fine multi-stemmed ones along north boundary overhanging the Park); Charlecote Park (several fine ones west of café, largest trunk 1.36m @ 1.2m/2007); Reed Business College, Long Compton (a fine one against north side of the Hall); Coughton Court (NE of walled garden towards riverside walk); Wellesbourne Hall (a very fine one opposite Hall entrance); Studley Castle (the remains of a formerly large one beside the building, but only a sprouting stump remained). A specimen at Jephson gardens, Leamington Spa along the north edge of the west half near the big *Thujas* may represent the related *P. angustifolia*.
Largest local specimen: The largest single 'trunk' measured belongs to the Studley Castle specimen (1.87m @ 80cm/2007 just below the point of cutting). The largest in terms of crown is probably the Wellesbourne Hall specimen (3.12m @ base/2007, dividing low into three stems, the largest of which is 1.59m @ 50cm).

***Photinia davidiana* – Chinese Photinia (Chinese Stranvaesia)**
Source: China to Borneo. Introduced to Britain in 1869.
Distribution: Rare locally.
Further Notes: A large evergreen shrub or small tree with bright red or pink young foliage which matures to smooth, leathery green. The hawthorn-like flowers give rise to hanging clumps of intense red berries by autumn. This is one of about 40 *Photinia* species, members of the rose family found mostly in subtropical E and SE Asia.
Key locations for seeing some: Brueton Park, Solihull (beside a shelter at the Malvern Park end); Keresley House, Coventry; Keresley House, Coventry (on owner's 2007 plant list, but not seen by the author).

***Photinia* x *fraseri* - Red Tip Photinia**
Source: A hybrid between *P. glabra* (Japanese Photinia) and *P. serrulata* (Chinese Photinia).
Distribution: This appears to be the common local Photinia that is popular in local parks, gardens and other property screens.
Further Notes: A medium-sized shrub (when mature) with glossy, evergreen leaves that are green when mature but contrasting bright red when young, so that a characteristic combination of green and reddish leaves exists throughout the year. Flowers are arranged in white clumps rather like a *Sorbus*. Beware smaller shrubs such as *Pieris* that also have contrasting red young leaves (but very different flowers).
Key locations for seeing some: Warwick University (various places); Jephson Gardens, Leamington Spa (shrubbery N of Glass House); Ragley Hall Gardens.

***Photinia niitakyamensis* – a Photinia**
Source: Taiwan. Introduced to Britain in 1980.
Distribution: Rare locally.
Further Notes: A very rare evergreen shrub with clumps of white flowers that give rise to bright pinkish-red fruit that often persist well into winter.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Picrasma quassiodes* - India Quassiawood**
Source: Far East. Introduced to Britain in 1890.
Distribution: Rare locally.
Further Notes: A small, hardy tree with attractive pinnate leaves. Tiny yellow-green flowers are produced in May and June followed by red, pea-like fruits. It can produce a fine autumn show of colour ranging from yellow to scarlet.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells).



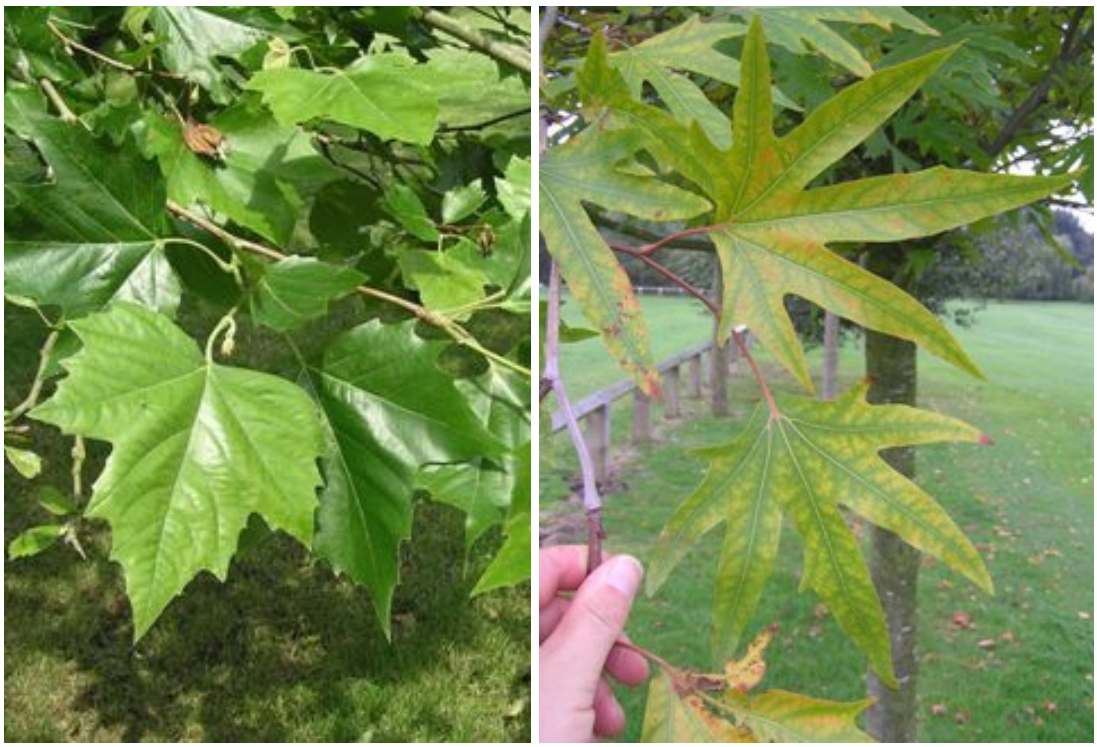
The fine colour of Red-tip Photinia, a popular compoment of local shrubberies (left). Kohuhu (right) is a shrub from New Zealand with distinctive wavy-leaved foliage.

***Pittosporum tenuifolium* – Kohuhu**
Source: New Zealand. Introduced to Britain in about 1850.
Distribution: Occasional in larger gardens.
Further Notes: A shrub of dense rounded habit, occasionally forming a small tree in more sheltered spots. The shiny, leathery leaves lack teeth but have characteristically wavy margins. In var 'Purpureum' (also known as 'Tom Thumb') the foliage becomes dark purple.

Key locations for seeing some: Miner's Welfare Park, Bedworth (some young 'Purpurea'), Quaker's Meeting House, Warwick (one at far end of garden); Rock Mill Arboretum, Milverton (recent planting of Purpureum'); Keresley House, Coventry (including a young 'Purpureum'); 'The Yews', Moreton Paddox (a young one).

Platanus – Planes

Large, maple-like deciduous trees of the northern hemisphere (six or seven species in total) with alternate leaves (opposite in maples). The fruit are round golf-ball sized clusters of bristly seeds which hang from long stalks, quite unlike any other tree with maple-type foliage except sweetgums *Liquidambar,* which have different bark and smaller leaves. Most planes have bark that peels off in small patches leading to an attractive patchwork of creams, olives, browns and greys on the trunk. None of the species are native to Britain.



The maple-like foliage of London Plane (left) and the much more dissected leaves of Oriental Plane 'Digitata' at Stratford's Rec (right).

Platanus x *hispanica* - London Plane

Source: Probably a 'transatlantic' hybrid between the American Plane *Platanus occidentalis* (the 'Sycamore' of North America) and the Oriental Plane *P. orientalis* which is native to Eastern Europe and West Asia. Thought to have originated in Spain or France in about 1650 and probably introduced to Britain not long after.
Distribution: Widespread in our area, especially in parks, larger gardens and some urban roadsides. Still much planted in urban areas.
Further Notes: Capable of forming a very large and attractive tree with a winter silhouette characterised by a myriad of twisting, pendulous twigs (like a loose 'perm'). The leaves are less deeply lobed than *P. orientalis* and the fruit

are usually arranged singly or in pairs (groups of 2-5 in *P. orientalis*). The London Plane exhibits 'hybrid vigour', growing much better in Britain than either parent, and it is usually strong and pollution tolerant. The American parent is rare in Britain and grows poorly, but watch out for Oriental Plane which has been found at a few local sites.
Key locations for seeing some: 18th century specimens: Riverside Gardens, Stratford (a very large one near the brass rubbing centre, see below); Honington Hall (several fine ones, the largest 6.19m GBH /2006); Packington Park (several fine ones near the Hall, largest measured 5.19m GBH/2006); Compton Verney (several large ones, largest beside lake bridge was 4.67m/2006); Stoneleigh Abbey (several fine ones, largest was 5.94m GBH/2006); Warwick Castle (several fine ones, the largest was 6.10m/2006); Farnborough Park (a couple of large ones, largest 4.04m/2006 beside rose garden). Others: Stratford: several in the Rec; Coventry: Holyhead Road (numerous roadside specimens at the Counden end), Coat of Arms Bridge Road (near Stivichall Grange School), Allesley Old Road (numerous roadside pollards); Saxon Mill, Warwick (several large ones alongside the R. Avon); Leamington Spa: Newbold Terrace beside Jephson Gardens and Hamilton Terrace (the Parade end).
Largest local specimen: Stratford Riverside Gardens just south of the brass rubbing centre (6.33m GBH/2007 – see cover of this part).

***Platanus orientalis* - Oriental Plane**
Source: A native to SE Europe and possibly W Asia. Long-grown in Britain.
Distribution: Rare locally.
Further Notes: Not a tree that grows particularly well in the Midlands (it prefers the warmer south). The leaves are much more deeply lobed than the familiar London Plane *P.* x *hispanica* (a hybrid between this species and American Plane *P. occidentalis*) and the fruit is more rigidly spined and typically in groups of 2-5 (more typically groups of 1-2 in London Plane). At least three forms are recorded locally, which vary in the degree of leaf lobing. The type form is most like London Plane, but with leaves consistently more deeply lobed, the middle (apical lobe) being much longer than wide (typically wider than long in London Plane). Form 'Insularis' from Cypress has more deeply incised leaves than the type form and resembling Silver Maple 'Laciniata'. There is also form with very deeply incised leaves called 'Digitata' (because the leaf resembles a hand with fingers).
Key locations for seeing some: Shipston on Stour Cemetery (a fairly large one of the type form, north edge of cemetery); Crewe Lane, Kenilworth (a medium-sized 'Insularis'1.26m GBH/2006 beside road); The Rec, Stratford (a couple of young 'Digitata' around the overflow car park); Warwick New Road, Leamington (a young one at junction with Warwick Place); Arbury Hall (a young one in the burial area); Stoneleigh Abbey (a young one in gardens).
Largest local specimen: Shipston on Stour Cemetery (2.13m GBH/2007).

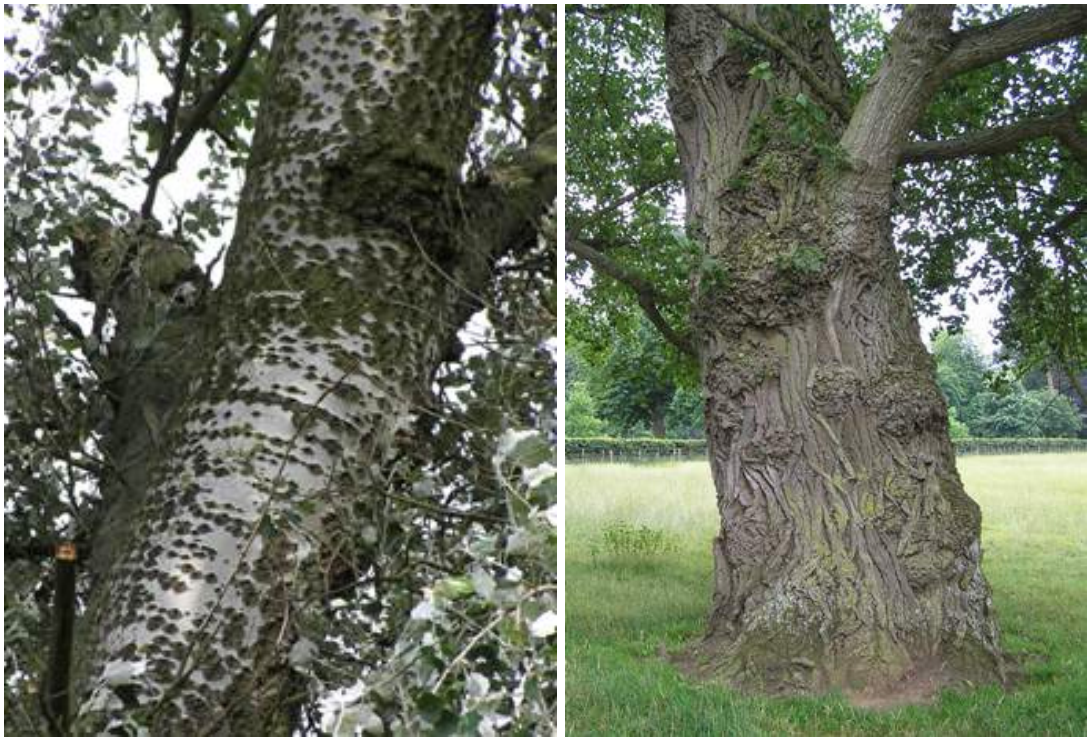
***Populus* – Poplars**
Mostly large deciduous and fast-growing trees related to willows and sharing many features with them, such as leaves being arranged alternately, trees typically being either being male or female ('dioecious'), and seeds being fluffy and wind dispersed (hence the American name 'cottonwood'). Unlike willows,

the catkins are long and drooping, and use wind-aided pollination. The male catkins are reddish-purple, whilst those of the females resemble strings of green beads. Most species have large oval or triangular leaves and balsamic-smelling, resinous buds. About 35 species occur worldwide, all within the northern hemisphere and usually in damper places. Two species, *P. nigra* and *P. tremula* are native to Britain. Identification of some poplars can be challenging – check the shape, colour and emergence date of the leaves, the bark texture, the downiness of the shoots and leaf stalks, the size and stickiness of the buds and the overall shape of the tree. The presence of certain galls and mistletoe can also help.

Three examples of poplar foliage, Aspen (left), White Poplar (middle) and Native Black Poplar (right).

***Populus alba* – White Poplar**
Source: S Europe. Possibly introduced from Holland in the 16th century, though some authorities have claimed it is a native of Britain.
Distribution: Widespread and frequent locally, particularly within parks, larger gardens, urban roadsides and shrubberies.
Further Notes: The very silvery foliage makes this a popular and distinctive tree, though relatively few old specimens exist locally. The trunk and main branches are typically chalky-white with large, diamond-shaped marks that give the impression of multiple 'shot-gun' wounds. The leaves are rather maple-like, especially in young trees, becoming less so in mature canopy foliage. It is possible to mistake this species for *P.* x *canescens*, a much larger hybrid between *P. alba* and Aspen *P. tremula* (see that species for differences). Bolle's Poplar 'Pyramidalis' is an upright (fastigiate) form that resembles a rather broad Lombardy Poplar but with a whiter trunk and maple-like leaves. 'Richardsii' is a slow-growing form with bright yellow leaves in autumn.
Key locations for seeing some: Abbey Fields, Kenilworth (a mature one downstream from the swimming baths, 3.13m GBH/2006 but much reduced by surgery in 2005); Moreton Hall (some mature ones in front of the Hall); Ashorne Hill (a fine one between the Conference Centre and Ashorne village 2.69m GBH/2006); Warwick (several at the Coventry Road, Spinney Hill

Junction); Stoneleigh Abbey (a couple of mature ones on river island west of Abbey (largest 2.63m GBH/2007); Newnham Paddox Art Park (a mature one of 2.53m GBH/2007); Weston & Waverley Wood (numerous specimens along the east flank of the wood, though it does not grow strongly in wooded situations). Bolle's Poplar: Pump Room Park, Leamington Spa (a couple of mature ones, largest 2.57m/2006); Riversley Park, Nuneaton (2.68m GBH/2006) and Coventry: War Memorial Park, (several, but a 2.83m/2004 one recently died) and Spencer Park (a very fine one, see below); Brandon Hall Hotel (several beside car park, largest 2.01m GBH/2009). Richardsii: Crewe Lane Arboretum, Kenilworth; Moreton Hall; Talton Hall near Newbold on Avon.
Largest local specimens: Normal form: Luddington village, edge of garden overlooking weir/lock (3.26m @ 1m waist, with trunk forking at c2.5m/2007). Bolle's: Spencer Park, Coventry (2.97m GBH/2008), one of the largest in Britain.



The strikingly-marked bark of White Poplar (left) contrasted with that of Native Black Poplar (right).

Populus balsamifera **(see *P. trichocarpa*)**

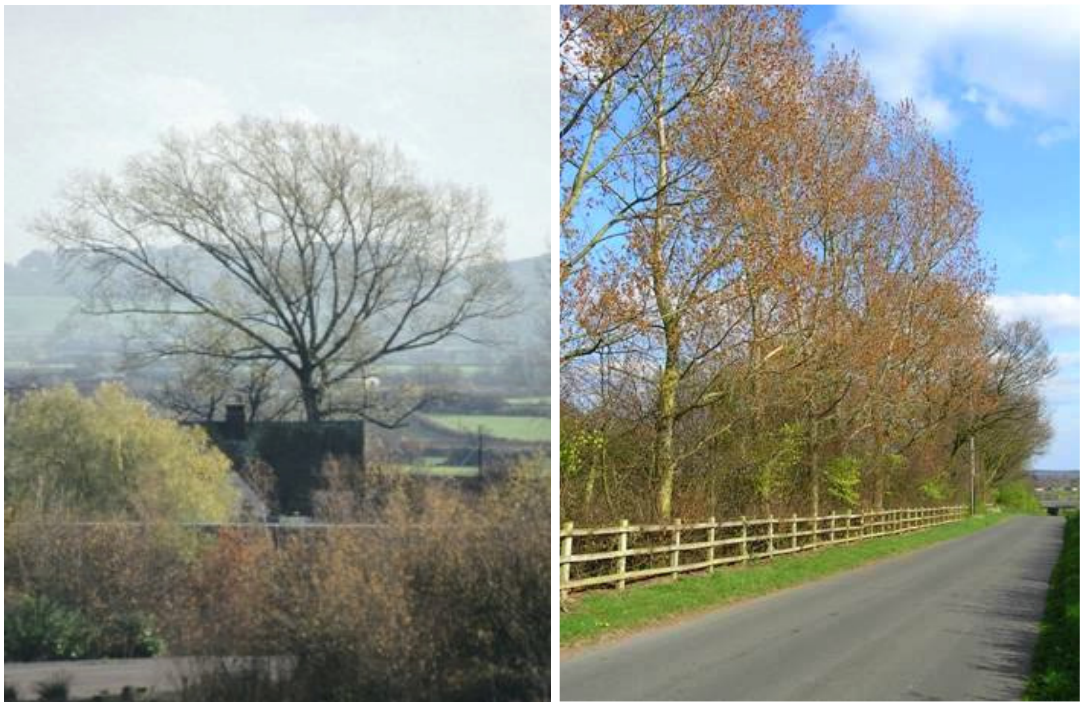
Populus **'Balsam Spire'**
Source: A selected hybrid ('Tacatricho 32') of two N American poplars, the Western Balsam Poplar *Populus trichocarpa* and the Eastern Balsam Poplar *P. balsamifera*.
Distribution: Locally frequent as a component of shelterbelts along field margins and roadsides, in and around plantations, and occasionally in parks and larger gardens.
Further Notes: Balsam Spire is one of the neatest-looking poplars with an almost perfectly cylindrical shape. The leaves can resemble both those of

Jack's Poplar *P.* x *jackii* (though averaging smaller) or sometimes those of Hybrid Black Poplars *P.* x *canadensis* when more triangular (but with much smaller teeth on the leaf margin). Foliage at the base of the tree has a tendency to become oversized and misshapen compared with canopy foliage, though not to the extent of *P.* x *jackii* and it is relatively immune to canker compared to that species. Like all our local balsam poplars, it is a female tree with sticky buds that are highly aromatic in spring.
Key locations for seeing some: Brueton Park, Solihull (a fine one between pinetum and birch zone); Clarendon Place, Leamington Spa (one overlooking Clarendon Square); Stoke, Coventry (junction of Brinklow Road and Clifford Bridge Road); Hatton Country World (the tree screens in fields south of the complex); Draycote Water (some of the healthier-looking poplars at the Thurlaston end); possibly the blocks of poplars at Whichford Wood.
Largest local specimen: Brueton Park (2.30m/2007).

***Populus* x *berolinensis* – Berlin Poplar**
Source: A hybrid of Lombardy Poplar *Populus nigra* 'Italica' and an Asiatic balsam poplar *P. laurifolia*.
Distribution: Several locations, especially municipal parks and suburban greenspace, but possibly overlooked elsewhere.
Further notes: The oval leaves with narrow bases (especially those that arise from trunk shoots) resemble those of Simon's Poplar *P. simonii*, though it lacks the strongly pendulous foliage of that species. The canopy leaves show a tendency to become rather rhomboidal reflecting the *P. nigra* parent. It supports *Pemphigus* spiral galls on the leaf stalks, a phenomenon that has not been observed in local poplars other than pure *P. nigra* varieties. In other respects of shape and bark, it is much like a balsam poplar, providing an early flush of bright green foliage and colouring yellow and losing its foliage before hybrid black poplars. It is said not be be planted much today, and the Warwickshire specimens mostly date from the mid twentieth century.
Key locations for seeing some: Linnell Road Open Space, Hillmorton, Rugby (20 fine specimens within a mixed poplar planting scheme); Stratford Rec (several); Oldbury, near Hartshill (about 6 specimens beside driveway leading to bungalow beside Oldbury Camp); Honington Hall (two young specimens); Stratford Fishermans Car Park area (a probable specimen).
Largest local specimen: Linnell Road Open Space (2.24m/2009).

***Populus* x *canadensis* – Hybrid Black Poplars**
Source: A group of 'transatlantic' hybrids typically between Black Poplar *Populus nigra* (usually subspecies *nigra*) and the American Eastern Cottonwood *P. deltoides*. Such hybrids have been developed on a number of occasions since about 1750 to produce fast growing timber and amenity trees.
Distribution: Widespread in our area, particularly within roadside plantings, property screens and plantation woodland. Occasional in municipal parks, historic properties, open farmland, larger gardens and urban green space.
Further Notes: Many strains exist locally, mostly male varieties such as 'Serotina' and 'Robusta', plus a few female ones such as 'Marilandica' (less popular because they produce masses of fluffy seeds). The precise parentage of some strains is unclear or just very complicated due to back-crossing and careful selection. Further hybridisation of Hybrid Black Poplars with Balsam

Poplars only serves to complicate matters further and stems from the forester's desire to produce faster and straighter-growing hardwood trees for the timber industry. Hybrid Black Poplar trees are often mistaken for Native Black Poplar *P. nigra betulifolia* but are typically much neater-looking with main side branches usually angled upwards, less dense foliage and twigs that are not strongly upcurved at their tips (infact quite pendulous in some varieties). The leaves tend to be triangular and without drawn-out leaf tips. They often have glands on the leaf stalk near the base of the leafblade, but the leaf stalks never seem to get infected by *Pemphigus* spiral galls. The trunks generally lack bosses and can have very neat parallel ridges. Hybrid Black Poplars often get infested with mistletoe, an occurrence that has never been recorded in local *betulifolia*. Distinctive local varieties include: 'Robusta' (a neat, symmetrical tree with new leaves that give a particularly strong flush of orange in spring), 'Serotina' (one of the last trees to come into leaf, with a distinctive, assymetrical, 'swept-over' silhouette once mature, a neatly ridged trunk and often attaining great height), 'Serotina Aurea' (the 'Golden Poplar' – its foliage stays a yellowish-green all summer) and 'Marilandica' (the 'Railway Poplar' - a female clone with rather pendulous shoots and usually many twigs on the trunk, often resembling Serotina in shape).



The massive 'swept-over' crown of a Hybrid Black Poplar 'Serotina' at Kites Hardwick (left) one of the last trees to come into leaf. The bright orange new foliage of another variety 'Robusta' (right) which produces its foliage several weeks earlier.

Key locations for seeing some: Golden Poplar: London Road, Coventry (three opposite the Cemetery); Caldecott Park, Rugby (two fine ones); Moreton Hall (beside the lane running west of the Hall); Warwick Castle (river island); Chadwick End (corner of Wheeler Close); Kenilworth (garden behind Castle Hill, easily seen from Abbey Fields). Robusta: Halford (a nice row on the Fosse Way just south of the village); Ettington (nice row on the A422 just west of the village); Linnell Road Open Space, Hillmorton (numerous fine

ones of about 3m GBH/2009), Ufton Fields Nature Reserve (in the central woodland block). Serotina: Barford (just north of the river bridge); Kites Hardwick (at the entrance to Draycote Water beside the A426); Bagington (many beside the River Sowe bridge); Knowle Park, Knowle (two large ones, the largest 6.0m GBH/2006); Alcester (close to R. Arrow/Blackthorn Way, 4.80m GBH/2006); Newbold Revel (along north edge of estate, 5.66m/2006); Coughton Court (by riverside walk 5.41m/2006); Elmdon Park (a 5.15m/2006 specimen at north end near the brook). Females: Ufton Fields Nature Reserve (car park); Abbey Fields, Kenilworth (two fine females, plus one male beside the brook, largest female 4.66m/2009); Allesley Old Road, Coventry (two classic Regenerata); Windmill Road Cemetery, Longford, Coventry (a fine 'Regenerata', 3.66m/2007); Coton House, near Rugby (numerous mature trees that appear to be 'Regenerata' in surrounding parkland, the largest measured 5.25m GBH/2007). Mixed forms: Coughton Court and Abbey Fields, Kenilworth.
Largest local specimens: Single trunk: a very tall 'Serotina' in a field immediately south of Duke Bridge, Duke End, near Coleshill (6.60m GBH/2009); the largest definite 'Robusta' to date is one of 3.08m GBH/2009 at Linnell Road Open Space, Hillmorton, though a tree of 4.56m GBH/2009 at Abbey Fields, Kenilworth may be a very mature specimen; Multistemmed: Hams Hall Environmental Study Centre (7.21m@1.35m/2006, forking at 1.5m into 5.53m and 4.24m trunks).

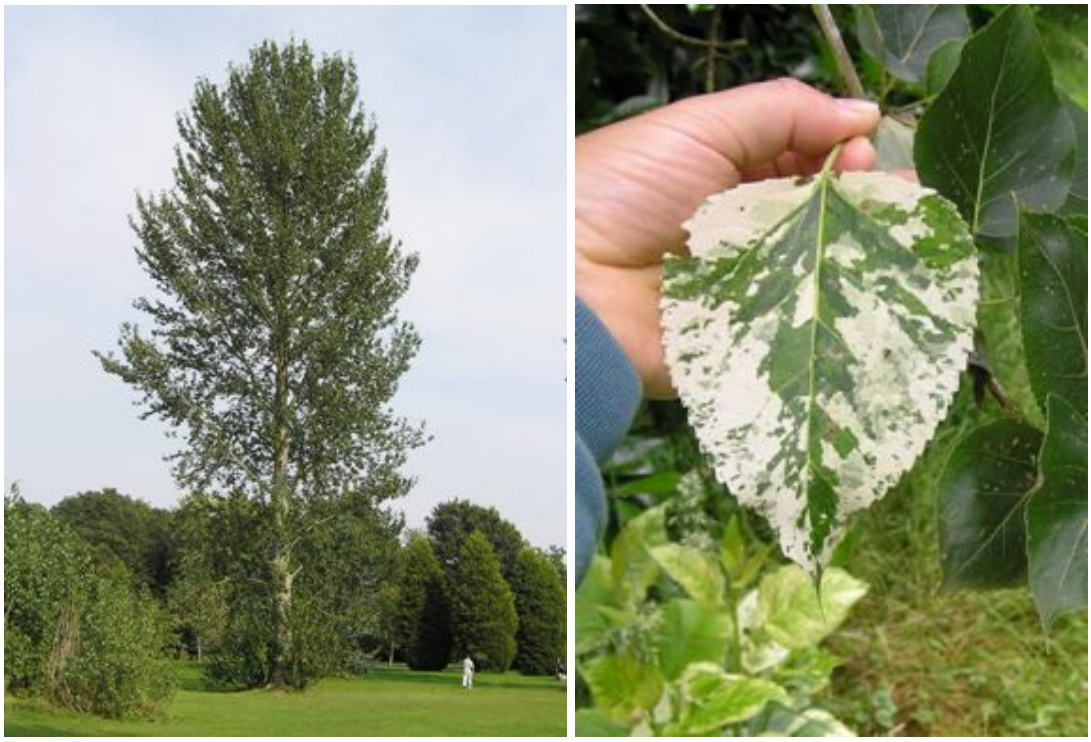
***Populus* x *candicans* (see x *P. jackii*)**

Populus x canescens - **Grey Poplar**
Source: Generally considered to be an ancient hybrid of White Poplar *P. alba* and Aspen *P. tremula*, introduced to Britain by at least 1700 as a fast-growing timber tree. Some experts have recently disputed a hybrid origin for it.
Distribution: Widespread in the south of the county but scarce in the north. It is a popular tree for roadside and field boundary planting in the claylands of Warwickshire's Feldon and not infrequently occurs as large singletons in fields or around property. It has also suckered, and probably rooted from detached twigs that have fallen into rivers, to form long stands along certain Feldon river corridors, notably the Stour and Dene. Some of the oldest local trees are in the Honington-Tredington area and within the Compton Scorpion estate nearby, and may include specimens of 18th century origin.
Further notes: This species can be confused with each of the parents. It is intermediate in most ways except size, because it shows exceptional vigour, growing into one of the tallest trees in Warwickshire and much bigger than either parent (an 'Aspen' fed on steroids is not a bad description). Sucker growth has maple-like, silvery-backed foliage much like *P. alba*. The foliage of mature canopies by contrast more resembles *P. tremula*, but with fewer lobes on the leaf margin, and a much darker upper leaf surface that contrasts strongly with the greyish underside. The young and upper bark is pale, creamy-grey with smaller black marks than *P. alba* (which has chalky-grey upper bark), more similar to *P. tremula*. But even quite young trees have a robusticity and vigour that is quite different in character to the light branching of a similar-sized *P. tremula*. Like its parents, it suckers vigorously and some large, naturalised stands have formed along stretches of the R. Dene near

Combrook (e.g. Oxhouse Farm Nature Reserve) and the R. Stour at Ettington and Honington. The dead wood produced by these stands is now supporting some very rare insects such as the hoverfly *Chalcosyrphus eunotus* which seem to require partially submerged timber.
Key locations for seeing some: Banks of the River Stour between Ettington and Honington Hall (many with GBH exceeding 3m/2006, easily seen from the A422, the largest measured was 4.13m GBH/2006); Honington Hall (some fine ones in the parkland north of the Hall and overhanging the church); Oxhouse Farm, Combrook (many along the River Dene and adjacent areas); Jephson Gardens (a clump of medium-sized trees near the Willes Road gatehouse); Brueton Park, Solihull (a couple of large ones); Southam (several on Banbury Road beside the R. Stowe); Stoneleigh (a tall one on the Coventry Road at the north end of the village); Kenilworth Road Spinney, Coventry (a tall one beside Wainbody Wood – the tallest tree in the Spinney); Broadwell, Lower Shuckburgh, Stockton, Kineton, Radway etc. (frequent along roadsides and in field boundaries of these areas).
Largest local specimen: Compton Scorpion Estate, in a parish boundary hedge close to Holt Farm (GBH approx 5m/2008, adjusted for ivy, crown much reduced by wind damage).

***Populus* x *jackii* (= *P. candicans*) – Variegated Poplar, Jack's Poplar, Balm of Gilead**
Source: This is thought to have originated as a natural hybrid between the North American Eastern Balsam Poplar *P. balsamifera* and Eastern Cottonwood *P. deltoides*. The variegated form 'Aurora' is a cultivar that arrived in Britain in about 1920.
Distribution: Widely but sparingly recorded in our area, mostly within historic gardens and public parks.
Further notes: Part of the confusing medley of balsam poplars present in the Warwickshire area and not always possible to separate confidently. The variegated form is usually highly distinctive with leaves variably marked white, pale greens and sometimes pink. But old trees tend to lose their variegated foliage becoming dark green, medium-sized and rather untidy with large, leathery leaves and a strong susceptibility to canker. They also to sucker from their roots and develop growth around their trunks often involving greatly oversized and mis-shapen leaves. It is possible that all our green-leaved specimens originated as Variegated Poplars. A good clue to this poplar in all its colour forms is the tendency for a good proportion of the canopy leaves to be 'cordate' (i.e. heart-shaped with the leaf blades reflexed inwards where they meet the leaf stalk) with little tendency for leaves to be elongate as in Western Balsam poplar *P. trichocarpa*. All trees are female, and the green catkins produced in early spring are particularly long and conspicuous. The buds are also particularly large for a poplar, very sticky and strongly aromatic.
Key locations for seeing some: Variegated: Moreton Hall, Moreton Morrell (beside the wildflower meadow west of the Hall); Brueton Park (a young one not far from main car park along north edge); Newnham Paddox Art Park (a couple of medium-sized ones); Keresley House, Coventry (a young one); Elmdon Park, Solihull (a couple). Non-variegated: Leamington Spa: Black Lane, Campion Hills (a row of fine ones beside recreation park) and Jephson Gardens (beside Willes Road, south of River); Warwick University, Westwood

Campus; Honington Hall; Compton Wynyates (several fine ones); Brueton Park, Solihull (south end of Park); Brownsover Hall, near Rugby (one in garden at rear of Hall).
Largest local specimen: possibly one of those at Compton Wynyates (not measured).



Two locally-found varieties of balsam poplars, a 'Balsam Spire' at Brueton Park (left) with its neat cylindrical crown and a leaf of Variegated Poplar (right).

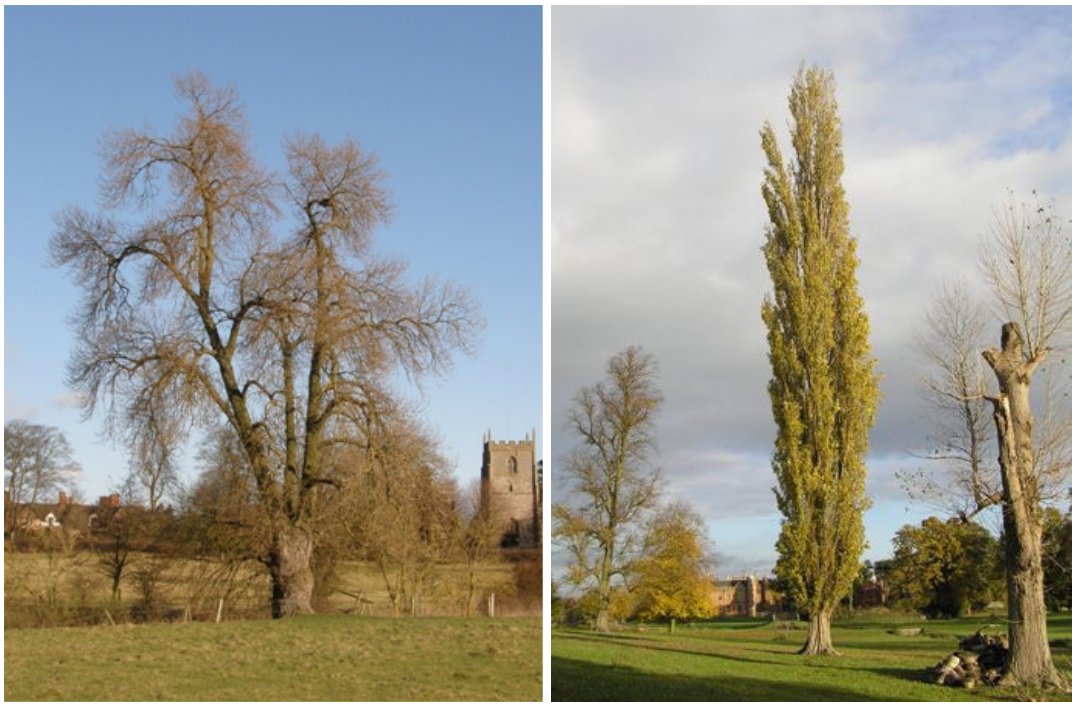
***Populus lasiocarpa* – Chinese Necklace Poplar**
Source: Central and W China. Introduced to Britain in 1900.
Distribution: Only one specimen known locally and a scarce tree nationally.
Further notes: A very distinctive poplar, growing into a tall, slim tree with short level branches that give rise to huge Catalpa-like leaves, though the lack of bean-like fruit and the pointed resinous buds make for easy separation. The bark tends to become ridged and flaky at a young age, without the smooth young bark characteristic of most poplars. The young shoots carry a velvety pubescence. The single local specimen is of the typical form with green petioles and very large leaves averaging 30cm in length.
Key locations for seeing some: Radway Grange (a medium-sized one, only 0.98m GBH/2007, but quite tall).

***Populus nigra* subspecies *betulifolia* – Native, Wild or Downy Black Poplar**
Source: A widespread but rather scarce native that is likely to have grown naturally along many of the floodplains of southern Britain's 'wildwood' after the last Ice Age. Subspecies *betulifolia*, which has downy new shoots and leaf stalks, has a natural distribution confined to Britain and NW Europe where it is a tree of some conservation concern.

Distribution: Widespread but local in our area with important concentrations of mature trees within the valleys and tributaries of the Blythe, Tame, Avon, Dene and Alne. Those trees randomly located beside rivers, streams, ditches and other temporarily flooded areas appear to be mostly self-set from detached twigs that have rooted into wet mud, but some may have arisen from fertile seed where a female and male tree occurred in reasonable proximity historically (now a rare situation). Conditions suitable for seed germination (seasonally-flooded floodplains with exposed silty soils) are now scarce in our area but would have been much more widespread in the past. However, the majority of specimens are clearly planted, particularly those within hedges, roadsides, municipal parks, fields or property frontages. A few fine specimens can also be found in historic parkland settings, notably one behind the church at Charlecote Park, and a pair at Ashow Hill south of Oakley Wood.
Further notes: Some trees are difficult to distinguish from hybrid black poplars *P.* x *canadensis*. A list of useful distinguishing features includes: trunk usually with bosses, the ridges on mature trunks rather irregular and criss-crossed (never neatly vertical); side limbs tending to be heavy and down-arched, but giving rise to dense bunches of strongly upcurved twigs; leaves rhomboid rather than triangular with drawn out tips, the young leaf stalks downy at first and lacking glands at the leaf base; leaf stalks or midrib frequently with a spiral galls (caused by a *Pemphigus* aphis and never present in hybrids), never bears mistletoe (this only grows on hybrids), leaf buds more densely arranged, with shorter internodes than hybrids, resulting in denser foliage. Some trees are multi-stemmed natural pollards (usually where the original trunk has been lost) which can affect their appearance, and some very fine pollards can be found in the Alne valley near Haselor and Great Alne. Most trees are male – only about a dozen *betulifolia* females are currently known in Warwickshire. About 550 Warwickshire trees were known by 2011, of which about a third are growing in waterside or wetland locations. Limited DNA analysis of Warwickshire specimens by the researcher Fiona Cooper suggests that a number of clones are present in Warwickshire stock, and it is likely that Warwickshire trees have come from a variety of sources, some non-local. In very wet areas, trees often collapse and then grow new trunks or roots from side branches. A group of trees just north of the River Avon at Lower Binton exhibits this particularly well. Several semi-fastigiate Black Poplars occur in the county that could be hybrids between the Native form and Lombardy Poplar. They have typical *betulifolia* foliage, including heavy infestation with spiral galls, but have all limbs angled upwards (but much less acutely so than Lombardy) and the bark with relatively shallow fissures and lacks bosses. Black Poplar timber was popular in the construction of traditional crux-framed cottages and the wood had many other uses as it is relatively fire, heat and shock-proof. A separate publication, '*The Black Poplar in Warwickshire*' (2011) provides more information on this tree locally.
Key locations for seeing some: Males: Leamington Spa: Jephson Gardens (two either side of river in east sector, largest 2.54m GBH/2007), Warwick Old Road (five near roundabout), Warwickshire College (eight beside railway) and nearby Princes Drive (three near canal bridge); A439 Fisherman's Car Park, Stratford (several fine specimens here and nearby, plus other poplar types);

Coombe Abbey Countryside Park (several along the north lakeshore amongst other poplar types, some fallen but alive, largest 3.75m GBH/2006); Ashorne Hill (two fine ones just north of the Conference Centre, largest 4.85m GBH/2006); Charlecote Park (a fine one 4.03m GBH/2006 close to the Church); Haselor and Great Alne (various groups including some fine mature pollards up to 3.81m GBH/2006); Stonebridge (a large one beside the River Blythe just south of the A45/A452 junction); Long Itchington (a large one behind the Blue Lias pub beside the fishing lake); Brinklow (a large one east of Fosse way just north of the village, before canal bridge (4.65m/2006); Welford on Avon (a group of very old ones beside the Ouse Brook, north of the Avon, largest 5.14m GBH/2006); Woodford Bridge near Hartshill (a couple along the N bank of the R. Anker just east of the road bridge). Females: near Little Morrell (a fine female pollard 3.52m/2006 south of road leading to Newbold Pacey); Willoughby (several just N of A45 beside track leading to Onley Fields Farm; Wootton Wawen (one on west bank of R. Alne beside sewage works). Semi-fastigiate Black Poplars: Coombe Countryside Park (several very mature ones alongside north edge of lake possibly planted c1790 – some recently dead following topping, but a few surviving, the largest one 4.94m GBH/2006 just below a low fork); Avon Carrow, Avon Dassett (a fine specimen of 3.76m/2007; Brandon Marsh (a fine one in the marsh towards the R. Avon).

Largest local specimen: Kite Green, near Henley in Arden, close to Whitley Farm (5.75m around low waist/2010, but with large bosses making for a very impressive lower trunk).



A fine Native Black Poplar near Studley Church (left) showing the over-arched side branches and dense clumps of upcurved twigs. Lombardy Poplar (right) is a highly fastigiate variety of the same species that is widely planted.

***Populus nigra* 'Italica' – Lombardy Poplar**
Source: Typical or True Lombardy Poplar ('Italica') is a male clone of the European Black Poplar *Populus nigra* subspecies *nigra* originating in N Italy and introduced to Britain in 1758. Female Lombardy Poplar ('Foemina') has a different and less certain origin.
Distribution: True Lombardy Poplar is widespread and frequent in our area, especially around playing fields, beside railway lines, roadsides and in boundary features elsewhere. 'Foemina' is occasional but easily overlooked.
Further Notes: Lombardy Poplar is our commonest fastigiate broadleaved tree, not easily mistaken for any other (Cypress Oak and Bollés White Poplar never grow as large and have very different leaves). True Lombardy Poplar is a male clone producing purple catkins in spring. 'Foemina' is a female clone producing green catkins and with a crown that splays out at the top. At several local sites one can find some very old poplars that seem to be a cross between Lombardy Poplar and Native Black Poplar (see previous species account).
Key locations for seeing some: Brandon Marsh (a fine screen around one of the large pools near the nature centre); War Memorial Park, Coventry (especially beside the railway line); A439 Fisherman's Car Park, Stratford (one by entrance and a row visible across the River Avon); St Nicholas Park, Warwick (some fine ones along north edge); Charlecote Park's West Park (3.43m GBH/2007). Foemina: Stoneleigh NAC (alongside the access road leading from Stoneleigh Road to Stoneleigh Abbey).
Largest local specimen: St Nicholas Park funfair, Warwick (4.84m GBH/2007).

***Populus simonii* – Simon's Poplar (Chinese Cottonwood)**
Source: China. Introduced to Britain in 1862.
Distribution: Just a few local sites and rather scarce nationally.
Further Notes: A rather obscure species that is not always instantly recognisable as a poplar because of the rather small oval leaves with short leaf stalks. But if you squeeze a bud it will give a weak balsam smell (characteristic of poplars) and the bark and catkins resemble those of other poplars. One of its most distinctive features is the very pendulous habit of the shoots (reminiscent of Silver Birch). It is a popular street and timber tree in some parts of Europe and can be fast growing, though some local specimens (notably at Draycote Water) have secumbed to canker within 30-40 years.
Key locations for seeing some: Draycote Water, Thurlaston end (many dozen planted in the 1980s, they have become cankerous and are gradually being removed as they die); Leamington Spa: Sydenham (six fine ones along the Whitnash Brook close to Danesbury Crescent/Pennystone Close, the largest 1.70m GBH/2007) and Newbold Comyn Golf Course (several specimens of a similar age to the Sydenham trees); Talton House near Newbold on Stour (a fine one, see below); also recorded from Walsgrave Hospital (NW side of entrance roundabout, teste O. Johnson, 2004); Oversley Green (one grew north of the river bridge beside the road to Alcester, 1.45m GBH/2006, but appears to have been lost by 2011).
Largest local specimen: Talton House (1.92m GBH/2007, probably planted in the early 1970s).


Several dozen rather unhealthy Simon Poplars formerly grew at the north end of Draycote Water but most have now been removed. The foliage is strongly pendulous and the leaves do not look much like those of a poplar (but the crushed buds give the characteristic balsam smell of a poplar).

***Populus tremula* - Aspen**

Source: One of our two native poplars. It was one of the first trees to colonise Britain after the last Ice Age, and a second wave of immigration appears to have swept in with the 'Wildwood' that covered Britain subsequently. Warwickshire trees originate from this latter source.

Distribution: Present in some of our ancient broadleaved woods, especially where the soils are slightly acidic. Occasionally found in recent planting schemes in parks and larger gardens.

Further Notes: Aspen never appears to grow into a particularly big or old tree, but do not be fooled, because some groups of trees in ancient woods (especially if they are all the same sex) actually represent the suckers of a single rootstock that may be many centuries old. Much of its spread is through suckering, and it can often form thickets at woodland edge or along wide rides. The leaves are well known for fluttering in the slightest breeze, hence the scientific name '*tremula*' (quivering). Aspen can be confused for the larger Grey Poplar *P.* x *canescens*, which is a presumed hybrid between the Aspen and White Poplar *P. alba* that develops into a tree resembling a giant and very robust Aspen with more silvery foliage. Aspen in local woods supports a number of very scarce insects such as the moth *Phyllonorycter sagitella*, the beetle *Chrysomela populi* and the hoverfly *Xylota tarda*.

Key locations for seeing some: Woodlands: Wappenbury Wood and Ryton Wood, near Princethorpe; Oversley Wood, near Alcester; Snitterfield Bushes, Snitterfield; Wolford Wood, Great Wolford; Rough Hill Wood, near Redditch; Clowes Wood, Earlswood; Bannam's Wood, Morton Bagot; Tile Hill Wood,

Coventry; Arley Wood, Old Arley. Formal settings: Priory Park, Warwick (beside the County Records Office); Brueton Park, Solihull (young specimens); The Rec, Stratford (young ones beside the overflow car park); Castle Farm Recreation Centre, Kenilworth (several alongside footopath leading to Abbey Fields).
Largest local specimen: No especially large specimens are known.

***Populus trichocarpa* - Western Balsam Poplar (Black Cottonwood)**
Source: W North America (the Pacific slopes of the Rockies) where it grows into the tallest broadleafed tree. Introduced to Britain in 1892.
Distribution: Occasional in local parks, shelterbelts, churchyards and urban areas.
Further Notes: A good *P. trichocarpa* is relatively distinctive amongst the confusing array of balsam poplars in having rather elongate leaves with rounded bases (especially those produced by the lower trunk). It produces a tall, robust, spreading tree in time (though young ones tend to be neatly cylindrical like Populus 'Balsam Spire'), with a clean pale grey trunk, and (when allowed) profuse suckering. The seed pods open in 3 segments. It is exceptionally fast growing and gives a fine show of yellow foliage in autumn. Balsam poplars with consistently shorter, heart-shaped leaves may include Eastern Balsam Poplar *P. balsamifera* (its seed pods open in 2 segments), Jack's Poplar *P.* x *jackii* or Balsam Spire. Like all balsam poplars it has large, very sticky buds that give off a strong balsamic smell in spring that can be detected from some distance. *P. trichocarpa* made the news in September 2006 by being the first tree to have its full DNA code unravelled. The status of Eastern Balsam Poplar locally is far from clear, largely because it is very difficult to seprate with certainty, though a suspected specimen of some age occurs at Shuckburgh Park.
Key locations for seeing some: Solihull: Brueton Park (several with other balsam poplar species/varieties for comparison) and Elmdon Park (one amongst Variegated Poplar and 'Balsam Spire'); Warwick University (many, largest measured 2.45m GBH/2005); Stratford Golf Course (some fine ones along one fairway, largest measured 2.04m GBH/2006); Knowle Parish Church (far end of churchyard); Preston on Stour (a couple behind 'The Cottage'); Stoke Aldemoor, Coventry (a large one on Treforest Road, teste M. Senior); Leamington Cemetery (two rows along west side). Possible Eastern Balsam Poplar: Shuckburgh Park 'Wild Garden area' (2.94m GBH/2007).
Largest local specimen: Western Balsam Poplar: the largest Preston on Stour specimen (3.20m GBH/2006, adjusted for ivy stems on the trunk, one of the largest British specimens).

***Prunus* – Cherries, Plums and their relatives**
Shrubs and medium-sized fruit trees of the rose family, characterised by a fleshy fruit containing a single large seed (a 'stone' or almond-type 'nut') which arises from a single style in the flower. Most *Prunus* species produce attractive blossom in spring (a few flower in autumn or winter) and many cultivars have been developed to enhance this show, including some with 'double' flowers where 2 or 3 times the normal number of petals are produced. Others have been bred to improve the commercial quality of their fruit – cherries, plums, peaches, nectarines, apricots or, in the case of Almond *P.*

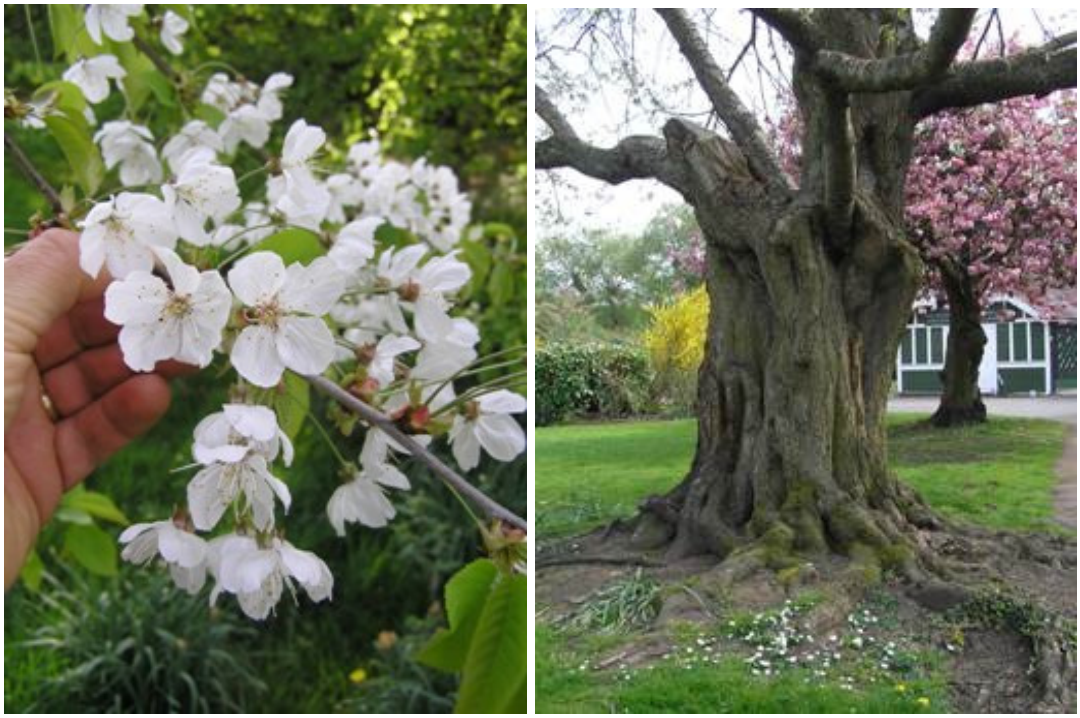
dulcis, the nut these contain. Many *Prunus* (especially cherries) have distinct reddish glands on their leaf stalks that produce nectar attractive to ants and other insects. About 400 *Prunus* species occur within temperate regions of both hemispheres, with three species native to Britain (*P. avium*, *P. padus* and *P. spinosa*). Identification of some *Prunus* is extremely difficult, but there is a flowering sequence that can help to some extent (see Johnson & More, 2004, p. 322). If you can learn to identify our native *P. avium* and the Japanese Cherry 'Kanzan' (both distinctive trees much planted in streets, gardens and parks), this allows you to judge whether some of the other ornamental cherries are 'early' or 'late' flowerers in relative terms)

***Prunus* 'Accolade' – a hybrid flowering cherry**
Source: A hybrid of Sargents's Cherry *P. sargentii* and *P.* x *subhirtella* developed in 1952.
Distribution: Possibly quite frequent locally (it is common at a national level), but you only get a short period in spring to check the blossom.
Further Notes: A broad-crowned cherry, which becomes an untidy shape as it matures, but one that produces a stunning show of pink blossom peaking in early spring before the foliage has emerged, usually a week or two ahead of Wild Cherry. The flowers are moderately large for a cherry with about 12 petals.
Key locations for seeing some: Warwick: St Nicholas Park, (in car park near the café).

***Prunus* 'Amanogawa' – Lombardy Poplar Cherry (see *Prunus* ' Japanese Cherries')**

***Prunus avium* - Wild Cherry or Gean**
Source: A widespread native tree, especially of woodlands, but with various cultivated forms, some of which have presumably come from foreign sources It also occurs in Europe, N Africa and W Asia.
Distribution: Very widespread in our area mostly as a popular species of parks, gardens, cemeteries and roadsides, but also a natural component of our ancient woods where it usually occurs in low numbers.
Further Notes: Typically a small to medium-sized tree, but some surprisingly large ones (perhaps attaining 25 metres height) can occasionally be encountered in local ancient woods. The specimens in ancient woods are often the suckers of ancient rootstocks, many centuries old. In natural situations, it is abundantly distinct from other *Prunus* species, but in parks and gardens, separating it from various ornamental cherries and hybrids is more challenging, and many of these ornamental cherries are grafted onto *avium* trunks and may even have some *P. avium* growth in their canopies just to confuse matters. Blossoming is typically in April, and the flowers are pure white and long-stalked. 'Plena' has 'double' flowers like certain ornamental cherries and is quite popular in local parks. *P. avium* is the main source of edible cherries, though the sweetness and edibility of fruit on local trees varies somewhat. The autumn foliage can produce bight oranges and reds.
Key locations for seeing some: Natural locations: Piles Coppice, Binley Woods, Brandon Marsh, Oversley Wood, Coombe Countryside Park (including a 2.80m GBH/2006 specimen on the Lindley Land near the

Menagerie). Formal settings: Warwick: St Nicholas Park (including a large 'Plena' near the boat house), St Mary's churchyard and adjacent College Gardens (a nice 'Plena' in each); Leamington Spa: Milverton Cemetery; War Memorial Park, Coventry (including 'Plena' up to 2.80m/2006); Warwick University (many along Kirby Corner Road); Newnham Paddox Art Park (some quite large ones); Upton House (some fine ones along the entrance drive).
Largest local specimen: Type form: Newnham Paddox Art Park (largest 3.05m @ 50cm/2007). Plena: St Nicholas Park (3.44m GBH/2007), the largest Plena specimen in Britain.

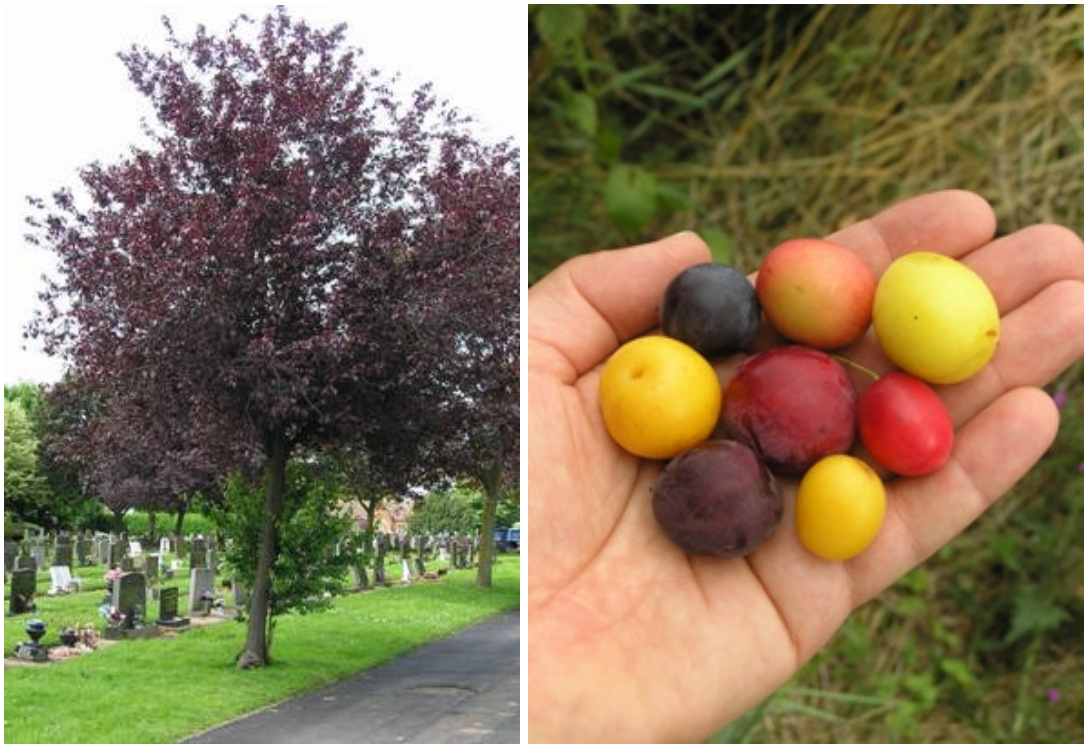


The familiar blossom of Wild Cherry (left) which graces local parks and gardens as well as woods. The form with extra petals is called 'Plena', and the largest British specimen grows at St Nicholas Park, Warwick (right, with a Kanzan Cherry behind it).

***Prunus* x *bliriana* – Double Cherry Plum (see *P. cerasifera*)**

***Prunus cerasifera* – Myrobalan Plum (Cherry-plum) and Pissard's Plum**
Source: S Europe to Central Asia, possibly introduced to Britain in the 16th century. The purple form (typically Pissard's Plum, 'Pissardii') was introduced from Iraq in 1880.
Distribution: Frequent in its green-leafed form in local hedges, shrubberies and roadsides (look out for its blossom in early spring). But also very popular in parks, gardens, churchyards and cemeteries, especially in one of its dark-leaved, pink-blossoming forms.
Further Notes: The 'wild' form, which usually takes the form of a shrub with white blossom and green leaves, is most conspicuous in early spring, being the main local *Prunus* in flower during March (precise peak depending on the weather). The blossom of Blackthorn *P. spinosus*, with which the wild form is often confused, typically peaks 3-4 weeks later. Compared to Blackthorn, *P.*

cerasifera is typically a taller, less compact shrub that suckers less vigorously and has less dense blossom on twigs that are thornless and often green. The blossom also usually coincides with the emergence of the leaves (in *P. spinosus* the blossom usually peaks before the leaves emerge). After flowering, it becomes inconspicuous and easily overlooked until the yellow, red or blackish fruit are produced. These are round, about 2-3cm across and ripen in August a little before those of plums and damsons (the fruit of which tend to be larger, often dimpled and associated with larger, curlier leaves). The yellow and red varieties of fruit can match the best plums for succulence and sweetness and there are clearly numerous different strains with fruit of varying size, colour and flavour. 'Pissardii' and 'Nigra' have pink flowers followed by dark foliage that make for some of our most conspicuous small trees. A well-defined trunk is usually present on these ornamental forms and this usually has rather rough bark without the well-developed horizontal lenticels of the various ornamental cherries that can flower at the same time. The trunks of these dark-leaved forms are sometimes grafted onto the 'wild' form resulting in green-leaved shoots growing at the base in contrast to purple foliage in the crown. The dark-leaved forms typically produce very dark fruit. White and pink-blossoming forms have often been deliberately planted together in local schemes. *P. cerasifera* has also been crossed with Japanese Apricot *P. mume* to produce Double Cherry-plum *P.* x *blireana* which resembles Pissard's Plum but has double flowers (i.e. an extra set of petals).



Pissard Plum (left) is a purple-leaved, pink-flowering form of Myrobalan or Cherry Plum. The fruit is also highly variable and often delicious (right).

Key locations for seeing some: Green-leaved form: Gaydon area (much along the B4100 roadside leading to Kinton Ammunition depot plus the road leading up to the Burton Dasset Hills and Northend village and on the Hills

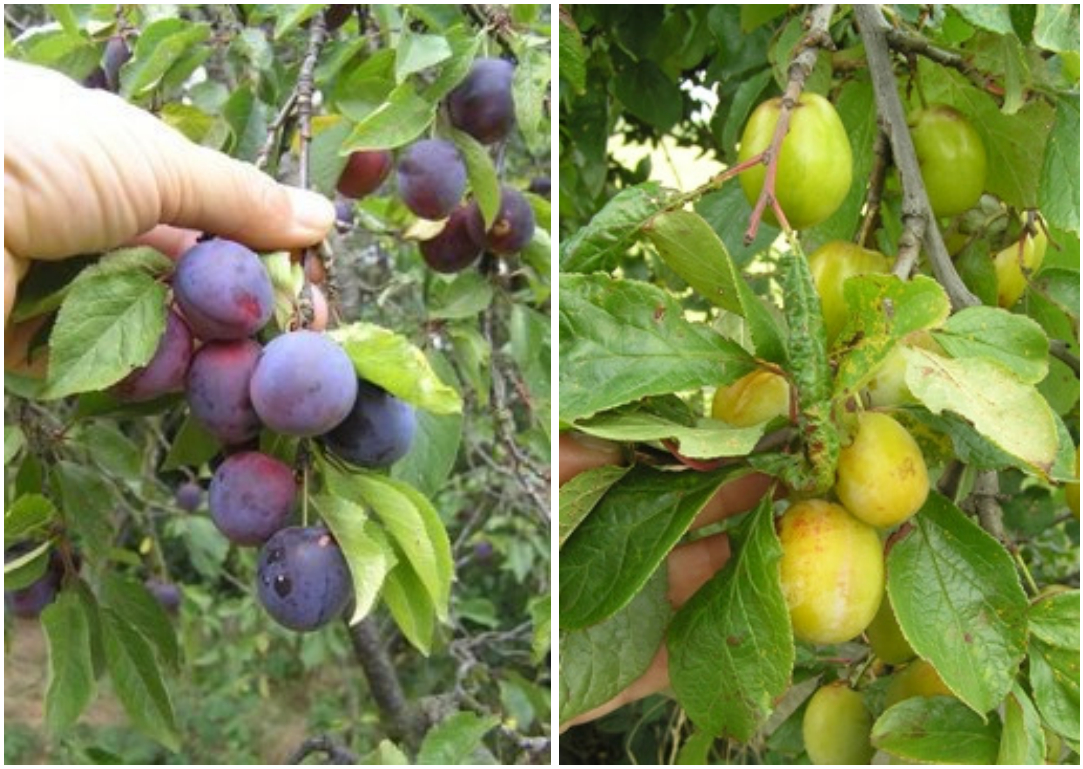
themselves); Warwick: Coventry Road, (dominating parts of the west verge just south of Guys Cliffe); Warwick Cemetery (many in hedges of far field); Newbold Revel (edge of sports field); Stratford on Avon southern by-pass (several varieties lining path between entrance to Stratford Greenway car park and the river). Pissard's Plum & other dark-leaved forms: in almost any local town or village, but notably War Memorial Park, Coventry (including a fine avenue of them); Warwick: St Nicholas Park and Warwick Cemetery; Leamington Spa: Leam Terrace (many), Newbold Terrace (many), Pump Room Gardens, Clarendon Square and Northumberland Road; Kenilworth (many along Fishponds Road, Greville Road and other nearby roads); Preston on Stour (a fine one near the cross, 1.50m GBH/2006); Walton Hall, west of lake (1.70m GBH/2006); Honington Hall (some quite large ones in the garden, largest 1.75m @ 0.6m/2007, and a fine Pissard's Plum hedge beside the Hall); Compton Wynyates (a large one near sludge pit, 2.16m @ 80cm/2007); churchyards at Binton, Church Lawford and Offchurch. Both together: Stoneleigh (top of Stoneleigh Hill); Crackley, Kenilworth (front gardens in Coventry Road); Hampton in Arden (Meriden Road). Double Cherry-plum: Warwick University (zones 4, 6)
Largest local specimen: Pissardii: Binton Church (2.32m GBH/2006 below a low fork).

***Prunus cerasus* – Dwarf (Sour) Cherry (requires confirmation)**
Source: An ancient introduction to Britain where it is now widespread in parks and gardens. Widespread in Europe, but truly wild populations seemingly lost.
Distribution: Sparingly recorded in our area, but not easy to identify from the plethora of other cherries.
Further Notes: Typically encountered in its ornamental 'double' form 'Rhexii' (Rhex's Cherry). It can grow into a small tree and is one of the last ornamental cherries to blossom (mid May). This cherry is one of the parents of the Morello Cherry used in cooking and confectionary.
Key locations for seeing some: Check Flora 2000 data. Never seen by the author.

***Prunus* 'Cheal's Weeping Cherry' – see *Prunus* ' Japanese Cherries'**

***Prunus domestica* and *P. institia* – Plums, Damson and Bullace**
Source: *P. domestica* probably originated as a cross between Myrobalan Plum *P. cerasifera* and Blackthorn *P. spinosa* in the Caucasus, but is much modified by cultivation and with an uncertain date of introduction into Britain. Bullace *P. institia* (or *P. domestica institia* according to some authors) is also an ancient introduction.
Distribution: Collectively, Plums, Damson and Bullace are widespread in our area, mainly cultivated in gardens and orchards but occasionally naturalised in hedges.
Further Notes: Typically suckering shrubs or small, trunked trees resembling *P. cerasifera* or a lanky *P. spinosa* but with much larger, bloomed fruit, larger leaves and never with the spines of *P. spinosa*. The blossom appears at the same time as *P. spinosa* (i.e. peaking 3-4 weeks later than *P. cerasifera*), but the petals are larger and rounder and the leaves become much larger and often wrinkled. Plum can back cross with *P. spinosa* to form a hybrid (*P.* x

fruticans) that is reported from a few sites in our area but is difficult to identify with certainty. Damsons are sweet-fleshed purple-blue plums that resemble large sloes. 'Black Bullace' has fruit resembling small damsons but they are less sweet and succulent upon ripening. 'Warwickshire Drooper' is an old yellow-fruited plum variety with a strongly wilting habit developed locally, possibly in the 1800s. The fruit of plums generally ripen a bit later than *P. cerasifera*, are larger, have dimpled sides and a flatter stone.

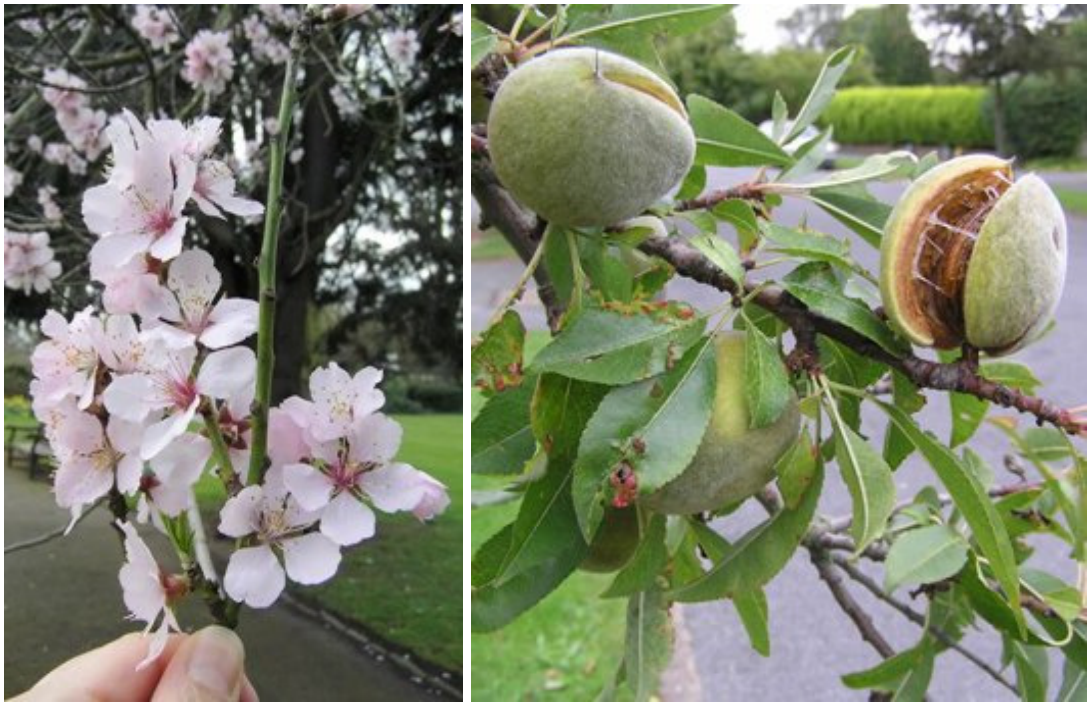


Damson (left) and Plum (right) are popular in local gardens and orchards and Black Bullace (resembling a small dark rather sharp Damson) is widespread in hedges.

Key locations for seeing some: Plums: Upton House orchard; Ann Hathaway's Cottage, Shottery; Middleton Hall orchard; Crewe Lane Arboretum ('Warwickshire Drooper' in the garden); Iron Cross, near Salford Priors (many in hedge on north verge of School Lane near Salford Farm). Damsons: Ilmington (frequent in the village orchards near the church); Balsall Common (abundant along Waste Lane); Alcester (along the lane leading to the weir near Arden Rd); Warwick Cemetery (perimeter hedge of north section, near the cypresses with some *P. cerasifera* nearby to compare against; Stoneleigh Abbey gardens; Canley Crematorium; Halford Church; Chesterton Church. Black Bullace: Langley Road between Claverdon and Langley (numerous roadside specimens); the Parkridge Centre, Brueton Park, Solihull; Radway (various specimens around the village).

***Prunus dulcis* - Almond**
Source: Mediterranean Europe. Long-grown in Britain.
Distribution: Occasional in local churchyards, parks, gardens and along roadsides.

Further Notes: The narrow, willow-shaped leaves and distinctive fruit (when produced) are the best means of separation from other *Prunus* (only Peach *P. persica* has similar leaves). Some varieties have been developed as a source of edible nuts (the nuts of non-edible varieties can contain dangerous levels of cyanide!), whilst others have been developed as a source of attractive pink early spring blossom. The flowers are particularly large for a *Prunus* (up to 5cm across), pink and rather resembling those of Sargent's Cherry *P. sargentii* but wth pale anthers and conspicuous green sepals obscuring the petal bases. The downy fruit are apricot-sized but mature green then brown. They tend to split open by late summer revealing the characteristic 'almonds' which soon litter the floor. Some local trees are grafted onto what appears to be *P. cerasifera*, and the leaves of that species can sprout up from the base.
Key locations for seeing some: Leamington Spa: Almond Ave (five remain in 2006) and the adjacent Cloister Way (one); Studley Church Cemetery (one in middle); St Nicholas Park, Warwick (one nr Banbury Rd entrance); Ann Hathaway's Cottage, Shottery; Crewe Lane Arboretum, Kenilworth (garden); Baddesley Clinton (a small one near the Douglas Firs); Church; Windmill Road Cemetery, Longford, Coventry (0.98m GBH/2007); several churchyards, including Temple Grafton, Chesterton and Ullenhall. Old records include Hampton in Arden (Meadow Drive says S. Apted, late 1980s); Newbold on Avon (WBRC files, 1999).



Almond has delicate pink blossom with flowers that resemble oversized ones of Pissards Plum. By autumn the inedible fruit splits open to reveal the familiar nuts.

Prunus* x *fruticans* – the hybrid between *P. domestica* and *P. spinosa

***Prunus* 'Hokusai' – see *Prunus* ' Japanese Cherries'**

***Prunus* 'Ichiyo' – see *Prunus* ' Japanese Cherries'**

***Prunus incisa* – Fuji Cherry**
Source: Mountains of Japan. Introduced to Britain in 1910.
Distribution: Local distribution unclear.
Further Notes: Generally shrubby but occasionally a small broad tree, blossoming freely in March with pale pink, single flowers. Form 'Oshidori-zakura' has double pink flowers hanging on 4cm stalks.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting of 'Oshidori-zakura' by D. Howells.

***Prunus institia* – Bullace & Damson (see *P. domestica*)**

***Prunus* 'Japanese Cherries'**
Source: Probably all originating from a wild Japanese or Chinese species, but there are many varieties stemming from centuries of selection and hybridisation, initially in the Far East but more recently in Europe.
Distribution: As a collective, frequent in local parks, gardens, roadsides and cemeteries, especially 'Kanzan', 'Cheal's Weeping Cherry' and 'Amanagowa'.
Further Notes: Mostly broad crowned, grafted cherries (typically on to the base/stock of *P. avium*), producing masses of white, pale pink or deep pink flowers in April and early May. The flowering peak depends on the weather and the variety involved. The *P. avium* base often sends up its own branches so that the canopies of some trees produce two different types of cherry flower, particularly striking when a 'Kanzan' is involved. There are numerous varieties, some of which are very difficult to identity. A few (e.g. 'Tai Haku') have 'single' flowers (with 5 petals) but most have 'double' flowers with up to 28 petals. Locally recorded ones include:

- Amanogawa (Lombardy Poplar Cherry) - very upright when young like *Prunus* 'Spire' but tending to broaden out with age, also flowering 2-3 weeks later and with 6-15 pale pink petals (as opposed to just 5 in 'Spire') and with narrower leaves (fairly frequent in front gardens)
- Cheal's Weeping Cherry (Kiku-shidare-zakura) – a small, rather untidily weeping cherry, very distinctive when flowering in April due to the discrete 'pom-poms' of pink, carnation-like flowers with pointed petals; leaves emerging green (frequent in parks and gardens).
- Hokusai - resembles a Kanzan but with paler pink flowers with slightly fewer petals that appear about 3 weeks earlier (scarce and usually an old tree)
- Kanzan – the main Japanese Cherry responsible for the very large masses of bright pink, double flowers in late April, those flowers with 23-28 petals, initially amongst purplish young leaves; usually one of the last Japanese Cherries to flower and ageing into a broad untidy tree with increasingly pendulous branches (very frequent in parks, streets and gardens)
- Ichiyo – masses of very pale pink, double flowers, often with two green styles at the centre of a rather flat arrangement of 16-22 petals, alongside green young leaves (occasional in parks, gardens, cemeteries etc.)
- Shirofugen - masses of whitish double flowers that hang from pink buds amongst maroon young leaves creating a particularly lovely

effect, the petals turn to soft pink as the leaves turn green (occasional in parks and gardens)

- Shirotae – typically a very broad tree with masses of white semi-double flowers with 5-15 white petals (often just 6-8), that emerge 2-3 weeks before Kanzan, the leaves unfold green and have especially long whiskers around the leaf margin, and are rather shiny in summer (fairly frequent in parks, cemeteries etc. but beware similar-looking specimens of Chinese Flowering Cherry *Prunus serrulata* 'Albi-Plena' which lack the long leaf whiskers and tend to have an even more flattened canopy with lumpy spur shoots)
- Shogetsu (resembling a white-flowered 'Shirofugen' but with new leaves green and flowering at the same time as 'Kanzan' (rare locally)
- Tai Haku (Great White Cherry) – very large single white flowers up to 8cm across (occasional in parks and cemeteries)
- Ukon – pale yellow-white double flowers that unfold amongst purple leaves, but eventually turn white (occasional locally)

Key locations for seeing some: Amanagowa: Arden Street, Strtfoerd (several near Hospital entrance); The Boot, Honiley (several at front of hotel); Green Lane Medical Centre, Coventry (one beside medical building); Warwick Cemetery (various places), Leamington Spa (some along Newbold Terrace and Northumberland Road). Cheal's Weeping Cherry: St Nicholas Park, Warwick (one near the crazy golf area); Stoneleigh Abbey (one at S end of terrace garden), gardens in Snitterfield (junction of Church Lane and Park Road), Coventry (Sir Henry Parkes Road in a front garden opposite crematorium), Kenilworth (a rear garden served by Lindsey Crescent, easily seen from Warwick Road). Hokusai: several possible specimens in front gardens on S verge of A4177 at Hatton. Ichiyo: Coventry: War Memorial Park and Green Lane Medical Centre; Leamington Spa: Jephson Gardens (near Willes Road) and Christchurch Garden; St Mary's Churchyard, Warwick. Kanzan: Coventry: Memorial Park, (numerous good specimens), Canley Crematorium and Warwick University; Warwick: College Garden and St Nicholas Park; Kenilworth (Abbey Fields, adjacent to bottom of Forrest Road) and common in gardens throughout the town); Nuneaton: Riversley Park, (planted by CND to commemorate the 30th anniversary of the Hiroshima bombing), and Lutterworth Road (many fine roadside specimens); Jephson Gardens, Leamington Spa, Ragley Hall. Shirofugen: Leamington Spa: Christchurch Garden and Jepshon Gardens (at the latter, the crown is heavily infiltrated by *P. avium* growth from the stock); Coombe Abbey Arboretum (recorded by O. Johnson in 2004, still there?); possibly others at St Nicholas Park, Warwick and War Memorial Park, Coventry. Shirotae: Canley Crematorium, Coventry (some fine grafted ones up to 1.94m GBH/2007); Abbey Fields, Kenilworth (a fine one beside Forrest Road, 1.41m GBH/2007, plus a smaller one in the churchyard); Warwick University Westwood Campus; Jephson Gardens, Leamington Spa (near Willes Road). Shogetsu: Farnborough Park rose garden. Tai Haku: Jephson Gardens, Leamington Spa; St Nicholas Park, Warwick; Canley Crematorium, Coventry. Ukon: Warwick University Westweed Campus (a fine one); Leamington Spa: Jephson Gardens (a young one, mislabelled as Shirotae, and an older one, both in E sector of park) and Woodcote Road (a young one in a front garden).

Largest local specimens: St Nicholas Park, a 'Kanzan' beside the big 'Plena' cherry near the boathouse (2.15m GBH/2007, below graft line).

Four examples of Japanese Flowering Cherry, 'Kanzan' (top left), 'Shogetsu' (top right), 'Tai Haku' (bottom left) and 'Shirofugen' (bottom right). Notice the variation in colour, petal size and shape, the number of petals per flower, droopiness and colour of the unfolding leaves.

Prunus* x *juddii* – see *Prunus sargentii

***Prunus* 'Kanzan' – see *Prunus* ' Japanese Cherries'**

***Prunus* 'Kiku-shidare-zakura' – see *Prunus* ' Japanese Cherries'**

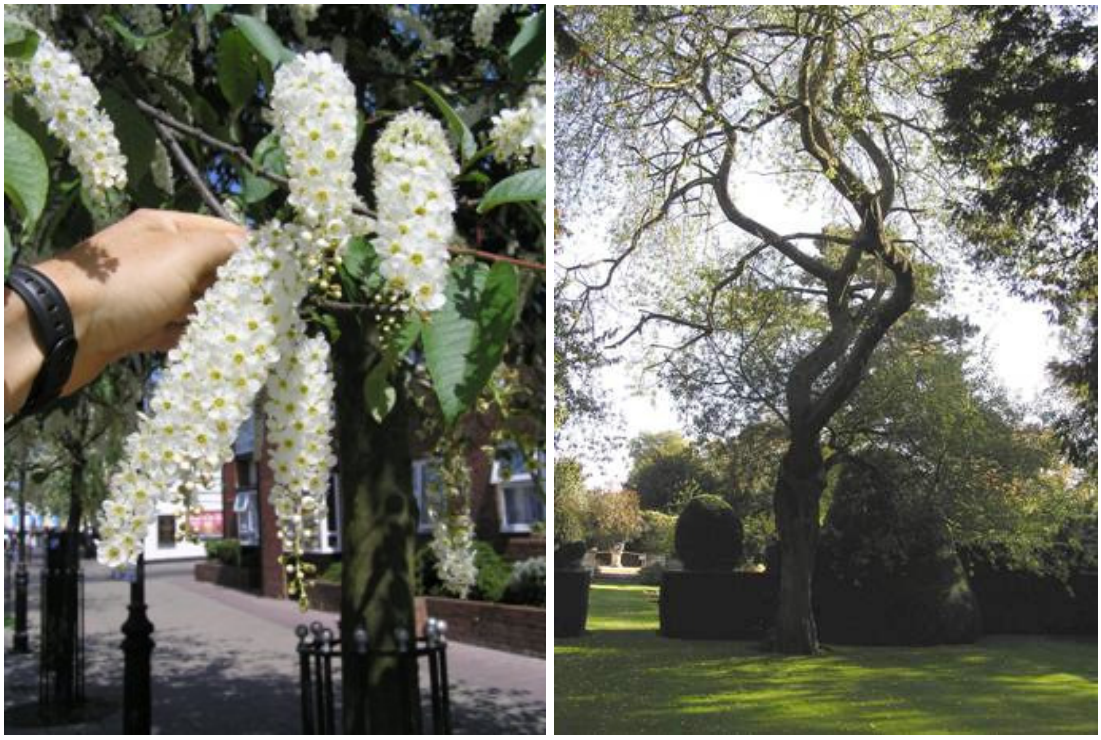
***Prunus* 'Kursar' – a hybrid flowering cherry**
Source: A hybrid involving Bell Cherry *P. campanulata*. Developed by 1947.
Distribution: Seemingly rare in this area.
Further Notes: A very early flowering ornamental cherry (about a month before *P. avium*, and well before most other ornamental cherries), with a fine display of particularly deep pink, single flowers that are rather bell-shaped and have downy stalks. These appear well before the leaves unfold.
Key locations for seeing some: Jephson Gardens, Leamington Spa (E of café, det. O. Johnson, 2004, grafted onto *P.avium*).

***Prunus laurocerasus* - Cherry Laurel**
Source: SE Europe and W Asia. Introduced to Britain in 1576.
Distribution: Very frequent in our area as a hedge species or within shrubberies of woods, parks, cemeteries and property screens.
Further Notes: The thick, shining, evergreen leaves are highly distinctive. In winter it starts to produces flower spikes, which give rise to dense spires of fragrant white flowers by April. These form red and black cherry-like fruit by summer. The rare var. 'Camelliifolia' has strongly curled leaves.
Key locations for seeing some: Allesley Park, Coventry; Brueton Park, Solihull; Wootton Court Spinney; London Road, Cemetery, Coventry; Hatton (S end of Beausale Lane); Warwick Castle (very old ones along the sunken drive). Camelliifolia: Jephson Gardens, Leamington Spa (north edge near the Fern-leaved Beech and also some near the toilets).

***Prunus lusitanica* - Portugal Laurel**
Source: Spain and Portugal. Introduced to Britain by 1648.
Distribution: Widespread in local parks, gardens and ornamental woods, usually in similar situations as *P. laurocerasus*.
Further Notes: Most typically seen as an evergreen hedge or bush, where the spikes of white flowers followed by spikes of red or black berries help characterise it as a *Prunus*. It resembles *P. laurocerasus* in many ways, but the leaves lack the thickness and shininess of that species and are more bay-like. The flowers and smaller fruits are also arranged in a much looser manner on longer spikes and flowering occurs much later – mostly in mid June (though flowering has been observed in October in Warwick's Pageant Garden). The form 'Variegata' has the leaf margins cream or yellow.
Key locations for seeing some: Coombe Abbey Arboretum; Stratford Riverside Park (several, including 'Variegata' in a shrubbery near the Theatre); Jephson Gardens, Leamington Spa; Warwick: Pageant Gardens and Warwick Cemetery; Hampton Manor, Hampton in Arden (some large ones); Wootton Court Spinney, Leek Wootton; Bitham Hill, west of Avon Dassett (a couple of very old ones near the Monkey Puzzles); Coughton Court (a row of neatly pruned conical ones along frontage of the House).
Largest local specimen: Bitham Hill west of Avon Dassett (a very fine 'trunked' one of 2.54m @ 30cm/2007), one of the largest in Britain.

Cherry Plum (left) and Portugal Laurel (right) are much used in borders and shrubberies and can invade woodland. The former has unmistakeable thick shiny leaves and both have flower spikes.

***Prunus mahaleb* – St Lucie Cherry**
Source: Belgium to Central Asia. Introduced to Britain in 1744.
Distribution: Occasional in local parks, gardens and along roadsides. It has been particularly planted by Warwick District Council in the Warwick and Leamington areas.
Further Notes: A large shrub with foliage rather resembling Goat Willow *Salix caprea*, but with white masses of Blackthorn-like flowers in April amongst the new green leaves. These give rise to loose clusters of small black fruit later in summer (rather like those of *P. padus*). The midrib of the underside of mature leaves is fringed with conspicuous hairs and the shoots are grey-bloomed. The bark becomes very coarse and scaley with age. This *Prunus* was once planted for game-cover but has become scarce in Britain today.
Key locations for seeing some: York Walk, Leamington Spa (a large shrubby one directly south of the footpath, 1.45m @ 50cm/2007 forking into three stems at 1m); Reed Business College, Little Compton (a reasonably tall 'tree' within the formal gardens, see below); Priory Park, Warwick (several shrubby specimens beside Priory Road beside the easternmost entrance to the park); War Memorial park, Coventry (a fairly large one overhanging the NE corner of the bowling green); Bishops Tachbrook (several at junction of Mallory Road and Oakley Wood Road), Radway (several at village end of footpath leading up the escarpment east of Radway Grange).
Largest local specimen: Reed Business College, Little Compton (1.79m GBH/2006), the national champion.



Bird Cherry 'Watereri' blossom at Stratford Market (left). The national champion St Lucie Cherry at Little Compton (right).

***Prunus padus* - Bird Cherry**
Source: A widespread native of the N & W of Britain but widely introduced into the rest of Britain.
Distribution: Widely planted in local parks, gardens, roadsides and shrubberies.
Further Notes: The distinctive hanging clusters of white flowers produced in May are especially attractive, and together with its neat shape (often with a well formed trunk) make it a popular ornamental tree. Several forms are found locally including 'Watereri' which forms a larger tree with longer spikes of flowers, and 'Colorata' with purple shoots, leaves and pinkish flowers.
Key locations for seeing some: Coombe Abbey Arboretum; Leamington Spa: Jephson Gardens and Christchurch Gardens; Coventry: Coventry Land Registry, Torrington Ave (beside front car park), Green Lane South (a nice 'Watereri' near the Gretna Road junction) and War Memorial Park (several, including a possible 'Colorata' at north end); Warwick University (both 'Colorata' and 'Watereri'); south end of Stratford Market, Rother Street (some fine 'Watereri').
Largest local specimen: Coventry's War Memorial Park golf course (1.98m GBH/2011).

***Prunus* 'Pandora' – a hybrid flowering cherry (requires confirmation)**
Source: A complex garden hybrid. Developed by 1940.
Distribution: Local status unclear.
Further Notes: A graceful cherry with pale pink single flowers that appear quite early on bare twigs and last for a week or two until the bronze young leaves appear. The petals are characteristically darker at the margins. The leaves are relatively small with rather coarse teeth around the margins. All

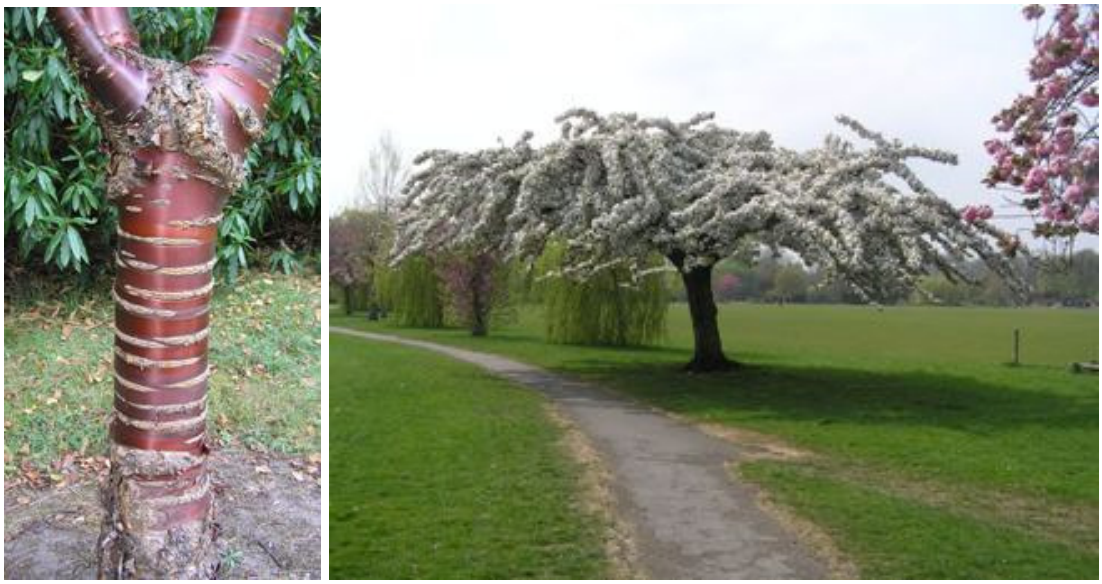
Warwickshire trees seem to be grafted. Other ornamental cherries with small leaves include *P. serrula* (bark largely shiny-red) and *P.* x *subhirtella* (double flowers peaking earlier in the year).
Key locations for seeing some: Jephson Gardens, Leamington Spa (one near the Newbold Terrace entrance, another east of the Aviary café); **Largest local specimen:** possibly one at Jephson Gardens near Newbold Terrace entrance (1.45m GBH/2007), but identity needs checking.

***Prunus pendula* – Weeping Spring Cherry (requires confirmation)**
Possible specimens at Warwick University and in Hampton in Arden (the latter possibly an important specimen of the rare 'Stellata'.Two specimens at Jephson, two at Christchurch Gdns, and one at St. Mary's (flowering 3-4 weeks before Kanzan, rather small single pink flowers, small & coarsely-toothed leaves, grafted, appear to be this (check hairy veins etc).

***Prunus persica* – Peach**
Source: N China, but with a long history of cultivation elsewhere.
Distribution: Seemingly rare in our area.
Further Notes: The rather long, narrow leaves means it can easily be overlooked as an Almond *P. dulcis*. But when fruit are produced, they develop the familiar appearance of thr fruit you purchase and are very different to the green, thin-fleshed fruits of almonds. The flowers are much smaller and emerge a little later.
Key locations for seeing some: Shakespeare's Birthplace Trust, Stratford (a couple in garden, a few fruit in 2007); Keresley House, Coventry (on owner's 2007 plant list, but not seen by the author).

***Prunus sargentii* – Sargent's Cherry**
Source: Mountains of Korea, Sakhalin and N Japan. Introduced to Britain in 1893.
Distribution: Local distribution unclear, possibly one of the more frequent ornamental cherries.
Further Notes: A round-headed cherry producing a particularly fine show of large 'single' pink flowers in spring (peaking 2-3 weeks before *P. avium*) with purple stamens. It also produces a particularly fine show of autumn reds and oranges from September. The bark of local (all young) trees is greyish brown with raised horizontal ridges (lenticels) and never shining or peeling. The entirely hairless leaves tend to be fairly large with a pronounced drawn-out tip and single teeth along the margins. Korean Hill Cherry *P.* x *verecuna* is similar but has the leaf stalks and undersides hairy. Judd's Cherry *Prunus* x *juddii* has paper pink flowers and is a probably hybrid between *P. sargentii* and Yoshino Cherry *P. yedoensis*.
Key locations for seeing some: Jephson Gardens, Leamington Spa (one E of the Aviary Café); Warwick Castle (one in the car park off Castle lane); Coughton Court (a young one near orchard); Warwick University (various places); Rock Mill Arboretum, Milverton (recent planting by D. Howells); Green Lane, Coventry (a roadside specimen may be this cherry); Friar's Street, Warwick (two larger specimens with pale pink flowers overhanging the road beside Westgate School may be this cherry or Judd's Cherry).

***Prunus* x *schmittii* – Schmitt's Cherry**
Source: A hybrid of Wild Cherry *P. avium* and Greyleaf Cherry *P. canescens* developed in 1923.
Distribution: Seemingly rare locally.
Further Notes: A fastigiate cherry (branches directed upwards) like *Prunus* 'Spire' but with a bark comprised of smooth, shiny red bark like Tibetan Cherry *P. serrula*, but broken up by many more horizontal strips (lenticels) and wth larger leaves.
Key locations for seeing some: The Rec, Stratford (car park); Caldecott Park, Rugby (near north entrance); Talton House near Newbold on Stour (a medium-sized one near the large Robinia).



The striking bark of Tibetan Cherry (left). A very fine Chinese Flowering Cherry at Nicholas Park, Warwick (right).

***Prunus serrula* – Tibetan Cherry**
Source: W China. Introduced to Britain in 1908.
Distribution: Occasional in local parks, gardens, churchyards and cemeteries.
Further Notes: The beautiful deep-red, shining and often peeling bark of the trunk with widely spaced, paler horizontal bands, and rather small, narrow leaves make this a relatively distinctive cherry. Other cherries with reddish bark either have denser bands, broader leaves or a narrower crown. The small white, pendulous flowers tend to be obscured by the emerging foliage – a poor display for a cherry.
Key locations for seeing some: Elmdon Park, Solihull (a group at SW corner of Park); Leamington: Warwickshire College (several, largest 1.19m GBH/2006), Cloister Way (several in a front garden at junction with Almond Ave); Upton House (a fine one near the lakeside Gingko); St Nicholas Park, Warwick (near the Sitka Spruce, 1.31m GBH/2006); Coventry: War Memorial Park (several by the aviary) and St Paul's Cemetery, Holbrooks (several); St Mary's Church, Bilton (1.18m @ 1.2m/2007); The Firs Gardens, Stratford (a fairly young one); Crewe Lane Arboretum, Kenilworth; Rock Mill Arboretum, Milverton (young planting); Radway Grange (1.41m GBH/2007).

Largest local specimen: Shuckburgh Park 'Wild garden' area (1.73m @ 0.9m/2007).

***Prunus serrulata* – Chinese Flowering Cherry**
Source: Japan. Introduced to Britain in 1822.
Distribution: Local status unclear.
Further Notes: A very broad, flat-topped cherry with rather long pointed leaves and lumpy spur shoots. Some Japanese Cherries are very similar.
Key locations for seeing some: Crewe Lane Arboretum (a fine one in the rear garden of Southcrest bungalow); St Nicholas Park, Warwick (a fine 'Albi-Plena' by the river, 1.65m GBH/2007).

Prunus* 'Shidare Yoshino' – see *Prunus* x *yedoensis

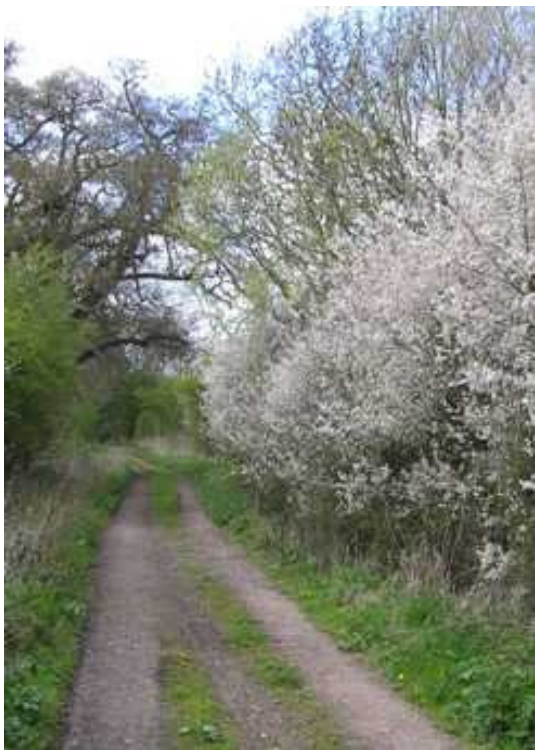
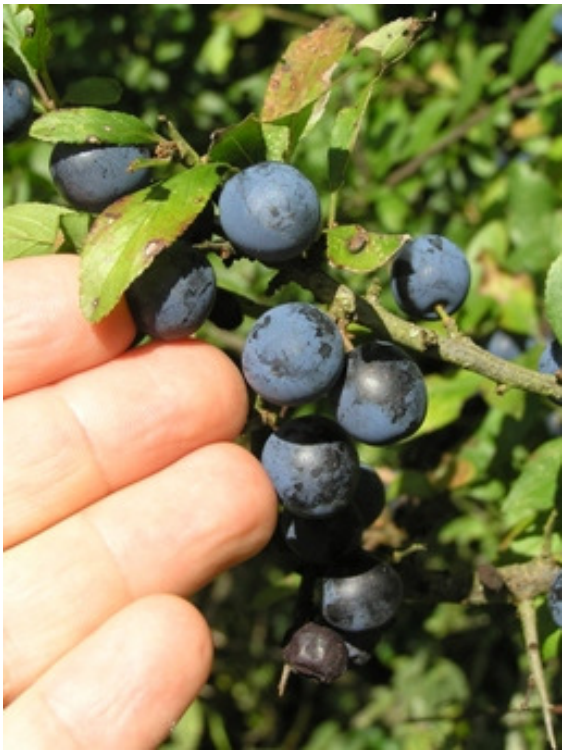
***Prunus* 'Shirofugen' – see *Prunus* ' Japanese Cherries'**

***Prunus* 'Shirotae' – see *Prunus* ' Japanese Cherries'**

***Prunus* 'Shogetsu' – see *Prunus* ' Japanese Cherries'**

***Prunus spinosa* - Blackthorn (Sloe)**
Source: A widespread native shrub. Also present in Europe and N Asia.
Distribution: Common in local hedgerows (especially on heavier soils), woods, roadsides, along watercourses and railway embankments and sometimes on old industrial land. Not usually planted in formal landscapes but much planted along main roads like the A46 between Coventry and Stratford upon Avon and certain stretches of motorways embankment.
Further Notes: Probably our most abundant *Prunus*, a vigorously suckering shrub that can form large, dense thickets. Blackthorn is most conspicuous in April when it produces masses of small white flowers upon dark, leafless shoots bearing vicious thorns. It is often mistaken for the white-blossoming form of *P. cerasifera*, but that species flowers earlier (typically March), is a taller, less dense and less spiny bush, with green leaves emerging alongside the blossom. Wild Plum and Damson flower at the same time as Blackthorn but have larger petals, and (like *P. cerasifera*) lack spines and are generally lankier in form. In late summer and autumn, the attractive bluish, bloomed fruit ('sloes') can also be very conspicuous if the previous spring allowed plentiful pollination. These fruit are extremely tart, but mixed with an equal weight of sugar can be used to favour gin ('sloe gin'). The hybrid between Blackthorn and Plum *P. domestica*, known as *P.* x *fruticans*, has occasionally been recorded in our area. 'Purpurea' is a rare form with smaller, purplish leaves, and a weaker bloom of pinkish flowers and is much less spiny. Much of the Blackthorn planted along main roads in the late twentieth century flowers about a fortnight before the Blackthorn associated with older hedges, suggesting that it might be of non-British origin.
Key locations for seeing some: Present in many nature reserves e.g. Brandon Wood, Ryton Wood and Pools, Ufton Fields, Kingbury Water Park, Stonebridge Meadows, Wyken Slough and Tocil Meadows; also Stratford (banks of the Avon E of Moathouse Hotel) and Warwick (Priory Park, hedge

near Nursery School and a big thicket on the river island of Warwick Castle).
Purpurea: Warwick Castle (one in Fox's Study 2006 but dead by 2009).

Blackthorn is our most abundant Prunus and its pure white blossom is conspicuous in hedges during April. The fruit (right) are called sloes and ripen in the autumn. They are very tart but can be added to sugar and gin to produce sloe gin.

***Prunus* 'Spire' – a hybrid flowering cherry**
Source: A 1930's hybrid of Fuji Cherry *P. incisa*, developed by the British company Hillier.
Distribution: Some local parks, roadsides and gardens.
Further Notes: An upright ('fastigiate') cherry, with quite large, single pink flowers in April (at about the same time as *P. avium*) and leaves that are quite broad with double teeth on their margins and tapering very suddenly to a point. The bark is dull grey-brown with horizontal lenticels. Other fastigiate cherries include Schmitt's Cherry *P.* x *schmittii* (which has strips of shiny red bark) and Lombardy Poplar Cherry 'Amanogawa' (which has double flowers and much narrower leaves).
Key locations for seeing some: Jephson Gardens, Leamington Spa (a couple in the E section); Brueton Park, Solihull (one in the 'maple zone'); War Memorial Park, Coventry (some quite large ones beside the path near the railway); Ashorne Hill Manor (in main garden).
Largest local specimen: possibly Newnham Paddox Art Park (the larger of two is 1.08m @ 1m/2007), though the War Memorial Park ones need measuring.

***Prunus* x *subhirtella* – Winter Cherry**
Source: An old hybrid from Japanese gardens, though precise origins unclear. Introduced to Britain in about 1900.

Distribution: Fairly frequent in local parks, gardens, churchyards and cemeteries, but not easily distinguished from certain other cherries except when in flower during winter months.
Further Notes: A cherry with small white or pale pink double flowers in autumn or winter will almost certainly be the form 'Autumnalis' of this tree. Like Japanese cherries, it is normally grafted onto the base of our native *P. avium* but has very different-looking and much earlier blossom followed by much smaller leaves. *P. cerasifera*, which can flower from late winter, lacks the typical cherry bark (smooth with horizontal markings) of a *P. subhirtella* trunk and has much denser blossom. Other small-leaved cherries include *P. serrula* (bark mainly shiny-red) and *P.* 'Pandora' (single flowers in mid spring).
Key locations for seeing some: St. Mary's Churchyard, Warwick; Riversley Park, Nuneaton; Crewe Lane Arboretum (garden of Southcrest bungalow); possibly Bancroft Gardens, Stratford (by Cox's Yard); frequent in gardens in places like Coventry and Kenilworth.

***Prunus* 'Tai Haku' – see *Prunus* ' Japanese Cherries'**

***Prunus* 'Umineko' – Seagull Cherry**
Source: A hybrid between Fuji Cherry *P. incisa* and Oshima Cherry *P. speciosa*. Introduced to Britain in 1948.
Distribution: Local status unclear.
Further Notes: Typically a graceful cherry with upwardly-directed branches that arch over once sufficiently large (like a seagull with raised wings) and eventually produce a broad canopy. It produces an attractive show of single white flowers that resemble those of *P. avium* (but denser, 2-3 weeks earlier and accompanied by green unfolding leaves) and has leaves with a downy stalk and deep neatly-formed double teeth.
Key locations for seeing some: Crewe Lane Arboretum, Kenilworth (several easily seen from Crewe Lane); Warwick University (zone 9); St Nicholas Park, Warwick (a fairly young one by the crazy golf area); Canley Crematorium, Coventry (possibly several beside main car park, though flowering peaks about 2 weeks after the Crewe Lane specimens).
Largest local specimen: the largest Canley Crematorium tree is 1.03m GBH/2008, but the Crewe Lane trees have not been measured and seem older.

***Prunus* x *verecunda* – Korean Hill Cherry**
Source: Korea. Introduced to Britain in 1900.
Distribution: Local status unclear.
Further Notes: A gracefull cherry with single white flowers, though not easy to identify from a number of other cherries, including Sargent's Cherry *P. sargentii* (*P.* x *verecunda* has hairy leaf undersides and leaf stalks in contrast to the hairless leaves of *P. sargentii*). Like *P. sargentii*, it produces fine autumn colour.
Key locations for seeing some: Crewe Lane Arboretum, Kenilworth (labelled as *P. serrulata* 'Autumn Glory').

***Prunus* x *yedoensis* – Yoshino Cherry**
Source: Japan, where the most common garden cherry. Introduced to Britain in about 1910.
Distribution: Occasional in parks and gardens.
Further Notes: Typically a low, broad, slightly weeping cherry with rather heavy, zig-zagging limbs. The blossom is pale pink or off-white and the small flowers have just five petals, which usually become darker towards the middle of the flower and tend to produce a bowl-shape. The leaves are rather large, hanging and have whiskered teeth at the margins. 'Shidare Yoshino' is a very neat, strongly weeping 'igloo' shape, and is becoming more popular in gardens as it does not grow too quickly.
Key locations for seeing some: Warwick University (several in zone 9); Wootton Court (a couple along the edge of the Spinney in front of the Court); possibly also one in Christchurch Gardens, Leamington Spa. Shidare Yoshino: front gardens in Kenilworth (Forrest Lane) and Coventry (Fletchampstead Highway slip-road S of Green Lane South junction).

***Pseudocydonia sinensis* – Chinese Quince (probably lost from our area)**
The late Alan Mitchell recorded one at Anne Hathaway's Cottage, Shottery (Tree Register database, dated 1985) but there was no sign of it in 2007, and gardening staff had no knowledge of it.

***Pseudopanax crassifolia* – a lancewood**
Source: New Zealand.
Distribution: Only a single local site known.
Further Notes: Lancewoods are trees related to the Japanese Angelica Tree *Aralia elata* and Castor Aralia *Kalopanax septemlobus*. But they are unusual in having several strikingly different foliage types (a situation known as 'heteroblastic'). The juvenile leaves are very long, narrow, blade-like but downward pointing. But as the tree matures it develops rounded leathery leaves and a good trunk (usually after about 25 years). These changes are so complete that both forms were originally given separate names by Dr Solander on Captain Cooks early voyage (*Xerophylla longifloria* for the juvenile and *Aralia crassifolia* for the adult). Flowering occurs from January to April, with dark berries ripening in November and December.
Key locations for seeing some: Keresley House, Coventry (a young one).

***Pseudopanax ferox* – Toothed Lancewood**
Source: New Zealand.
Distribution: Only a single local site known.
Further Notes: Resembling *P. crassifolia*, though the juvenile leaf is broader, spinier and more strongly patterned and the adult leaf is smaller and deeper green. It generally forms a smaller, shrubbier tree. It flowers in November and December and has much larger fruit that ripen by April.
Key locations for seeing some: Keresley House, Coventry (a young one).

***Pseudopanax laetus* – Shrub Panax**
Source: New Zealand.
Distribution: Only a single local site known.

Further Notes: This *Pseudopanax* forms a large evergreen bush with larger leaves than any other *Pseudopanax* and is often planted to create a tropical feel to a garden in warmer climates.
Key locations for seeing some: Keresley House, Coventry (a young one).

***Ptelea trifoliata* - Hop Tree or Stinking Ash**
Source: Southern Canada & E USA.
Distribution: Rare locally.
Further Notes: A trifoliate shrub (with leaflets resembling those of an ash) producing small clumps of greenish-white flowers in mid summer that eventually form flat, elm-like fruit. The leaves, fruit and bark produce a strong smell when crushed.
Key locations for seeing some: Warwick Castle (alongside left hand path as you enter from the turnstiles); Warwick University (beside the Continuing Education building, Westwood Campus); Arbury Hall (two in the private arboretum).

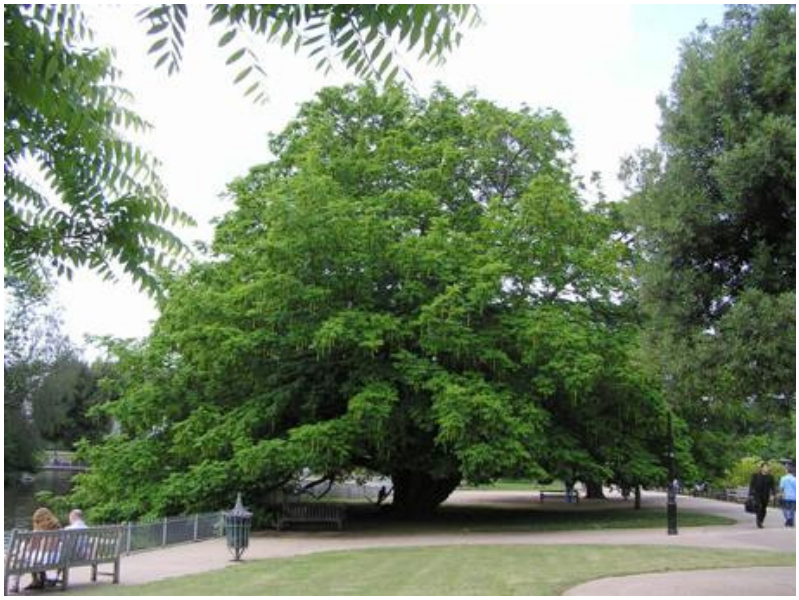
***Pterocarya fraxinifolia* - Caucasian Wing-nut**
Source: The Caucasus Mountains & N. Iran. Introduced to Britain in 1782.
Distribution: Occasional in local parks and larger gardens. Included in several recent plantings.
Further Notes: Mature trees are splendid with broad, dense crowns formed of long, pendulous, pinnate leaves that often touch the ground. The foliage resembles other members of the walnut family such as Black Walnut *Juglans nigra*, but the leaflets are much broader at the base, slightly obscuring the leaf stalk. The small, winged fruits hang in conspicuous catkins up to 50cm long. The stalk bearing the leaflets has no green flange along its margins in contrast to some other scarcer wingnuts listed below.
Key locations for seeing some: Jephson Gardens, Leamington Spa (a magnificent specimen overhanging the north edge of the fountain lake, plus younger ones near the river bridge leading to Mill Gardens); Charlecote Park (3 medium-sized ones close to confluence of R. Dene & R. Avon); Brueton Park, Solihull (several young ones); Riversley Park, Nuneaton (a young one); Warwick Castle (one at west end near the big Douglas Firs); Warwick University (several in zone 9); Talton Hall near Newbold on Avon (1.88m GBH/2007); Rock Mill Arboretum, Milverton (young planting); Keresley House, Coventry (a young one); Barton House, Barton on the Heath (a young one); Shuckburgh Park (a fine one beside main drive close to Hall); Arbury Hall (one in the private arboretum).
Largest local specimen: Single-trunked: Shuckburgh Park (2.90m @ 1.10m/2007). Multiple-stemmed: Jephson Garden (multi-stemmed but approx 5.40m girth at base/2006).

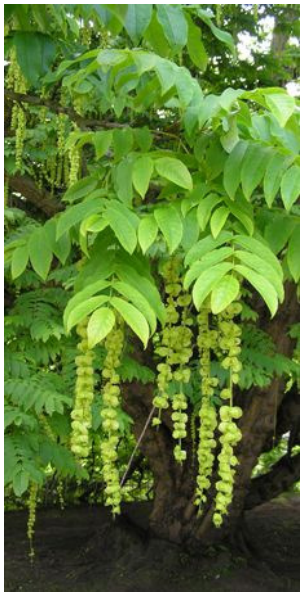
***Pterocarya* x *rehderiana* – Hybrid Wingnut**
Source: A cross between *P. fraxinifolia* from W Asia and *P. stenoptera* from the Far East that arose in the USA in 1879.
Distribution: Rare locally.
Further Notes: This species has narrow green flanges along the leaf stalks, a character state that falls between the two parents. But it is much faster growing than either (an example of hybrid vigour).

Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Pterocarya rhoifolia* – Japanese Wingnut**
Source: Japan, where one of the largest native trees. Introduced to Britain in 1888.
Distribution: Rare locally.
Further Notes: Resembling *P. fraxinifolia*, but with more pointed leaflets and slightly different fruit.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Pterocarya stenoptera* – Chinese Wingnut**
Source: China & N Vietnam. Introduced to Britain in 1860.
Distribution: Rare locally.
Further Notes: This unusual species can be told from *P. fraxinifolia* by the leaf stalks, which have conspicuous green flanges between the leaflets. Var 'Fern Leaf' has ragged edges to the leaflets.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting of 'Fern Leaf' by D. Howells); Barton House, Barton on the Heath (a medium-sized specimen of the type form).



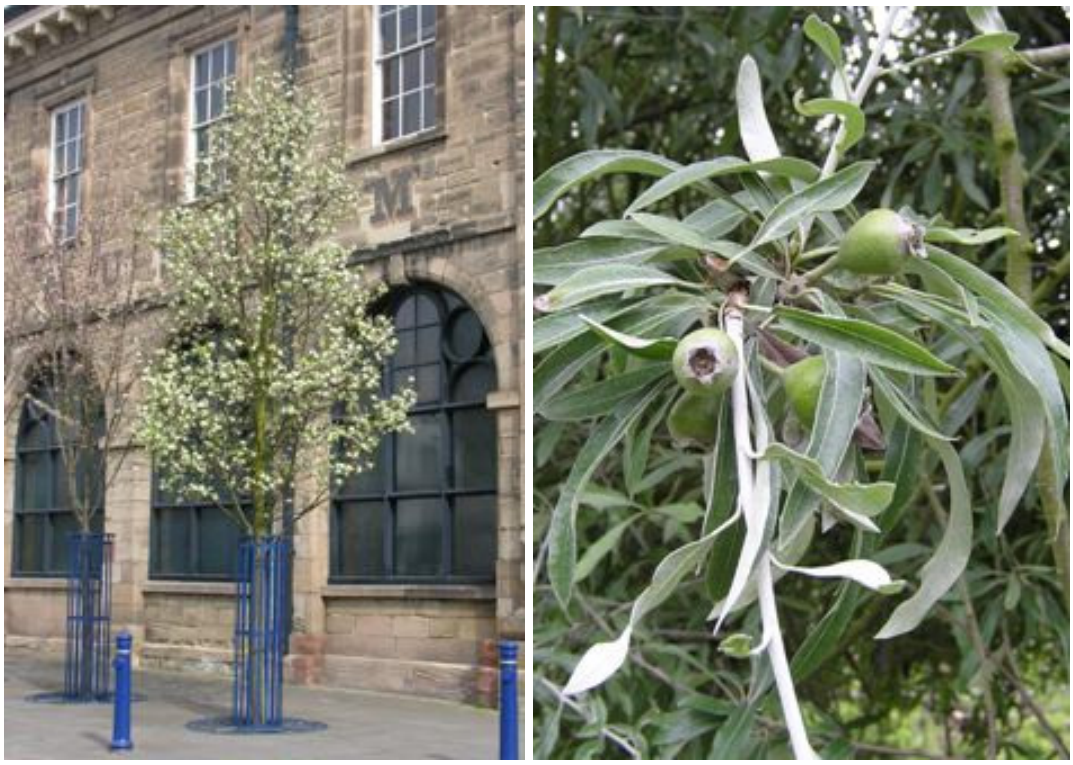


A superb Caucasian Wingnut at Jephson Garden. The pinnate leaves resemble those of walnuts but the catkins of small, winged fruit (right) are very different.

***Pterostyrax hispida* – Epaulette Tree**
Source: China & Japan. Introduced to Britain in 1875.
Distribution: Only a few sites known locally.
Further Notes: Generally forming a neatly conical bush or small tree with large matt leaves bearing long white hairs under the veins. Some specimens sucker profusely. The flowers take the form of densely hairy hanging white plumes and are produced in mid-summer. These produce hanging clumps of hairy brown fuit that catch the light to produce a distinctive appearance.

Key locations for seeing some: Keresley House, Coventry; 'The Firs', Moreton Paddox (a young one in each); Arbury Hall (several in the gardens around the Hall).

***Pyrus* – Pears**
Shrubs and medium-sized fruit trees of the rose family, closely related to *Malus* (apples) and *Sorbus* (rowans, whitebeams etc.). Their fruit contain grit-cells which gives them a distinctive texture when eaten unlike an apple, though the flower structure and arrangement of pips is very similar. About 30 species occur worldwide, all within northern temperate regions of the Old World.



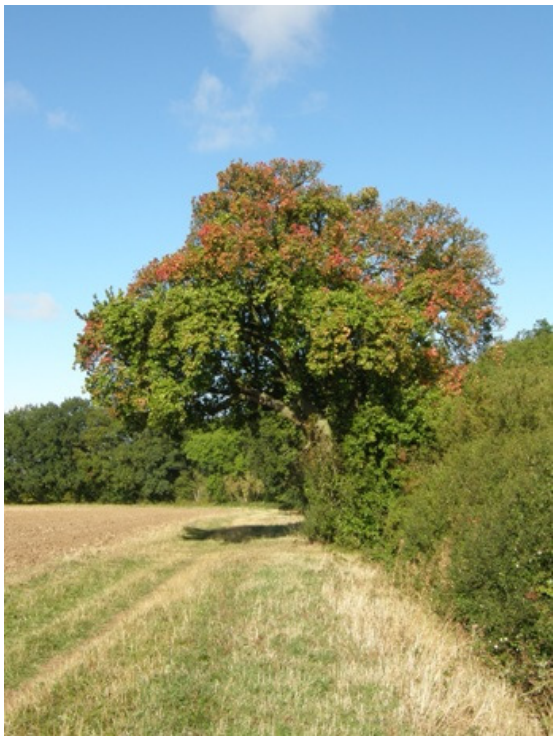
Chanticleer Pear (left) is an increasingly popular tree of town centres, urban streets and public parks. Willow-leafed Pear (right) is a shrubbier species with attractive silver-green foliage

***Pyrus calleryana* – Gallery (Chanticleer) Pear**
Source: Central & S. China. Introduced to Britain in 1908. The form found here 'Chanticleer' was developed in N America.
Distribution: Particularly frequent in new municipal planting schemes e.g. town squares, roadsides, car parks, new housing developments, with some older specimens in some local parks.
Further Notes: A neatly shaped, often conical pear, which produces a good show of blossom in mid spring (coinciding with the unfolding of the new leaves). The shiny, cordate foliage can easily be mistaken for Italian Alder *Alnus cordata*, so look out for the tiny, berry-like fruit.
Key locations for seeing some: Warwick University (many in the main campus area); Warwick: town centre (Market Square and many of the car parks and new housing developments nearby) and Warwick Cemetery

(several in far field); Jephson Park, Leamington Spa (a fairly large one near the Newbold terrace gate); Rugby Town Centre (many in pedestrianised areas); Coventry: along Green Lane.

***Pyrus communis* - Common Pear and Wild Pear**
Source: Common Pear (subspecies *sativa*) originates in Europe and Asia and has been cultivated in this country since at least 995. Wild Pear (subspecies *communis*) is possibly native, with evidence of its existence in Neolithic times claimed by some but disputed by others.
Distribution: Common Pear is widespread in our area as an orchard and garden tree. The status of genuine Wild Pear is currently unclear but several hundred untidy-looking, mop-headed pears grow in Warwickshire hedgerows and a high proportion of these have spiny lower growth and small, roundish fruit, which is suggestive of Wild Pear.
Further Notes: Domestic pears probably have more than one species in their parentage, including Wild Pear. They tend to grow into taller and narrower trees than apples and have a mass of intense white blossom in April which peaks as the grey-downy new leaves unfold (in apples the blossom coincides with the new bright green leaves). The blossom and buds usually lack the pink coloration often found in apples. The bark of mature trunks tends to comprise of small squarish plates quite unlike the scaly bark of most apples, and the fruit of most cultivated pears have the familiar elongate shape. The overall shape tends to be rather untidy with dense clumps of pendulous twigs. However, there is a good deal of variation and many named cultivars. The very dense wood is good for turning and for use in musical instruments, gun handles, ploughshares etc. Wild Pear closely resembles Common Pear but tends to be a broader, mop-headed tree. The lower growth that comes from the trunk or root suckers usually has lots of thorns. The ripe fruit is usually roundish, olive-coloured and less than 4cm in diameter, though some specimens have fruit a little more pear-shaped and colourful suggesting hybrids of the two forms may be present. Common Pear rarely has thorns and the fruit, whilst highly variable, is usually much larger.
Key locations for seeing some: Common Pear: Warwick: Priory Park and Hill Close Gardens (many fine ones); Baddesley Clinton orchard; Ann Hathaway's Cottage, Shottery; Darlingscott (many mature ones in the fields and gardens immediately around the village); Reed Business College, Little Compton (a fine one of 2.84m GBH/2006 N of the Hall with striated rather than plated bark, small sweet fruit and intense autumn colour); Wasperton Farm, near Barford (a Perry Pear of 3.06m @ 50cm/2007). Wild Pear: One of the most accessible specimens (and the national champion) is a large, broad-crowned tree in a hedge beside a footpath just a few metres south-east of South Cubbington Wood; another large specimen occurs not far away overhanging the Welsh Road (south verge) near Welsh Road Farm (2.8m GBH/2011); Upper Fulbrook, close to roundabout junction of the A46 and A439 (3.14m @90cm/2008); also the nearby Meadow Court Farm area (several in the hedges and fields); Aston Cantlow has many in the hedges all around the village towards Great Alne, Haselor and Little Alne; Gaydon has several close the Pimple Lane leading to Northend.
Largest local specimen: Common Pear: Wasperton Farm, near Barford (3.06m @ 50cm/2007), apparently one of the largest-girthed Perry Pears in

Britain, though the crown is now rather small. Wild Pear: The Cubbington Wood specimen is the national champion (3.78m @ 50cm/2010, main trunk splitting into three stems at about 1m).



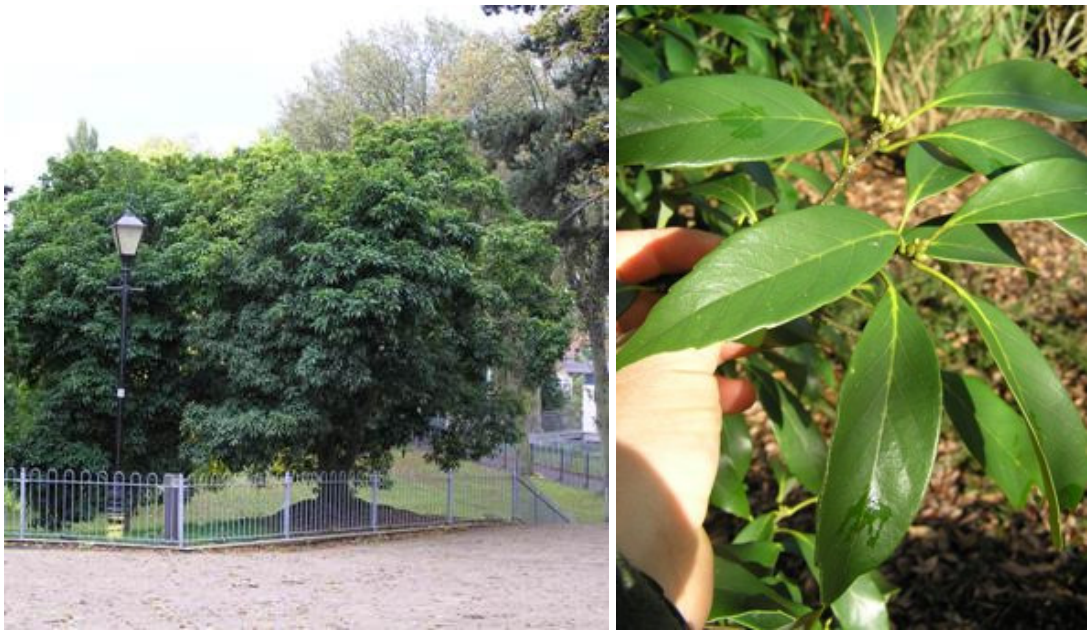
The national champion Wild Pear grows close to Cubbington Wood and produces a stunning show of white blossom in April and fine autumn colour in October. Wild Pear produces small roundish fruit, and the twigs around the trunk have thorns.

***Pyrus nivalis* – Snow Pear**
Source: Italy to Romania. Introduced to Britain in 1800.
Distribution: Rare locally.
Further Notes: A rather broad, often lollipop-shaped pear with oval leaves that unfold silvery grey. These become darker through the summer as the hairs are rubbed off and with its round fruit it could be mistaken for an apple or crab. The fruit are used for perry-cider and it is cultivated in orchards in France.
Key locations for seeing some: Crewe Lane Arboretum, Kenilworth.

***Pyrus salicifolia* - Willow-leafed Pear**
Source: Caucasus & N Iran. Introduced to Britain in 1780.
Distribution: Quite frequent in local parks and larger gardens.
Further Notes: Quite unlike a domestic pear in appearance with long narrow, silvery-green leaves (rather like some willows or Sea Buckthorn *Hippophae rhamnoides*) and weeping foliage that makes it popular in decorative planting schemes. But the blossom and fruit are obviously pear-like. Older trees are often grafted.
Key locations for seeing some: Attleborough Cemetery, Nuneaton (several large ones, grafted onto what appears to be Wild Pear (rounded leaves and lots of thorns); Malvern Park, Solihull (close to the main entrance); Jephson

Gardens, Leamington Spa (near the Ginkgo); St Nicholas Park, Warwick; Ragley Hall Gardens.
Largest local specimen: Attleborough Cemetery, Nuneaton (the largest is 1.50m GBH/2006).

***Quercus* – Oaks**
Some 500 species of mostly large trees found in temperate regions of the northern hemisphere or high altitudes of the tropics. Some are deciduous, whilst others are evergreen. Leaf shape varies greatly and includes maple, holly and sweet chestnut-like forms as well as the lobed leaf shape we are familiar with. However, all oaks are characterised by the production of acorns and the clustered buds at their shoot tips. Two species, *Q. robur* and *Q. petraea* are native to Britain. Identification can be tricky, and the various locally found species and forms can be distinguished by the size, shape and other details of the leaves (including whether tufts of hairs are present underneath), whether the leaves are evergreen, details of the acorns and twigs, texture of the bark and the overall shape of the tree. Fine collections occur locally at Rock Mill Arboretum, Milverton (21 species in 2005), Brueton Park, Solihull, and Keresley House, Coventry.



A very fine Japanese Evergreen Oak at Jephson Gardens. The leathery evergreen foliage is very unlike that of the familiar English Oak, but it produces small acorns.

***Quercus acuta* - Japanese Evergreen Oak**
Source: Japan. Introduced to Britain in 1878 by the Warwickshire plant hunter Charles Maries.
Distribution: Rare locally.
Further Notes: A slow-growing evergreen large shrub with rhododendron or magnolia-like leaves and smooth bark. If it were not for the acorns it produces, you would have little reason for suspecting it was an oak – a useful reminder that oaks viewed on a world basis come with leaves in many

shapes, with relatively few species that resemble the English Oak that we consider so typical.
Key locations for seeing some: Jephson Garden just east of the Glass House (a fine specimen by national standards, 1.40m girth at 30cm/2006); Rock Mill Arboretum, Milverton (young planting).

***Quercus acutissima* – Japanese Chestnut Oak**
Source: NW India to Japan. Introduced to Britain in 1862.
Distribution: Rare locally.
Further Notes: The foliage and acorns are similar to *Q. castaneifolia*, though the leaf lobes have much longer bristles at their tips (minute in *castaneifolia*). It grows fast but forms a relatively small, gaunt tree.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells); Keresley House, Coventry (a young one).

***Quercus agrifolia* – Californian Live Oak**
Keresley House, Coventry (on owner's 2007 plant list, but not seen by the author – Interior Live Oak *Q. wislizenii* is also present here).

***Quercus* x *bushii* – a hybrid oak**
Source: A hybrid between two N American species *Q. marilandica* and *Q. velutina*, which occurs naturally in a limited area around Oklahoma, Mississipi and the Alabama River.
Distribution: Rare locally.
Further Notes: The leaves are glossy green above and are clothed with pale yellowish hairs beneath, up to 5 inches long and strongly 3–7 lobed. A second growth phase occurs in August in which the young growth is a striking red.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

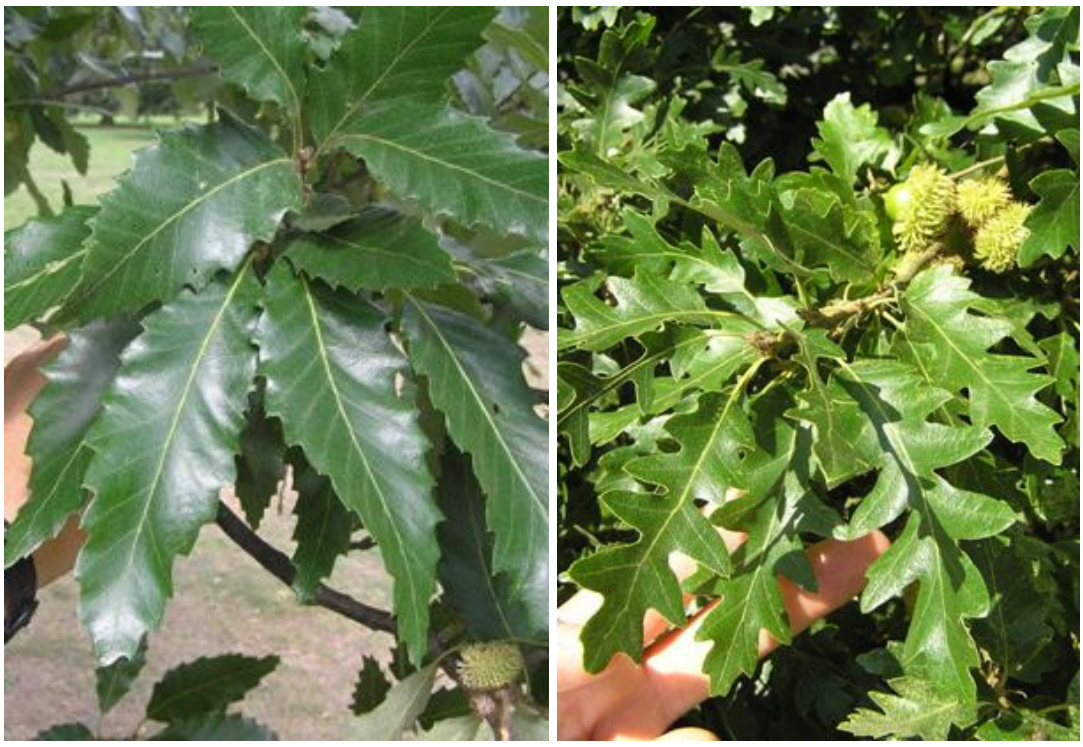
***Quercus canariensis* – Mirbeck's Oak**
Source: Spain, Portugal and N Africa. Introduced to Britain in 1844.
Distribution: Rare locally.
Further Notes: The foliage resembles *Q. macranthera*, but the shoots do not retain the persistent down of that species. It is also semi-evergreen, retaining some leaves throughout the winter (like Turner's Oak *Q.* x *turneri*) and the bark of mature trees is less shaggy than *Q. micranthera* and often with small square plates like *Q. ilex*. It can form a large tree with a dense, rounded head when mature.
Key locations for seeing some: Solihull Town Centre (Homer Road, station end, a fine roadside specimen); Rock Mill Arboretum, Milverton (recent planting by D. Howells, a gift from Lord Heseltine).
Largest local specimen: Solihull, Homer Rd (2.58m GBH/2007); Kenilworth (a young one in garden between Water Tower Lane and Manor Road).

***Quercus castaneifolia* – Chestnut-leafed Oak**
Source: The Caucasus & Iran. Introduced to Britain in 1846.
Distribution: Very occasional in local parks and larger gardens.
Further Notes: The leaves resemble those of Sweet Chestnut (actually one of the most frequent shape for oak leaves when viewed on a world basis), but

the acorns will soon alert you to the fact that it is an oak. The acorn cups and buds are whiskered like Turkey Oak *Q. cerris* and Lucombe Oak *Q.* x *hispanica*, but the leaves are longer with many more veins, and the leaf lobes are shallower with distinct small bristles at their tips and separated by concavities (as opposed to triangular indents). The bark of young *castaneifolia* is also typically very smooth (like Red Oak *Q. rubra*). The form 'Green Spire' may be a cross between *Q. castaneifolia* and Lebanon Oak *Q. libani* and is a more upright tree not subject to mildew.
Key locations for seeing some: The Firs Gardens (a fine, tall specimen beside Rother Street, with leaves rather like *Q.* x *hispanica*, which suggests it may be a *Q. castaneifolia* – *Q. cerris* hybrid); Brueton Park, Solihull (a couple, the largest near the Euodia, 1.65m GBH/2007); Warwick Castle (a young one at west end near the large Douglas Firs); Bedworth Cemetery (a young 'Greenspire' at eastern corner); Rock Mill Arboretum, Milverton (young planting of 'Greenspire'); Keresley House, Coventry (a medium-sized grafted specimen and another very young one). A strange-looking tall oak at Wroxall Abbey may be this species or another cross between *Q. castaneifolia* and *Q. cerris* (leaves resemble those of *Q.* x *hispanica* but bark like *Q. cerris* and shape tall and narrow)
Largest local specimen: The Firs Gardens specimen (2.61m/2007). The unconfirmed Wroxall Abbey specimen is larger (3.56m/2006).

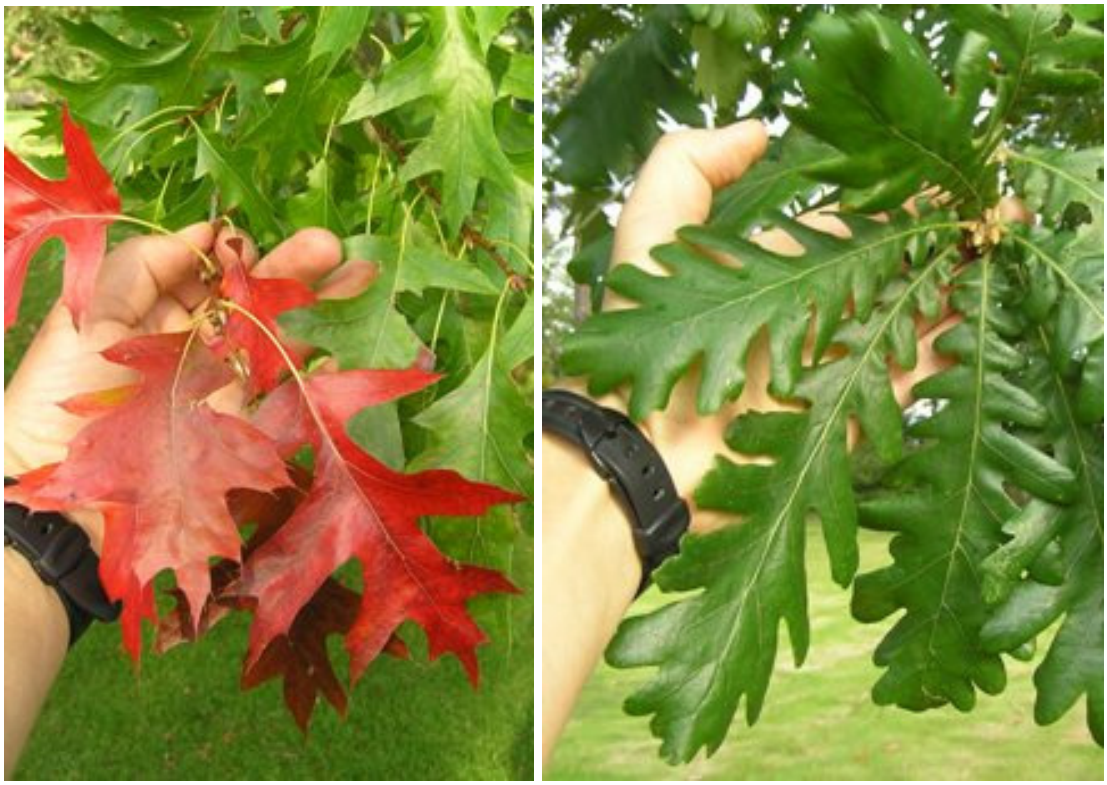
***Quercus cerris* - Turkey Oak**
Source: S Europe and the Near East. Introduced to Britain in 1735.
Distribution: Frequent in local parks, historic properties, along roadsides, and occasionally as mature specimens in open farmland. It also grows in several local woods.
Further Notes: Turkey Oak grows more rapidly than English Oak *Q. robur* and can form a magnificent tree within 100 years. The leaves are highly variable in shape (even within a single tree), but have pointed rather than rounded lobes and all the buds are conspicuously whiskered. The long-whiskered acorn cups are also very different to English Oak though resemble those of Lucombe Oak *Q.* x *hispanica* and Chestnut-leafed Oak *Q. castaneifolia*. The trunk of mature trees has particularly coarse bark fissures compared with other oaks – often the first clue that you are looking at a Turkey Oak, but it is never corky or grafted like *Q.* x *hispanica* (a semi-evergreen hybrid between *Q. cerris* and Cork Oak *Q. suber*). The overall shape varies greatly. We have some very broad and spreading ones, also some very tall and narrow specimens. A concentration of old trees with trunks exceeding 5 metres girth (and presumably all over 200 years old) occurs in the Stoneleigh and Kenilworth area. 'Argenteovariegata' is a rare, slow-growing variety with variegated pale cream and green leaves. This species is capable of setting viable seed and is becoming invasive in a number of local woods (e.g. Bannam's Wood near Morton Bagot).
Key locations for seeing some: Caldecott Park, Rugby (many, including a copse of them at the south end); the Stoneleigh area (many fine ones exceeding 4.5m GBH within the grounds of Stoneleigh Park, also nearby at Stare Bridge and within the Stoneleigh Abbey area); Charlecote Park (an avenue along the entrance drive, with older ones up to 5.67m GBH/2006 in and around the West Park); Coombe Countryside Park (a large one just north

of the Visitor Centre 4.25m/2006); Brueton Park LNR (several); Fillongley Hall (some fine ones in parkland east of Hall, largest 4.34m GBH/2008); Warwick: College Garden and Warwick Castle (the latter with a large tree 4.50m/2006); Jephson Gardens, Leamington Spa; Ragley Hall Gardens; The Rec, Stratford (several young ones at the south end); grounds of Baddesley Clinton (largest 4.33m/2006); Packwood House; Hampton Manor, Hampton in Arden (largest 3.70m/2006); Walton Hall; Parliamant Piece, Kenilworth (a huge one at south end, 5.76m GBH/2006); Leek Wootton, in meadow immediately north of village and est of the Warwick Road, adjacent to a public footpath (a very fine broad tree of 5.82m GBH/2007); Honington Hall (a fine 5.43m/2006 specimen beside main drive, grounds private). Argenteovariegata: Keresley House, Coventry (a young one).
Largest local specimen: Brueton Park LNR (at the east end of the 'North Middle Field', 5.92m GBH/2009).



Foliage of Chestnut-leafed Oak (left) and Turkey Oak (right). Both these oaks have whiskered acorn cups.

***Quercus coccifera* – Kermes (Holly) Oak**
Source: W Mediterranean. Cultivated in Britain since the 17th century.
Distribution: Rare locally.
Further Notes: A slow-growing, shrubby relative of the familiar Holm Oak *Q. ilex*, which can also have holly-like leaves (especially within juvenile foliage), but the leaves of *Q. coccifera* average smaller and rounder. This is the host plant for the Kermes insect, from which cochineal scarlet dye is obtained.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells); Keresley House, Coventry (on owner's 2007 plant list, but not seen by the author).



Scarlet Oak (left) is a North American Oak that produces stunning autumn reds. Hungarian Oak (right) has attractive foliage with large, many-lobed leaves.

***Quercus coccinea* - Scarlet Oak**
Source: SE and central USA. Introduced to Britain in 1691.
Distribution: Possibly widespread in our area but confusion arises from its close resemblance to Pin Oak *Q. palustris*.
Further Notes: The rather maple-like leaves have much narrower lobes than the frequent Red Oak *Q. rubra*, but are only reliably separated from *Q. palustris* by checking the undersides of the leaves, which only have small tufts or brownish hairs as opposed to the larger tufts of *Q. palustris*. Some specimens give a fantastic show of intense red autumn foliage – it makes a major contribution to the fall colour in many parts of America including New York's Central Park. and local specimens can be very bright. Pin Oak usually produces a brick-red by comparison.
Key locations for seeing some: Brueton Park, Solihull (with Pin Oak nearby); Warwick Castle (1.86m GBH/2006); Warwick University (many young ones); Coventry: War Memorial Park, (several young ones) and Canley Crematorium (a fine one).
Largest local specimen: Canley Crematorium (1.94m GBH/2006 – gives fine autumn colour).

Q.* x *crenata* - see *Q.* x *hispanica

***Quercus dentata* – Daimyo Oak**
Source: Japan, Korea and China. Introduced to Britain in 1830.
Distribution: Rare locally.

Further Notes: An oak with particularly large leaves (up to 40cm long) that rather resemble those of *C. macranthera* or some *Q. petraea*. The leaf-bearing shoots are particularly thick (twice that of most other oaks) and are covered in a dense, soft down. *C. macranthera* is the only similar species showing this feature – but has coarsely flaky bark in contrast to the rather corky bark of Daimyo Oak, and its leaves rarely exceed 20cm and have tapered bases lacking the rounded 'auricles' typically found in *Q. dentata*.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting). A specimen in Brueton Park, that has been considered a Daimyo Oak, is more likely to be *Q. macranthera* as its foliage is seemingly identical to the well known specimen of that oak in Jephson Gardens, Leamington Spa.

***Quercus douglasii* – Blue Oak**
Source: The foothills surrounding the Central Valley of California.
Distribution: Rare locally.
Further Notes: The leaves have variably-sized irregular lobes and are an attractive matt torquoise above.
Key locations for seeing some: Barton House, Barton on the Heath (a young one).

***Quercus falcata* – Spanish Oak**
Source: E and S USA. Introduced to Britain in 1763.
Distribution: Only a single site known locally.
Further Notes: An oak with highly variable leaf shape, some with just three pointed lobes, others more resembling species such as *Q. rubra*.
Key locations for seeing some: Keresley House, Coventry (a young one).

***Quercus frainetto* - Hungarian Oak**
Source: S Italy (where it is known as 'farnetto') and SE Europe. Introduced to Britain in 1837.
Distribution: Only a few local sites known (two of which supported nationally important old specimens that recently died).
Further Notes: One of the most attractive oaks, with large leaves (up to 25cm long), bearing many deep lobes that provide the neat, domed canopy with a distinctive texture in summer, especially when viewed from below. Older trees are often grafted onto the trunks of English Oak *Q. robur* (but not in the case of our two big ones). In winter, the shape of mature trees resembles that of a large Wych Elm with multiple, straight stems radiating skywards.
Key locations for seeing some: Wootton Court Spinney (see below); Rock Mill Arboretum, Milverton (a young one); Crewe Lane Arboretum, Kenilworth (a young one); Keresley House, Coventry (on owner's 2007 plant list, but not seen by the author).
Largest local specimens: Warwickshire's only two large specimens have both died during the period of surveying. A tree at Hampton Manor, Hampton in Arden (4.92m @ 1.2m/2007), which was the third largest British specimen according to the Tree Register (and featured in their 2007 newsletter), blew down in February 2008. A slightly smaller tree at Wootton Court Spinney, Leek Wootton (4.0m GBH/2006) had looked stressed with poor foliage production for several years and was fully dead and felled by 2011. No further large specimens are known locally.

***Quercus* x *hickelii* – a hybrid oak**
Source: A cross between Armenian Oak *Q. pontica* and English oak *Q. robur*.
Distribution: Rare locally.
Further Notes: A scarce hybrid with shallowly lobed leaves. It produces a small tree with good yellow autumn tints.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Quercus* x *hispanica* '*Lucombeana*' etc. - Lucombe or Spanish Oak, Fulham Oak etc**
Source: A group of hybrids between two S European oaks (Turkey Oak *Q. cerris* and Cork Oak *Q. suber*) initially developed at Lucombe's Nursery, Exeter in 1763 plus on several subsequent occasions (each occasion giving rise to a different cultivar).
Distribution: Found in a number of local parks, larger or historic gardens and cemeteries.
Further Notes: Identification of the various varieties is difficult but most local specimens seem to be examples of 'Crispa', characterised by a low, broad, fully-evergreen canopy, usually with an obviously grafted trunk (on to the bole of *Q. cerris*) and rather corky bark above the graft line inherited from the Cork Oak parent. In all forms of Lucombe Oak, the leaves have shallow, triangular lobes that are intermediate between typical foliage of the parents. The acorns typically have whiskered cups like *Q. cerris* (but not whiskered in a tree growing near Birdingbury Hall). The form 'William Lucombe' is the original and most vigorous clone that forms taller tree with non-corky bark and loses much of its foliage over winter. The form 'Diversifolia' is a slow-growing variety with corky bark and a rather weeping habit at maturity – many of its leaves are 'violin-shaped' with deep waists. From a distance, Lucombe Oak can easily be mistaken for the evergreen Holm Oak *Q. ilex*, especially in winter, though that species typically has smooth leaf margins and much darker bark that is broken up into tiny square plates. Also beware the occasional Turkey Oak with Lucombe-like foliage (the bark is very different and the foliage is fully deciduous).
Key locations for seeing some: Crispa: Charlecote Park (several large ones, the largest 3.95m GBH/2007 just NW of Charlecote Church); Leamington Spa: Christchurch Gardens, (two fine ones on Clarendon Avenue facing the Parade, with two *Q. ilex* for comparison nearby); one in Jephson Gardens by the near The Parade; a fine one in Victoria Park west of the Adelaide Road underpass, 3.32m @ 80cm/2007); Coventry: several fine ones in Greyfriars Park; one in London Road Cemetery, north sector and one at Caludon Church); Compton Verney (several, including a fine one on the lawn S of the House); Hampton Manor, Hampton in Arden (several fine ones); Staple Hill House, Wellesbourne (a fine one by road, 3.64m/2007); Holbrooks Grange, Long Lawford (several specimens in the gardens and parkland). William Lucombe: Packington Park (a very large, tall one in garden W of the Hall (see below); Birdingbury Hall (a fine tree of 3.85m GBH/2007 may be this form, but acorns resemble *Q. ilex*). Diversifolia: Ann Hathaway's Cottage, Shottery. Others: Springfield Centre, Temple Balsall (a fully deciduous one with *Q. cerris*-like bark in garden north of the Hall, may be a back-cross with *Q. cerris*).

Largest local specimen: William Lucombe: Packington Park (5.79m GBH/2006 – could be a 1760 'original' from Lucombe's nursery); Crispa: Compton Verney (4.22m @ 60cm waist/2008).

Foliage of our two commonest evergreen oaks. Lucombe Oak (left) has lobed leaf margins, frilly acorn cups, and usually rather corky bark on a grafted trunk. Holm Oak (right) has Bay-like mature leaves with silvery undersides, though foliage of young growth can be holly-like.

***Quercus ilex* - Holm or Evergreen Oak**
Source: S Europe. Introduced to Britain about 400 years ago and now naturalised in many coastal districts.
Distribution: Fairly frequent in local parks, larger gardens, cemeteries, churchyards and in the occasional village green or large garden. Often very conspicuous where it occurs, being one of the largest evergreen broadleaves found locally (but beware the superficially similar Lucombe Oak *Q.* x *hispanica*).
Further Notes: A fully evergreen oak (except in the harshest winters), typically with small, dark-green, bay-like leaves that have felty grey undersides. However, foliage on young growth can be holly-like with numerous pointed lobes. It generally has a short trunk that divides low to produce a very broad canopy. Holm Oak can be mistaken for the evergreen forms of *Q.* x *hispanica*, though Holm Oak has dark bark broken into small square plates and is never grafted (most local *Q.* x *hispanica* are). The acorns resemble English Oak *Q. robur*, their cups lacking the bristles of *Q.* x *hispanica*. Holm Oak was frequently planted by the Victorians, though a number of local specimens (notably at Broom and Thelsford Farm near Wasperton) could be much older. It is still popular in new planting schemes and the hybrid between *Q. ilex* and *Q. robur* (Turner's Oak *Q.* x *turneri*) is also

found at several local sites. Some old multistemmed specimens may be the product of batch planting (the planting of several saplings in a tight group).
Key locations for seeing some: Leamington Spa: Jephson Gardens (several fine specimens, largest near the Willes Road gate, 5.60m @ base/2006) and Christchurch Gardens (two fine ones with two *Q.* x *hispanica* nearby); Ilmington Village (several within the village); Stratford: Riverside Park (several near the brass rubbing centre), south end of Tiddington Rd (a fine one in front of hotel), The Firs Gardens beside Rother Street (with *Q.* x *turneri* and *Q.* x *hispanica* to compare against) and Shakespeares's Birthplace garden (a trimmed tree that has entirely spiky juvenile foliage); London Road Cemetery, Coventry (in north sector with *Q.* x *hispanica* nearby); Stretton On Fosse (a fine one 4.85m @50cm/2006 in garden beside church); Beausale (two roadside ones by Red House Farm), Farnborough village (a fine one 4.80m @ 1m/2007 on near the little green at south end of village); Ettington Manor (a multi-trunked one in front of Manor, 4.89m @ 50cm/2007, trunk dividing @ 1m); Bitham Hall, Avon Dassett (a fine one in the copse SW of the lawn, 4.95m GBH/2006), Chadshunt (one beside the Southam Road).
Largest local specimen: Single-trunked: Thelsford Farm, Wasperton (5.17m @ 1m waist/2007, dividing into several stems @ 2m). Multi-stemmed: Broom Hall Inn, Broom (a massive, solid lower base of 7.68m @ 50cm/2008, giving rise to several large stems at 1m, the largest 4.40m around base).

***Quercus imbricaria* – Shingle Oak**
Source: SE USA. Introduced to Britain in 1786.
Distribution: Only a single site known locally.
Further Notes: One of the 'willow oaks' with simple leaves, though leaves broader than Willow Oak *Q. phellos*. The tree's English name refers to its past popularity as a source of wooden roofing tiles (shingles) in its native range.
Key locations for seeing some: Brueton Park, Solihull (a young one N of the Sorbus zone); Keresley House, Coventry (a young one).

***Quercus ithaburensis* – Valonia Oak**
Source: Albania, Greece, Turkey, SW Asia and possibly SE Italy. Introduced to Britain in 1731.
Distribution: Rare locally.
Further Notes: A small tree of neat habit related to *Q. cerris* but with huge acorns 4cm across and smaller leaves with short bristles at the tips of the lobes.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells from Israeli seed).

***Quercus kelloggii* – Californian Black Oak**
Source: SW USA. Introduced to Britain in 1873.
Distribution: Rare locally.
Further Notes: A scarce species in Britain that resembles Red Oak *Q. rubra* and Black oak *Q. velutina*.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Quercus* x *kewensis* – a hybrid oak**
Source: A cross between the European *Q. cerris* and *Q. wislizenii* from SW USA. Introduced to Britain in 1914.
Distribution: Rare locally.
Further Notes: A very rare specimen of a hybrid that forms a vigorous compact tree with almost persistent small dark green leaves.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Quercus macranthera* - Caucasian Oak**
Source: Caucasus to Iran. Introduced to Britain in 1873.
Distribution: Rare locally.
Further Notes: The fully deciduous foliage resembles some specimens of Sessile Oak *Q. petraea* and also the semi-evergreen Mirbeck's Oak *Q. canariensis*, though the leaves average much larger than the former (up to 22cm long) and tend to have shallower and more forwardly-pointed lobes, which decrease in size towards the tip. Most significantly, the shoots are thicker and with a conspicuous covering of soft down that is not found in either of the other two species. The leaf stalk is also downy. Thick, downy shoots are also found in Daimyo Oak *Q. dentata* but in this species the leaves average even larger, with poorly developed lobes but more obvious 'auricle' lobes at the leaf base. The trunk bark of *Q. macranthera* is flaky, unlike either *Q. petraea* or *Q. dentata*.
Key locations for seeing some: Leamington Spa: Jephson Gardens, (the tall oak just north of the Glass House), also some further young oaks beside the path at York Walk (south of the R. Leam); Kenilworth: Abbey Fields, (one at top of Abbey Hill, 1.40m GBH/2006) and Castle Farm Sport Centre (a young one near the childrens playground); Brueton Park, Solihull (a medium-sized tree between Parkridge Centre & Malvern Park, 1.30m GBH/2007 has traditionally been considered *Q. dentata*, but foliage identical to the Jephson tree).
Largest local specimen: Jephson Gardens (2.50m GBH/2006, a nationally important specimen).

***Quercus macrocarpa* – Burr Oak**
Source: E North America. Introduced to Britain in 1811.
Distribution: Only a single certain site known locally.
Further Notes: A rare oak in Britain, with foliage not unlike *Q. robur* but with distinctive acorn cups with fringed scales that produce a mossy texture to the cup. The acorns themselves are very large, up to 5cm long and wide. This species is also sometimes labelled *Q. macrophylla* by suppliers, though the true *Q. macrophylla* comes from Mexico and has unlobed leaves.
Key locations for seeing some: Keresley House, Coventry (a young one); a Kenilworth garden has a young '*macrophylla*' though whether it is a genuine specimen requires checking.

Q. macrophylla – see *Q. macrocarpa*

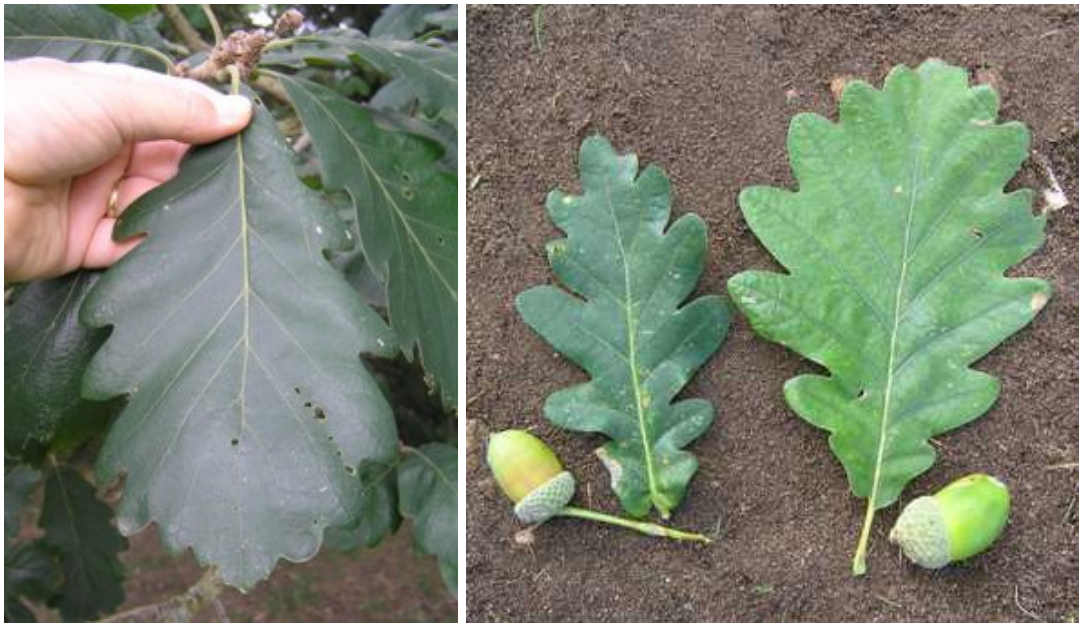
***Quercus marilandica* – Black-jack Oak**
Source: Prairies of E USA. Introduced to Britain in about 1739.

Distribution: Only a single local site known.
Further Notes: The rather distinctive leaf shape (leaf much wider towards its apex) should make this tree easy to spot, though few specimens occur in Britain. It is a small slow-growing tree of low spreading habit. It is often little more than a shrub in the dry rocky hills where it grows wild.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting).

***Quercus nigra* – Water Oak**
Source: E USA. Introduced to Britain in 1723.
Distribution: Only a single local site known.
Further Notes: Another N American oak with highly variable leaf shape. The leaves typically broaden from base to tip with weak lobing at the tip, some with just three pointed lobes, but others more resembling species such as Red Oak *Q. rubra*.
Key locations for seeing some: Keresley House, Coventry (a young one).

***Quercus oglethotpensis* – Oglethorpe Oak**
Source: SE USA, mainly within NW Georgia and adjacent W South Georgia. Only described in 1940 and introduced to the Hillier Arboretum in Hampshire in 1978.
Distribution: Only a single site known locally.
Further Notes: First discovered in a creek in Oglethorpe County, Georgia and originally considered to be a southern form of Shingle Oak *Q. imbricaria*. Now considered rare and declined as a wild tree, though additional populations have been found in recent years. Leaves narrow with weak lobes and rather resembling Turner's Oak *P.* x *turneri*.
Key locations for seeing some: Keresley House, Coventry (a young one).

***Quercus palustris* - Pin Oak**
Source: NE and N Central USA, where it prefers damper soils than the similar Scarlet Oak *Quercus coccinea*. Introduced to Britain in 1800.
Distribution: Scattered specimens in parks, but many require checking for *Q. coccinea*.
Further Notes: Another oak with rather maple-like leaves. The leaf lobes are much narrower than Red Oak *Q. rubra* and the leaves have conspicuous tufts of brownish hairs at the axils of the main veins (in a similar fashion to Small-leafed Lime) which are entirely absent in *Q. rubra*. *Q. coccinea* is very similar but has tiny hair tufts in the leaf axils and tends to develop a more open and irregular crown. *Q. palustris* tends to give a bight brick red autumn colour, not usually as bright as the intense red of *Q. coccinea*.
Key locations for seeing some: Sherbourne Church car park (a very fine specimen, see below); Abbey Fields, Kenilworth (one between the lake and brook, 2.10m GBH/2006); Brueton Park, Solihull (with Scarlet Oak nearby); Allesley Park, Coventry (several); Leamington College car park; Hampton Manor, Hampton in Arden (teste S. Apted, 1980s); Rock Mill Arboretum, Milverton (young planting).
Largest local specimen: Sherbourne Church (2.52m GBH/2008).



Caucasian Oak (left) has leaves like oversized Sessile Oak on thick downy shoots. English Oak (middle) contrasted with Sessile Oak (right) showing lack of leaf stalk, fewer leaf lobes, but long acorn stalk.

***Quercus pedunculiflora* – an oak (requires confirmation)**
Source: SE Europe and Asia Minor, first cultivated in 1870.
Distribution: Only a single site known locally.
Further Notes: A close relative of *Q. robur* (and sometimes just regarded as a race of it) but the underside of the leaf is more pubescent and the leaves seem to typically to have fewer lobes.
Key locations for seeing some: Keresley House, Coventry (a young one from an Estonian source, listed as *Q. estonica*).

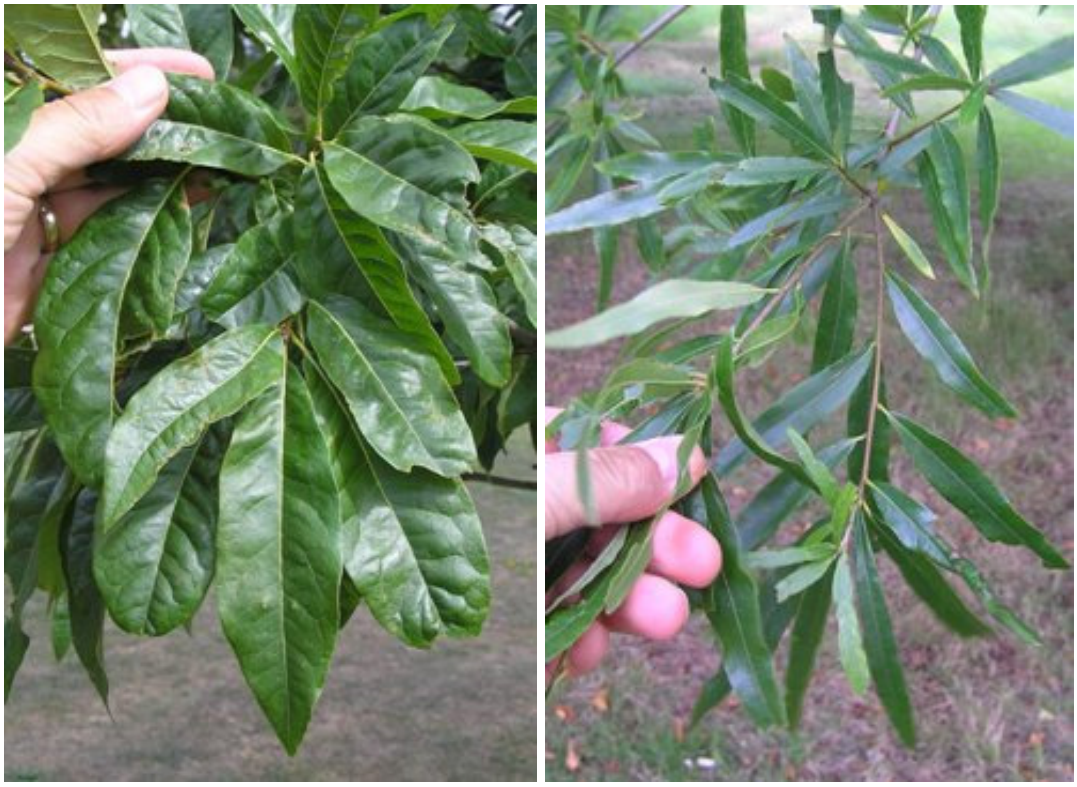
***Quercus petraea* – Sessile (Durmast) Oak**
Source: A widespread native of Britain, predominating in the N & W and on poorer soils elsewhere; also widespread in Europe.
Distribution: Most frequent in the N & W of our area (the Arden), particularly within ancient woods and hedges on acid soils, but only abundant in a few woods. Occasionally found in parks, gardens, churchyards and on roadsides. It has largely been replaced by English Oak *Q. robur* in local managed woods, which has left it with a somewhat relict distribution, though it is quick to re-generate at its old woodland haunts following tree clearance.
Further Notes: Though now a scarce species, it is possible that this was the predominant oak of the wildwood that covered Warwickshire after the last ice age, and it is found in a number of ancient woods such as Piles Coppice and Oversley Wood that seem to be especially old, typically alongside other ancient woodland indicators such as Small-leaved Lime and Rowan. It is also thought that it colonised Britain before *Q. robur*. The name 'sessile' (meaning stalkless) refers to the acorns, which lack the stalk found in *Q. robur*. The leaf by contrast has a conspicuous 1-2cm stalk (almost stalkless in *Q. robur*) and has more numerous and more evenly sized lobes on a more neatly oval leaf which averages larger than *Q. robur*. The shape of the tree also tends to be neater with a longer trunk and straighter branches, especially trees growing in

woodland (which have a characteristic 'wine glass' shape). The two species hybridise locally to produce trees with intermediate characters (*Q.* x *rosacea*, see Smith et. al., 1988), and this is particularly evident around the edges of ancient acid woods containing Sessile Oak but with English Oak in nearby hedges.
Key locations for seeing some: Formal locations: Dordon: a large one beside footpath leading from Brown Lane to the A5 (5.65m GBH/2007, trunk forking at c2m) and Dordon Church (a couple of fine ones, the largest by the gate is 2.89m GBH/2007); Hartshill Cemetery (a couple, largest 2.81m GBH/2007); Jephson Gardens, Leamington Spa (a fine one of 2.32m GBH/2007 near the boating pool); Warwick: Myton Road at junction with Ashley Crescent (3.83m GBH/2007, crown lifted) and Lord Leycester's Hospital, (in the car park at the rear, from an acorn taken from a very old tree at Penshurst Place in Sussex); Knowle (along Station Road); Atherstone (a fine one in the public park beside the Council offices off Long Street, 2.88m GBH/2007); Charlecote Park (several in various parts of the park, non especially large); Knowle (a fine one of 2.69m GBH/2007 at junction of Tilehouse Lane and Morgrove Avenue); Coventry War Memorial park (a fine one N of bandstand, 2.70m GBH/2004, teste O. Johnson); Brueton Park, Solihull (some young ones beside main path just E of Parkridge Centre). Woodlands: Abundant in the following woods (typically with a proportion of *rosacea* hybrids): Piles Coppice, near Binley Woods (some coppiced); Hartshill Hayes (some coppiced); Rough Hill Wood, near Redditch (some coppiced); Oversley Wood, near Alcester (some coppiced); Bentley Park Wood and Monks Park Woods, near Atherstone; Bunsons Wood, Keresley; Wainbody Wood North, Coventry; Clowes Wood, near Earlswood; Bubbenhall Wood; also smaller numbers at Ryton Wood, near Bubbenhall; Park Wood and Tile Hill Wood, Coventry; Arley Wood, Old Arley; Brueton Park LNR, Solihull; Corley Rock, Corley (a large specimen of 5.70m/2007 @ 2m above lowest part of trunk on steep slope overhanging the right-hand fork at the top of Rock Lane).
Largest local specimen: In spinney at east edge of Oldbury reservoir, near Hartshill (6.45m @ base/2010 below large bosses).

***Quercus phellos* – Willow Oak**
Source: E USA. Introduced to Britain in 1723.
Distribution: Rare locally.
Further Notes: No oak serves better to remind us that our familiar English Oak is far from typical when viewed against oaks worldwide. *Q. phellos* is one of a number of oaks with simple, unlobed leaves. In this species they are narrow and willow-like which can cause much confusion if no acorns are present. When acorns are produced, they take two years to mature, like Red Oak and Pin Oak (with which it can hybridise).
Key locations for seeing some: Crewe Lane Arboretum, Kenilworth; Barton House, Barton on the Heath (a young one).

***Quercus phillyreoides* - Ubame Oak**
Source: Japan & China. Introduced to Britain in 1861.
Distribution: Rare locally.

Further Notes: A shrubby, evergreen oak with leaves that resemble *Q. ilex* but are glossy on both surfaces, so perhaps more likely to be confused with a large Phillyrea (which has distinctive toothing around the leaf margin).
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells); Keresley House, Coventry (a young one).



Shingle Oak (left) and Willow Oak (right) are two N American species occasionally found locally with simple unlobed leaves.

Quercus pontica – Armenian Oak

Source: N Turkey, Armenia and adjacent Russia. Introduced to Britain in 1885.
Distribution: Rare locally.
Further Notes: A shrubby oak with large leaves that superficially resemble Wych Elm *Ulmus glabra* rather than an oak (though the leaves lack the assymetrical bases of elm leaves). It is now very rare in the wild.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells); Keresley House, Coventry (a young one).

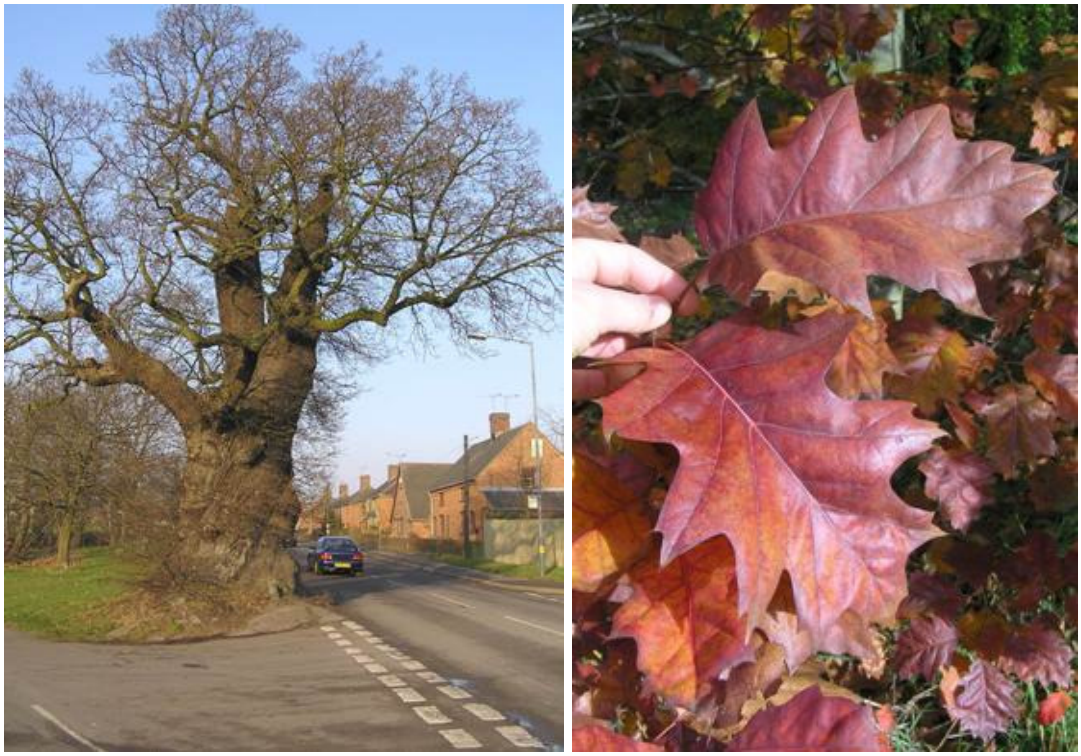
Quercus pubescens – Downy Oak

Source: S Europe & W Asia. Long grown in Britain.
Distribution: Rare locally.
Further Notes: Foliage and stalkless acorns most resembling *Q. petraea*. But the leaves remain densely woolly below and are also downy above, and the the shoots and leaf stalks are hairy. This is the oak you will usually find growing on dry hillsides in southern France.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Quercus pyrenaica* – Pyrenean Oak**
Source: W France, Iberia and Morocco. Introduced to Britain in 1822.
Distribution: Only a single site known locally.
Further Notes: Foliage rather resembling that of *Q. cerris*, but with more rounded leaf lobes and the buds quickly losing their whiskers (persistent in *Q. cerris*). The acorns resemble those of *Q. robur* and lack the whiskered cups of *Q. cerris*. This is the last oak into leaf and the foliage remains grey-green for much of the summer due to a short down on both sides of the leaf. The leaf stalks are very downy.
Key locations for seeing some: Keresley House, Coventry (a young one).

***Quercus robur* - English (Common or Pedunculate) Oak**
Source: A widespread native of southern and eastern Britain, becoming scarcer in the N & W (where it is replaced by Sessile Oak *Q. petraea*) and favouring heavy clays. Also found naturally over much of Europe and east to the Caucasus.
Distribution: One of our most frequent and familiar trees, abundant in broadleaved woods, hedgerows, parks, gardens, cemeteries and sometimes in the middle of fields (especially former historic parklands).
Further Notes: The most familiar oak of Warwickshire with short-stalked leaves bearing large, rounded lobes and stalked acorns that have unremarkable cups. *Q. petraea* has longer-stalked leaves bearing smaller, neater lobes and unstalked acorns. Turkey Oak *Q. cerris* has pointed leaf lobes, whiskered acorn cups and buds, and coarser bark. Most of our veteran trees (nominally 300 yrs plus) are this species, and our largest specimens (with trunk girths exceeding 8 metres) are probably at least 600 years old. A proportion of our oaks are said to be hybrids with *Q. petraea* (known as *Q.* x *rosacea* - see Smith et. al., 1988) and typical ones seem to have sessile acorns but rather short-stalked leaves with more irregular lobes than typical *Q. petraea*. The foliage supports more insects than any other tree species, some of which produce some very distinctive galls such as knopper galls and oak apple galls. A narrow, upright form of this tree known as 'Cypress Oak' ('Fastigiata') can be found at a few sites locally and resembles a dark green Lombardy Poplar from a distance. Form 'Fürst Schwarzenberg' has cream-marked variegated foliage. 'Atropurpurea' (Purple Oak) is a stunted form with variably purple-red leaves. 'Concordia' is a slow-growing form with golden-yellow foliage. Aside from these formally recognised forms, there is also much variation within our trees, some of which may represent European clones.
Key locations for seeing some: Stoneleigh Deer Park, Charlecote Park, Priory Park, Coombe Countryside Park and Coventry's War Memorial Park have many fine mature ones and this is the commonest oak in most local broadleaved woods. Veterans: the Stoneleigh Deer Park complex including the Golf Course, NAC, Abbey Business Park, Stoneleigh Abbey Estate and Deer Keeper's Lodge (many between 5-8m GBH/2006, largest cited below); Packington Park including the Forest of Arden Golf Course (many trees between 5-8m/2007, largest measured so far 8.77m GBH/2007); Ragley Hall (many of 5-7m, largest in wood E of Hall, 8.31m/2007); Snitterfield (several in field near church, east of White Horse Hill, largest 8.03m/2007); Ullenhall village (several at N end of village, largest 6.70m/2006, plus the 7.12m/2007 'Crowley's Oak' on the roadside outside Papillon Hall and a further large one

in the front garden of house near the church); Temple Balsall (specimens up to 7.20m/2006 north of the Springfield Centre); Baginton village (the 'Baginton Oak' near entrance to Coventry Airport 7.0m @ 1m/2006); Coombe Countryside Park (a number exceed 5m/2006, one in the Menagerie is 6.39m); Walton Hall (a 7.06m/2006 specimen W of lake); Kenilworth (particularly old ones at Oaks Farm 7.53m GBH/2007 and along Fieldgate Lane 6.40m GBH/2007). Cypress Oak: College Gardens, Warwick (three); Allesley Park, Coventry (a fine one in the E section); Abbey Fields, Kenilworth (a young one at NE corner); NAC Showground (fairly young ones in various places); Nuneaton town centre (young ones in places); Crewe Lane Arboretum, Kenilworth; Brueton Park, Solihull (a small on in the pinetum); Alderminster (corner of A3400 and Sutcliffe Ave); Honington Hall (two beside the walled garden); Greyfriars Green, Coventry (a young one); The Old Barn, Radway (medium-sized, easily seen from lane). Other varieties: Rock Mill Arboretum, Milverton (young planting of 'Fürst Schwarzenberg' by D. Howells); Keresley House, Coventry (young 'Atropurpurea' and 'Concordia'). **Largest local specimen:** Stoneleigh Abbey (NW corner of visitor's car park (9.24m GBH/2010, known as 'Shakespeare's Tree' and possibly known to the Bard – has been claimed to exceed 1000 years in age, but this needs verification). Cypress Oak: Honington Hall (largest 1.70m GBH/2006). Historical: The 'Bull Oak' of Wedgenock Park, west of Warwick, featured in Strutt's 1826 *Sylva Brittanica*, and captured in photos now at Warwick's County Records office, was measured at 11.15m @ 1.8m/1838 by J.C. Loudon but was apparently burnt down by a tramp's bonfire early in the twentieth century. It was said that twenty people could fit into its hollow trunk.



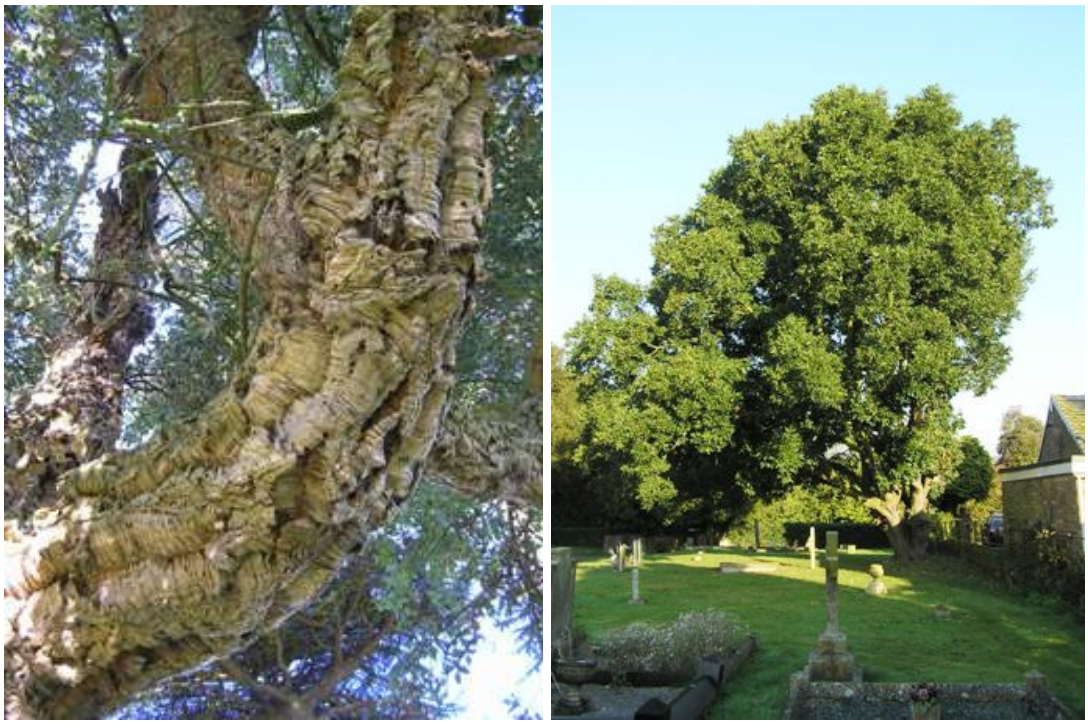
English Oak has produced many fine veterans, including the Baginton Oak (left) which is probably at least 500 years old. Red Oak (right) is the commonest N American oak locally and can give fine autumn colour.

***Quercus* x *rosacea* – the natural hybrid between *Q. petraea* and *Q. robur* (see under *Q. robur*)**

***Quercus rubra* - Red Oak**
Source: E. North America. Introduced to Britain in 1724.
Distribution: The most frequent of the N American oaks in our area – present in many parks plus some larger gardens, along road verges and in some woods.
Further Notes: The rather maple-like leaves with sharply-pointed lobes are quite unlike our native oaks, and their larger size (up to 20cm long), rather shallow lobes, and lack of hair tufts underneath usually makes for easy identification from Pin Oak *Q. palustris* and Scarlet Oak Q. *coccinea*, though they can vary somewhat in size and shape. The only species that might cause real confusion is Black Oak *Q. velutina* (rare in our area), which has downy shoots, leaf stalks and young leaves, and generally a rougher bark with orange fissures. This is a fast growing tree that can attain great size within 100 years and appear much older than it really is. It shares with its American cousins *Q. palustris*, *Q. coccinea* and *Q. velutina*, the possession of very flat acorn cups, and the fact that the acorns remain on the tree for two years being small on first year shoots but but larger on second year old growth. The autumn leaf colour can include deep scarlets and oranges and it makes a major contribution to the fall colour of eastern North America. Form 'Sunshine' has soft golden yellow foliage.
Key locations for seeing some: Formal settings: Warwick: Priory Park (some fine ones at the highest point of the park, possibly late 18th century specimens), St Nicholas Park and Warwick Castle (up to 4.01m GBH/2006 at latter); Abbey Fields, Kenilworth (several, including a very fine one in car park, 3.58m/2006); Jephson Gardens, Leamington Spa (several, plus a *Q. velutina* near the main entrance to compare them against); Stratford's Riverside Park (one of 3.72m/2006 near Brass Rubbing Centre); Brueton Park, Solihull; Wootton Court Spinney, Leek Wootton (a large one 4.09m/2006); Rock Mill Arboretum, Milverton (young planting of 'Sunshine'); Eathorpe Hall (a very fine 18th century specimen just S of Hall, 5.10m GBH/2007); Whitley Abbey School, Coventry (a fine specimen of 4.74m @ 1.40m/2008 beside Caretaker's House). Woodland: Oversley Wood, near Alcester: Arley Wood, Old Arley: Chantry Wood, near Meriden; Hartshill Hayes.
Largest local specimen: Priory Park (the largest of several big ones is 5.18m GBH/2006).

***Quercus suber* – Cork Oak**
Source: Mediterranean from Portugal to Croatia. Introduced to Britain several centuries ago.
Distribution: Rare locally.
Further Notes: Once mature, a remarkable looking oak with very thick, spongy bark that is the source of natural cork used in the wine and textile industry. The leaves are fully evergreen and rather variable in shape, with lobes barely formed in some specimens whilst others have them almost as pronounced as Lucombe Oak *Q.* x *hispanica* (a hybrid between this species and Turkey Oak *Q. cerris* that is fairly frequent in our area). The strange bark is designed to protect the tree from fire and is harvested every 7-10 years in

parts of Europe. It quickly grows back. Holm Oak *Q. ilex*, has much darker bark finely square-cracked and hard. Lucombe oak never has bark quite so corky and has whiskered acorn cups like *Q. cerris*.
Key locations for seeing some: Packington Park (a mature one with a damaged crown just west of the Hall, 2.13m GBH/2006); 'The Yews' Moreton Paddox (1.02m GBH/2007, probably older than its girth suggests but shaded by bigger trees); Keresley House, Coventry (on owner's 2007 plant list, but not seen by the author).



The only mature Cork Oak known in Warwickshire is at Packington Park and displays the fully expressed corky bark (left). Turner's Oak is another rarity - this fine specimen is at Willoughby Church (right).

***Quercus* x *turneri* - Turner's Oak**
Source: A cross between English Oak *Q. robur* and Holm Oak *Q. ilex*, arising before 1780 in Essex.
Distribution: Very occasional in local parks, churchyards and large gardens.
Further Notes: A semi-evergreen tree most resembling Lucombe Oak *Q.* x *hispanica* in leaf shape. But the bark is never corky like most Lucombe Oak's but tends to have small square plates like *Q. ilex*, and the leaves tend to be much longer with narrower leaf bases and the shallow lobes more forward pointed (rather triangular in Lucombe Oak). In winter it produces the appearance of having lost half of its leaves, retaining a thin adornment of evergreen ones (like some *Q.* x *hispanica* and also *Q. canariensis*). Local specimens all appear to be of the form 'Pseudoturneri'.
Key locations for seeing some: Willoughby Church (a fine one, see below); Stratford, The Firs Gardens beside Rother Street (a fine leaning one, 1.92m GBH/2006); 'Knowle (a medium-sized one in the shopping centre car park); Brueton Park, Solihull (a young one in the pinetum); Rock Mill Arboretum, Milverton (young planting); Keresley House, Coventry (on owner's 2007 plant

list, but not seen by the author); Talton House near Newbold on Stour (a young one near the large London Plane).
Largest local specimen: Willoughby Church (a fine multistemmed one, 3.26m around base/2007, with largest of three main stems 2.22m @ 90cm).

***Quercus variabilis* – Chinese Cork Oak**
Keresley House, Coventry (on owner's 2007 plant list, but not seen by the author).

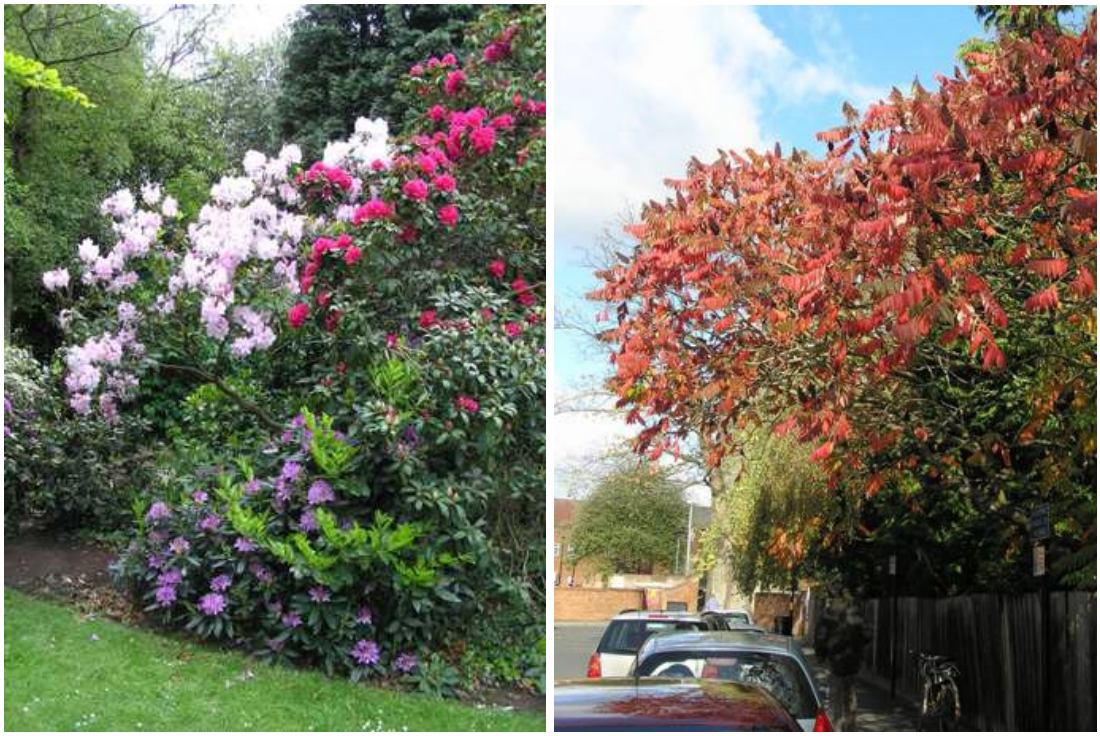
***Quercus velutina* - Black Oak**
Source: Eastern USA. Introduced to Britain in 1800.
Distribution: Rare locally, possibly just at Jephson Gardens.
Further Notes: Foliage very similar to the more frequent Red Oak *Q. rubrum* but with persistently woolly shoots, larger buds and less deeply lobed leaves. 'Rubrifolia' ('Champion Oak'), has bigger leaves the the wild form.
Key locations for seeing some: Jephson Gardens, Leamington Spa (a medium-sized 'Rubrifolia' near the main entrance, 1.44m GBH/2006); Keresley House, Coventry (a young 'Rubrifolia').

***Quercus wislizenii* – Interior Live Oak**
Source: California and the northern parts of Mexico.
Distribution: Only a single site known locally.
Further Notes: An evergreen oak rather resembling Holm Oak *Q. ilex* with variable leaves that (like *Q. ilex*) can have holly-like spines around their margins. But the bark of mature trees is different to *Q. ilex* with long ridges rather then small, squarish plates and the undersides of the leaves are less felted. This species generally grows on foothills within its natural range, in contrast to the closely related Coast Live Oak *Q. agrifolia*, which is more strictly coastal.
Key locations for seeing some: Keresley House, Coventry (a young one).

***Rhamnus cathartica* – Buckthorn (Purging Buckthorn)**
Source: A widespread native of England, but scarce in Wales and Scotland. Also found in Europe, W & N Asia.
Distribution: Frequent in our local woods, hedges and scrub, often tolerating very wet soils.
Further Notes: A rather nondescript shrub or small tree that has clusters of small, greenish flowers in late spring followed by a show of shiny, green then black berries. It is most easily confused with Alder Buckthorn *Frangula alnus*, which has more conspicuous whitish flowers, narrower leaves and red then black berries. Both species provide the larval foodplant for the Brimstone butterfly.
Key locations for seeing some: Charlecote Park (along the ditch at the NW edge of the public deer park); Rock Mill Arboretum, Milverton; any natural sites?

***Rhododendron ponticum* – Rhododendron**
Source: A native of two distinct area; the Iberian Peninsula in SW Europe, then SE Europe through to the Caucasus. British plants were introduced from Spain in 1763.

Distribution: Very widespread locally, particularly in parks, larger gardens and woods, preferring the more acidic soils of the north and west. It has become naturalised and highly invasive in some local woods.
Further Notes: The most familiar of the one thousand or so species of Rhododendron, though other mostly smaller species are present locally in gardens. Its beautiful flowers can be variously coloured white, pink or purple. It typically takes the form of a shrub, but may reach a height of 10 metres in older growth. Unfortunately it has a tendency to form thickets in woods and the dense, dark evergreen foliage will completely destroy the natural herb and shrub layer of a wood if it is not controlled. More recently it has been linked to Sudden Oak Death. The Rhododendron acts as a host for the fungus that causes this (*Phytophthora ramorum*) and oak can succumb where Rhododendron is abundant. Warwick University is one of the organisations studying this pathogen.
Key locations for seeing some: Coombe Countryside Park (a managed thicket on the 'heathland'); Kenilworth Road Spinney and Wainbody Wood, Coventry; Wootton Court Spinney, Leek Wootton; Thickthorn Wood, Kenilworth.



Rhododendron (left) provides stunning spring blossom and several colour forms are being grown alongside each other at Caldecott Park, Rugby. Staghorn Sumac (right) is another large shrub grown for colour, but it gives an autumn show of bright reds.

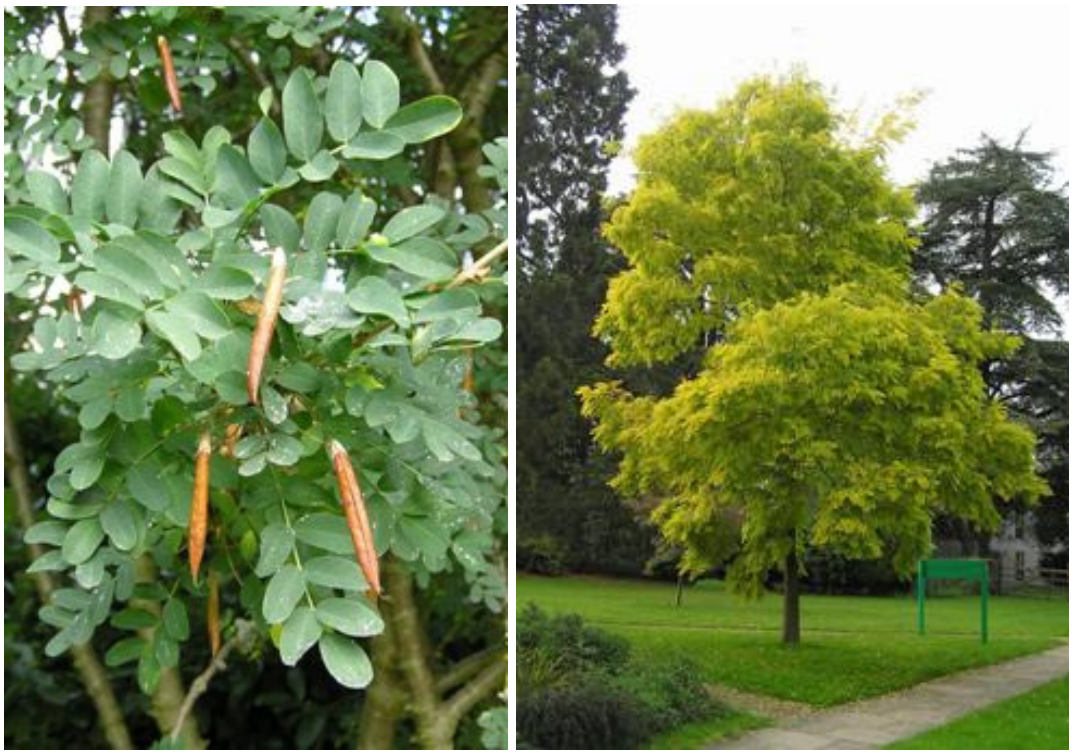
Rhus typhina – Staghorn Sumac

Source: E North America. Introduced to Britain in about 1610.
Distribution: Frequent in local gardens, occasionally in parks and other formal settings.
Further Notes: Typically a large, broad shrub rather than a tree. It has long pinnate leaves, which provide one of the most intense shows of red in autumn. But it is the large and rather unsightly mass of purple hairy fruits at

the end of its stout, furry shoots (that resemble deer horns in velvet) that are its most distinctive feature. Form 'Dissecta' (Cut-leaved Sumac) has the leaflets deeply incised.
Key locations for seeing some: Churchover Church; Wootton Wawen, opposite the church; Stoneleigh (almost opposite the old petrol station), plus easily found in gardens of almost every local suburb. Dissecta: Canley Crematorium, Coventry.

***Robinia pseudoacacia* – False Acacia (Locust Tree or Black Locust)**
Source: E USA (the Appalachian Mountains). Introduced to Britain by the 1630's. The golden-leafed form 'Frisia' was developed in Holland in 1935.
Distribution: Frequent in local parks, gardens, churchyards, cemeteries, and along some roadsides.
Further Notes: One of the largest members of the pea family (Fabaceae) you will find in Warwickshire, and producing typical 'pea pods' from its strings of white, scented, bean-like flowers. The pinnate leaves have particularly rounded leaflets and the bark of mature trees is very coarsely ridged and often bossed. The form 'Frisia' is one of the most conspicuous yellow trees/large shrubs in our area and particularly popular in gardens, though none have yet attained the height of some of our green-leaved specimens. Some local specimens have thorns (as in wild trees), others are thornless. Form 'Bessoniana' is a mop-crowned, thornless form popular in municipal planting schemes, with heavy twisting limbs and a reluctance to flower. Form 'Tortuosa' has twisted branches and dense, contorted foliage. False Acacia is starting to become naturalised in our area, and can sometimes be found suckering profusely from the rootstock of a fallen tree. It is also a local host for Mistletoe, especially in the roads around Coventry Railway Station. Robinia's with pink flowers include hybrids of *R. pseudoacacia* and another N. American species, Clammy Locust *R. viscosa* (hybrid known as *R.* x *ambigua*) or the shrubby *R. kelseyi* (hybrid known as *R.* x *slavinii* 'Hillieri'). There are several varieties of these hybrids, including 'Decaisneana' (almost as *R. pseudoacacia* but with pale pink flowers). Local trees with very deep pink flowers could be *R.* x *ambigua* 'Bella-Rosea' or another *Robinia* hybrid, *R.* x *margaretta* 'Pink Cascade'.
Key locations for seeing some: Jephson Gardens and Victoria Park, Leamington Spa (many mature ones at the latter site, alternated with Tree of Heaven); Coventry: Canley Crematorium (some fine 'Bessoniana' along Robinia Ave), St Paul's Cemetery, Holbrooks (also some fine 'Bessoniana'), War Memorial Park and Whitmore Park; Warwick: Priory Park (several, including some very old ones at top of hill near CRO, the largest 4.66m @1m./2007), St Nicholas Park (a 'Frisia), Lord Leycester's Hospital (a Frisia beside the rear car park); Coombe Abbey Arboretum; Stoneleigh (several along Stoneleigh Road near Stare Bridge); Stratford: near the Royal Shakespeare Theatre (some fine Frisia beside Southern Lane); Kingsbury Church (a fine one along W boundary (2.43m GBH/2006); Coleshill Cemetery (2.63m/2006); Honington Hall garden (a multistemmed one 5.05m around the base/2006 apparently planted at the same time as the Talton House specimen – teste Lady Wiggins); Talton House near Newbold on Stour (a massive parent tree that has given rise to numerous large suckers, see below); Staple Hill House, Wellesbourne (several old ones, the largest 3.88m

GBH/2007, though one side of of trunk lost). Decaisneana: Leamington Spa, Lillington Ave, outside 'The Cotswolds' close to the Lillington Road roundabout (1.60m GBH/2007); possibly another in Vicarage Road, Stoneleigh (teste Graham Walker). Contorta: 'The Yews' Moreton Paddox (a young one). 'Bella-Rosea' or 'Pink Cascade': near Stretton on Dunsmore, in garden at junction of Frankton Lane and the Rugby Road (a young 'Bella-Rosea', one of several purchased from a Nursery in Wolvey for £1 each). Hillieri: Arbury Hall (in private arboretum).
Largest local specimen: Talton House (oldest trunk 5.21m @ 1.2m waist/2007, with numerous large suckers nearby, the largest 3.21m GBH). The largest trunk is thought to date from 1718 and is one of the largest in Britain.



Foliage and 'bean pods' of False Acacia (left). The golden-leafed form 'Frisia' (right) is a popular medium-sized tree.

Robinia x *ambigua* – False Acacia-Clammy Locust hybrids (see *R. pseudoacacia*)

Salix – Willows
Shrubs to relatively large trees (dwarf forms such as Creeping Willow *S. repens* and *S. nakamurana* are not covered here), which are typically either male or female (a condition known as 'dioecious'). The catkins are produced in spring and are usually yellow in the males and green in the females, though immature catkins of either gender are fluffy grey like tiny rabbit-paws. The ripe catkins give off a sweet perfume and are insect-pollinated unlike the longer, pendulous wind-pollinated catkins of the closely related poplars. The leaves of most species are relatively long and narrow and arranged alternately, though a few have oval-shaped ones (e.g. the 'sallows'). About 400 species occur

worldwide, mostly within the northern hemisphere and 19 are native to Britain. Willows can be very difficult to identify and many species have hybridised with up to two other species. A fine collection of willows has been assembled by David Howells at Rock Mill Arboretum, Milverton (20 species and various forms in 2005). Stace (1997) and Meikle (1984) are essential for distinguishing the various native and naturalised willow species, their forms and their hybrids. A key to local forms is also given in '*A Computer-mapped Flora*' (Cadbury et.al., 1971, pp 183-185). Warwickshire is fortunate in that Meikle checked much of the Warwickshire Museum herbarium and worked closely with local botanists during the production of '*A Computer-mapped Flora*'.

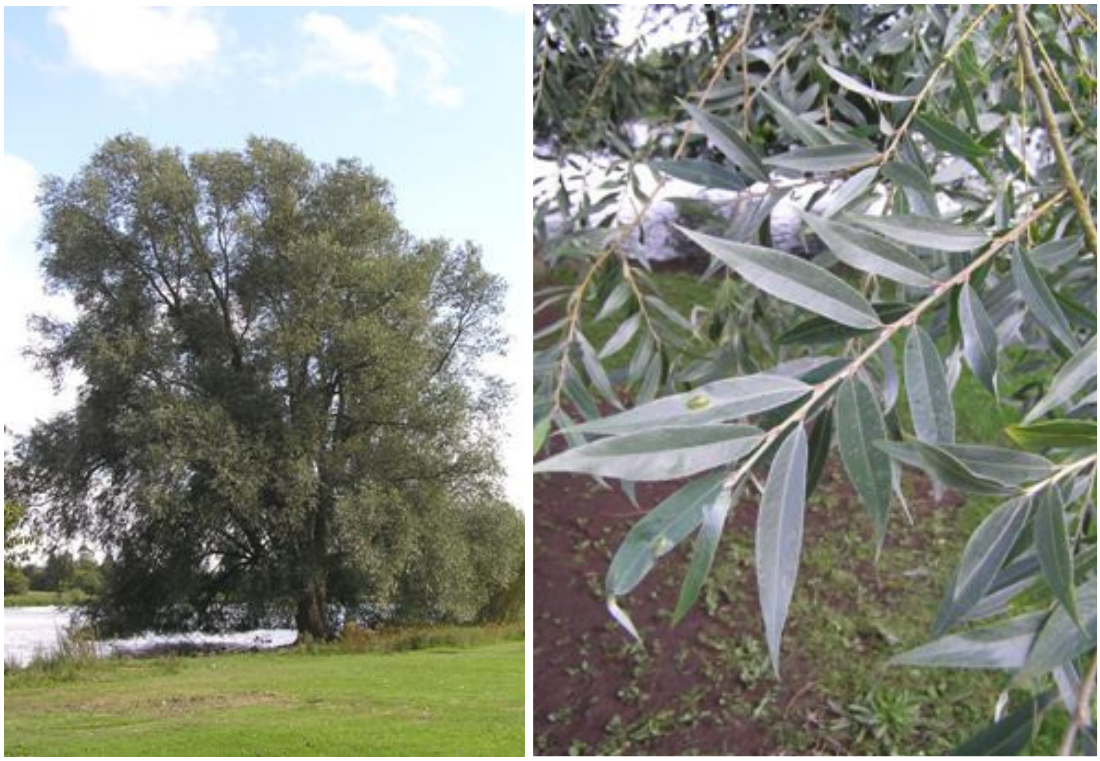
***Salix acutifolia* – Siberian or Long-leaved Violet Willow (Sharp-leaf Willow)**
Source: Poland and Russia to East Asia. Introduced to Britain in about 1798.
Distribution: Seemingly rare locally but an increasingly popular garden shrub available at some garden centres and nurseries.
Further Notes: A relative of *S. daphnoides* producing conspicuous silky, grey-haired immature catkins in winter that flower in spring before the leaves emerge. 'Blue Streak' is a male clone with polished dark violet stems. Other forms have bright red stems but care is needed because a number of other willows can also produce very red shoots.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting of 'Blue Streak' by D. Howells). Check a John Bowra record.

***Salix aegyptiaca* – Musk Willow**
Source: SW to Central Asia. Introduced to Britain in 1789.
Distribution: Rare locally.
Further Notes: A large shrub or small tree with densely pubescent twigs. The large, conspicuous yellow catkins are produce in February and March, occasionally even earlier.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting); Talton House near Newbold on Stour; Alscot Park "by well just downstream of island" (J. Partridge 1989 – male and female flowers on same catkins).

***Salix* x 'Aegma Brno' – a hybrid willow**
Source: A cross between *S. aegyptica* from Asia and *S. magnifica* from China.
Distribution: Rare locally.
Further Notes: A wide, spreading small tree with a smooth grey trunk and thick, stiff branchlets.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells, a female clone).

***Salix alba* - White Willow**
Source: Possibly an ancient introduction to Britain (an 'archaeophyte' – see Preston et. al. 2002). In more recent centuries, various strains of ornamental or timber value have been developed both in Britain and abroad. The native range covers Europe, W Asia and N Africa.

Distribution: Widespread in our area, both as a naturalised species along rivers and streams, and also as a popular amenity tree in parks and roadside planting. It sometimes forms secondary woodland in the wetter parts of old quarries and gravel workings but not to the extent of Crack Willow *S. fragilis*.
Further Notes: Of all the willows, this is the one that most regularly forms a large tree with a well-defined trunk and canopy. The pale undersides of the leaves give the foliage a rather greyish appearance and this becomes most extreme in the Silver Willow 'Sericea', which is a striking tree when grown alongside conifers or darker broadleaves. The leaves are shorter than our other two large willows, Crack Willow and Weeping Willow *S.* x *sepulcralis*. The bark has rather thick ridges, like a poplar – not scaly like Crack Willow. A number of other varieties can be found locally. 'Coerulea' (Cricket Bat Willow) is a neat, fast-growing form with bluish leaves; 'Vitellina' (Golden Willow) has bright orange twigs; 'Britzensis' (Scarlet or Coral-bark Willow) has brilliant orange-scarlet branches. White Willow and Crack Willow are the two main species used for creating pollards beside rivers and streams. The hybrid between this species and Crack Willow (known as Hybrid Crack-willow *Salix* x *rubens*) is occasionally reported in our area.
Key locations for seeing some: Coombe Countryside Park (some very fine Argentea on north lakeshore); The Rec and various other places along the banks of the Avon, Stratford (including some Argentea east of the Moathouse Hotel); Jephson Gardens, Leamington Spa; Warwick: St. Nicholas Park (a large one near the café), Wedgenock Lane-Birmingham Road junction (many large roadside Vitellina).



White Willow forms a large 'trunked' tree and is frequent in both formal settings and more natural locations like riversides and lakesides (here at Wyken Slough, Coventry). The leaves are less elongate and more silvery than the similar Crack Willow.

Largest local specimens: Possibly a very large collapsed specimen near Little Morrell just north of road leading to Newbold Pacey (difficult to measure); also a massive pollard in the Avon Valley, near west bank of R. Avon about 800m north of the Hampton Lucy river bridge (6.02m GBH/2006, with a 5.91 specimen close by).

Salix* x *alopecuroides* – the hybrid of *S. fragilis* and *S. triandra
One pre-1970 record (see Warwickshire Biological Records Centre).

Salix atrocinerea* – the old name for *Salix cinerea oleifolia

***Salix aurita* – Eared Willow**
Source: A widespread native with a north-west bias.
Distribution: Scattered records locally, mostly on the more acidic soils of the north and west of our area, but much scarcer there than similar species such as Goat Willow *S. caprea* and Grey Willow *S. cinerea*.
Further Notes: A shrub of poor acidic soils, with leaves most like those of *S. caprea* but typically smaller and rounder. Not a species of formal settings. It can hybridise with *S. cinerea* (producing *S.* x *multinervis*) and *S. viminalis* (producing *S.* x *fruticosa*).
Key locations for seeing some: The only recent record is for Hay Wood near Wroxall.

The twisted foliage of Corkscrew Willow (left). Goat Willow by contrast has plum-like leaves and is most conspicuous in spring when it produces a fine display of yellow male catkins (right).

***Salix babylonica* var *pekinensis* 'Tortuosa' – Corkscrew (Contorted) Willow**

Source: A female cultivar of the Peking Willow (a long-popular 'weeping willow' of Chinese parks and gardens). Introduced to Britain in 1925.
Distribution: Occasional in local parks and gardens.
Further Notes: A quite unmistakeable tree with twisted and contorted shoots and leaves. Even the older branches show signs of this. In time it forms a large shrub or small tree, but is said to be rather short-lived.
Key locations for seeing some: Allesley Park, Coventry (in walled garden); Moreton Morrell College (two large ones amongst college buildings S of the Hall); Warwick Castle (one near the Swamp Cypresses); Rock Mill Arboretum, Milverton (recent planting); Crewe Lane Arboretum, Kenilworth (a fine one); Middleton Hall (in garden); Talton Hall near Newbold on Avon (1.75m GBH/2007, planted in 1972); Sherbourne House, Sherbourne (one on an island in a pool); Oversley Green (a fine one directly north of the river bridge leading to Alcester);
Largest local specimen: Moreton Hall (girth about 2.5m near base/2006, adjusted for lean).

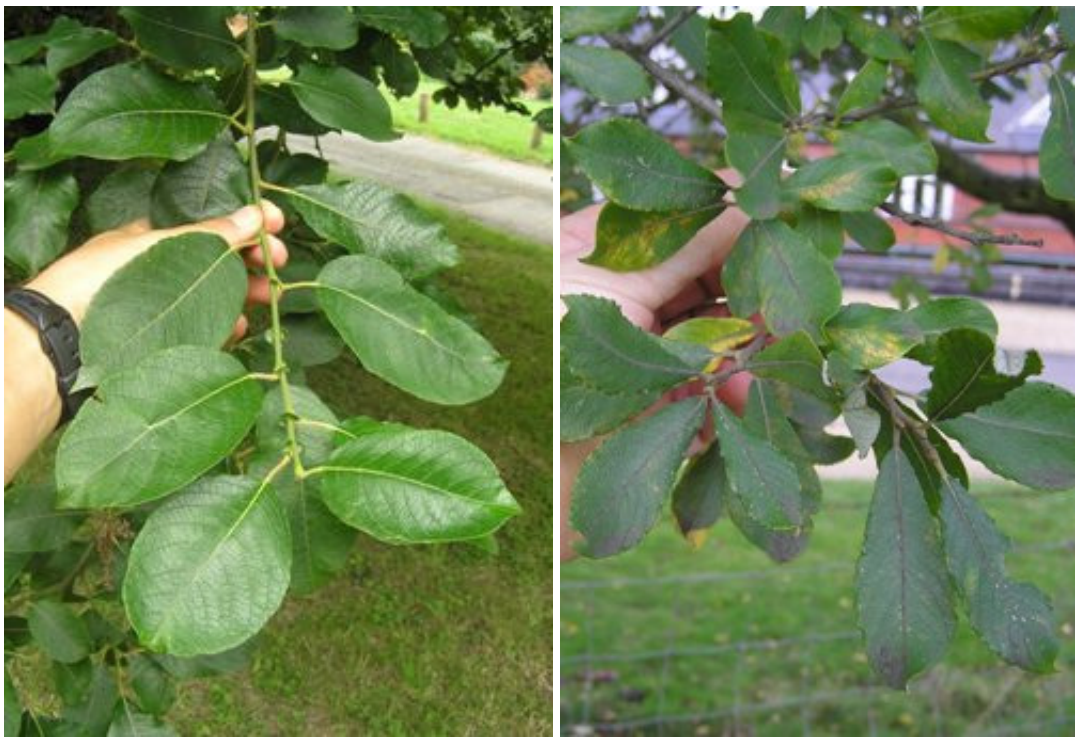
***Salix* x *calodendron* - Holme Willow (a triple hybrid between *S. caprea, S. cinerea* and *S. viminalis*)**
See records in Warwickshire Biological Records Centre. Recent records exist for Shrewley (1984) and Coventry (1994).

***Salix caprea* - Goat Willow**
Source: A widespread native, growing in range of habitats.
Distribution: Widespread in our area, particularly in and around woods, on waste ground, within hedgerows, and occasionally planted in parks, cemeteries and gardens (especially the Weeping Pussy Willow).
Further Notes: One of our broader-leaved, shrubby willows collectively termed 'sallows' and typically the one with the greatest ability to form a tree and the broadest leaves (resembling those of a Plum). The immature catkins appear in late winter and resemble grey rabbit paws. By late February, they can be maturing into the bight yellow male catkins ('pussy willow') or the green female ones which eventually produce masses of fluffy seeds. Both male and female catkins are highly attractive to spring insects such as hibernated queen bumblebees, butterflies and hoverflies. The Weeping Pussy Willow or Kilmarnock Willow 'Pendula' is a weeping cultivar that is becoming popular in local gardens. Goat Willow frequently hybridises with Grey Willow *S. cinerea* locally (producing *S.* x *reichardtii*), and to a lesser extent Osier *S. viminalis* (producing *S.* x *sericans*), and all three species can combine to form the triple hybrid called 'Holme Willow' *S.* x *calodendron* which is recorded from a few local sites. The hybrid of Goat Willow and Dark-leaved Willow *S. myrsinifolia* (known as *S.* x *latifolia*) has been historically recorded from Shrewley Pool, in the vicinity of both parents.
Key locations for seeing some: Wild type: Elmdon Park, Solihull (various places e.g. the car park); Oversley Wood (numerous in places); Compton Verney (a fine specimen on the lawn south of the House); Atherstone Cemetery (by the road); Warwick Castle. Weeping Pussy Willow: frequent in front gardens.

Largest local specimens: Forest of Arden Golf Course (several very old ones within grounds of Scouts land, including a multistemmed one 4.02m @20cm/2007 and a pollard of 2.53 GBH/2007).

***Salix chaenomelides* – an ornamental willow**
Source: Japan, Korea & China.
Distribution: Rare locally.
Further Notes: Typically a vigorous, arching shrub with pinky-purple catkin buds and pinkish-silver catkins with anthers that age dark orange then yellow.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells, a female clone).

***Salix* x *chrysocoma* – the old name for *Salix* x *babylonica* (Weeping Willow)**



The foliage of our two common 'sallows', Goat Willow (left) and the narrower leaves of Grey Willow (right).

***Salix cinerea* - Grey Willow (Grey Sallow)**
Source: A widespread native.
Distribution: Very widespread in our area especially in and around woods, in marshes, in the damper parts of quarries and old industrial sites, along railway lines and road verges, but rarely in parks or gardens.
Further Notes: One of our broader-leaved, shrubby willows collectively termed 'sallows' but with smaller, narrower leaves than Goat Willow *S. caprea*. Most local records relate to subspecies *oleifolia* (Rusty Sallow - it has stiff rusty hairs on the leaf undersides) but a few records of the subspecies *cinerea* exist (these have pubescent twigs and lack rusty hairs beneath the leaves). Like *S. caprea*, the spring catkins are very attractive to insects, though the immature catkins and buds are usually far less conspicuous. This

species can hybridise locally with *S. caprea* (producing *S.* x *reichardtii*), *S. viminalis* (producing *S.* x *smithiana*) and *S. aurata* (producing *S.* x *multinervis*), sometimes forming a triple hybrid with the first two (known as *S.* x *calodendron*). The triple hybrid with *S. viminalis* and *S. purpurea* (known as *S.* x. *calodendron*) is an introduced osier variety.
Key locations for seeing some: Nature reserves such as Brandon Marsh, Ufton Fields, Middleton Lakes, Whitacre Heath, Claybrooks Marsh, Kingsbury Water Park, Ryton Pools, Brueton Park and most other wetlands.

***Salix daphnoides* - European Violet Willow**
Source: Central Europe. Introduced to Britain in 1829 as an amenity tree.
Distribution: A few records for local parks and gardens.
Further Notes: A fast-growing small tree with twigs covered in a striking blue-violet bloom for the first few years of growth. This produces an attractive element within planting schemes. But regular cutting to promote young growth means that it is rarely allowed to grow large. The leaves are shaped rather like *S. alba*.
Key locations for seeing some: Jephson Gardens, Leamington Spa (several S of river close to Willes Road); Rock Mill Arboretum, Milverton (young planting); Talton House near Newbold on Stour (1.20m GBH/2007). WBRC lists Emscote Power Station, 1982, Luddington Horticultural Station, 1982, Moreton Morrell College 1974 and Wyken Nature Park, Coventry 1998).

Salix decipiens* - now regarded as a form of *S. fragilis

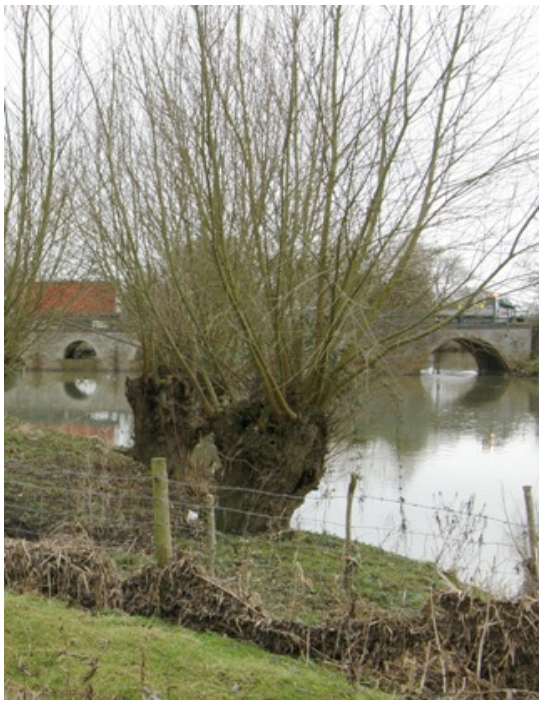
***Salix elaeagnos* – Hoary or Rosemary Willow**
Source: Central Europe & Asia Minor. Introduced to Britain in 1820 as a garden plant.
Distribution: A few local records exist.
Further Notes: Originally introduced for its densely pubescent twigs and narrow leaves, which resemble those of Osier *S. viminalis* or even Sea Buckthorn *Hippophae rhamnoides* in shape but are strikingly furry-white below.
Key locations for seeing some: Rock Mill Spinney, Milverton (young planting); Talton House near Newbold in Stour; Flora 2000 data; Warwick Castle (far end of gardens near river).

***Salix exigua* – Coyote Willow**
Source: W North America and N Mexico. Introduced to Britain in 1921.
Distribution: Rare locally.
Further Notes: A large, erect shrub or small tree with long greyish-brown branches and conspicuous silver foliage. Catkins appear with the leaves on short, leafy stalks.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Salix fargesii* – Fargesi Willow**
Source: Wooded hills of Central China. Introduced to Britain in 1910.
Distribution: Rare locally.

Further Notes: A medium-sized to large shrub with stout, hairless shoots, polished reddish-brown in their second year, and large reddish winter buds.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells); Keresley House, Coventry (a young one).

***Salix* x *forbyana* – Fine Osier (the triple hybrid of *S. viminalis*, *S. cinerea* and *S. purpurea*)**
Probably introduced as a commercial osier plant. Historically recorded from Edgbaston Pool, Shrewley, Alvecote Mill and Olton Reservoir.




Crack Willow is most familiar locally as a pollarded tree along streams and rivers. It closely resembles White Willow but has longer, greener leaves, though these are broader than the shrubby Osier.

***Salix fragilis* - Crack Willow**
Source: Seemingly an ancient introduction to Britain (an 'archaeophyte') that is now widely naturalised. Widespread in Europe.
Distribution: Frequent alongside local streams and rivers, in marshes and occasionally in other situations.
Further Notes: One of the three large willows you find along rivers and streams locally (together with White Willow *S. alba* and Weeping Willow *S. x sepulcralis*) and also occasionally found in parks and more formal settings. Like White Willow, it is frequently pollarded, but it can be distinguished from that species by its longer, greener leaves and much coarser, scaly bark. The twigs snap off cleanly at the base (hence its name), and mature trees are typically spreading with many low branches, and have a tendency to collapse untidily. Most natural reproduction of this tree is asexual through the rooting of twigs and branches that break off in strong winds.A number of forms are recorded locally. 'Furcata' (historically recorded as 'latifolia') is a male tree with rather broader leaves than usual and forked catkins. 'Russelliana' (Bedford Willow) is a female tree with particularly long, narrow leaves bearing

uneven teeth around their margins. 'Decipiens' has the leaves wholly glabrous and can be either sex. This species regularly hubridises with White Willow (producing *S.* x *rubens*) and can also cross with Bay Willow *S. pentandra* (producing *Salix* x *meyeriana*).
Key locations for seeing some: Coombe Countryside Park (many along south shore of the pool); Brandon Marsh (various places); Priory Park, Warwick (beside the Coventry Road entrance). Old pollards: Stratford (many on banks of the Avon north and south of the Town); Tredington (a nice group alongside the A3400 SE of the village); Ilmington (various places around the village).
Largest local specimen: Multi-stemmed: Wellesbourne, a specimen on the south bank of the R. Dene just west of the bypass (7.0m @ ground level/2007, trunk splitting @1m), sadly burnt in recent years, then cut for safety reasons, so largely dead now). But many large Crack Willows have yet to be measured, and there is great scope for breaking this record.

***Salix* x *fruticosa* – Shrubby Osier (the hybrid between *S. viminalis* and *S. aurita*)**
Historically recorded from the canal at Lowsonford.

***Salix gracistyla* – a willow**
Source: The Far East. Introduced to Britain in 1895.
Distribution: Rare locally.
Further Notes: A vigorous, medium-sized shrub with stout, densely grey pubescent young shoots and leaves that start off silky grey-downy before becoming green and smooth. The attractive black catkins have red anthers and appear before the leaves in March.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Salix hastata* – a willow**
Source: Switzerland.
Distribution: Rare locally.
Further Notes: A male clone of a slow-growing, shrubby willow.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Salix hookeriana* – a willow**
Source: Western N Amerca from Alaska to California, also eastern Siberia. Introduced to Britain in 1891.
Distribution: Rare locally.
Further Notes: A medium-sized to large shrub or small multi-stemmed tree with glossy, reddish-brown branches. The silvery catkins appear in winter and make a good show in February. The broad leaves are covered in silvery pubescence.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Salix irrorata* – a willow**
Source: USA from Colorado to New Mexico and Arizona where it grows beside mountain streams. Introduced to Britain in 1898.
Distribution: Rare locally.
Further Notes: An upright shrub rather than a tree with shoots that mature from green to purple and are covered with a striking white bloom (like *S. daphnoides*).
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Salix koriyanagi* – a willow**
Source: Korea.
Distribution: Rare locally.
Further Notes: An important species in the Japanese basketry and wicker furniture industry. Sometimes regarded as a race of *S. purpurea*. A shrub rather than a tree.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

Salix* x *latifolia* – the hybrid between *S. caprea* and *S. myrsinifolia
Recorded at Shrewley Pool 1966 in the vicinity of both parents.

Salix x laurina* – the hybrid between *S. cinerea oleifolia* and *S. phylicifolia
Recorded at Shrewley Pool as recently as 1966.

***Salix magnifica* – a willow**
Source: Szechuan, China. Introduced to Britain in 1909.
Distribution: Rare locally.
Further Notes: A very distinctive willow that forms a large shrub or small tree of sparse habit with large, magnolia-like leaves and producing large catkins in May.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Salix matsudana* 'Tortuosa' – the old name for *S. babylonica* var *pekinensis* 'Tortuosa' (Corkscrew Willow)**

***Salix* x *meyeriana* - Shiny-leaved Willow (the hybrid between *S. fragilis* and *S. pentandra*)**
See biological records centre for data.

***Salix* x *mollissima* – Sharp-stipuled Willow (the hybrid between *S. triandra* and *S. viminalis*)**
Historically recorded from near Alvecote Mill and near Church Lawford.

***Salix moupinensis* – a willow**
Source: China. Introduced to Britain in 1869.
Distribution: Rare locally.

Further Notes: An attractive, medium-sized shrub resembling *S. fargesii*, from which it differs in having smaller, normally hairless leaves. The polished red-brown stems are conspicuous in winter and give rise to slender green catkins in spring.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

Salix* x *multinervis* – the hybrid between *S. cinerea* and *S. aurita
Recorded from Earlswood 1982 and Hampton in Arden 1992.

***Salix myrsinifolia* – Dark-leaved Willow**
Source: A native of northern Britain. Presumably introduced to Warwickshire, which is well outside of its natural range.
Distribution: Very rare locally. This is the *S. nigricans* of older literature.
Further Notes: A small shrubby species resembling *S. cinerea* that is occasionally planted in gardens.
Key locations for seeing some: Shrewley Pool, where first discovered in 1873. The hybrid with *S. caprea* (known as *S.* x *latifolia*) has also been found here.

Salix nigricans* – the old name for *S. myrsinifolia

***Salix* 'Onusta' – a willow**
Source: Origins uncertain.
Distribution: Rare locally.
Further Notes: A low branching shrub of male sex with slender dark-brown branches.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells).

***Salix pentandra* - Bay Willow**
Source: A widespread native of Britain from the Midlands northwards, but widely introduced elsewhere. Probably native to NW Warwickshire.
Distribution: Records mainly concentrated into the NW of our area, where it favours wetlands and the banks of watercourses.
Further Notes: A large shrub or small tree with bay-like leaves, which are much shinier than those of most other wild willows. The hybrid between this species and Crack Willow *S. fragilis* (known as *S.* x *meyeriana*) has occasionally been reported in our area.
Key locations for seeing some: Bradnocks Marsh, near Hampton in Arden and Middleton Lakes; also see biological records centre data.

***Salix purpurea* – Purple Osier or Purple Willow**
Source: A widespread native of wet areas, but also widely cultivated for basketry leaving the origins of many populations unclear.
Distribution: Widely recorded in our area, but not especially common.
Further Notes: A shrub or small tree with long arching, often purplish shoots and striking purplish catkins. Sometimes used in osier beds and occasionally in formal setting for the colour of the young bark (though this is far less striking than European Violet willow *S. daphnoides*.. The triple hybrid with *S.*

viminalis and *S. cinerea* (known as *S.* x. *calodendron*) is an introduced osier variety.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting of 'Nancy Saunders' a form with dark-red, glossy shoots and soft, blue-grey foliage).

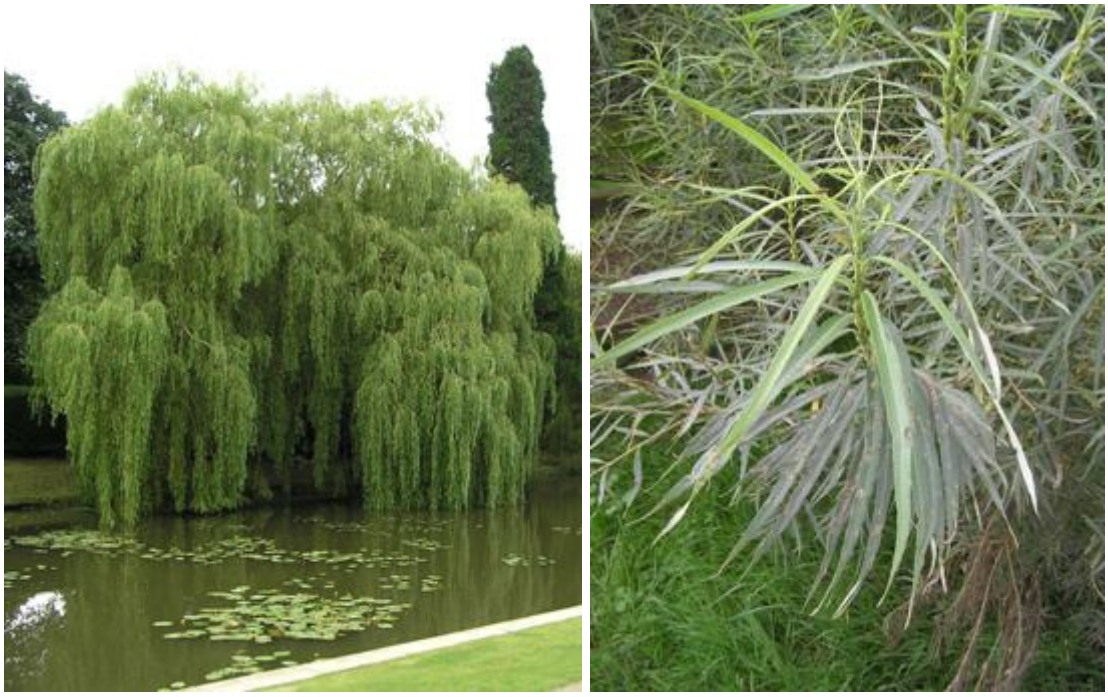
Salix* x *reichardtii* – the hybrid between *S. caprea* and *S. cinerea
A frequent hybrid (with evident backcrosses) that shows a full range of intermediate states between the parents. Recorded widely in our area.

Salix rosemarifolia* – an old name and form of *S. eleagnos

***Salix* x *rubens* – Hybrid Crack-willow (the hybrid between *S. alba* and *S. fragilis*)**
Source: A hybrid between White Willow *S. alba* and Crack Willow *S. fragilis* developed in Europe, but also arising spontaneously in Britain where the parents grow together.
Distribution: Local status unclear, though possibly quite frequent.
Further Notes: A rather variable, fast growing tree to 15 metres, with long, narrow leaves and conspicuous orange-red twigs in winter.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting by D. Howells, a male clone); also see biological records centre.

Salix sachalinensis* – an old name for *S. udensis

***Salix* x *sepulcralis* - Weeping Willow(s)**
Source: British specimens are generally now thought mostly to be a hybrid between the European White Willow *Salix alba* and the Babylon Willow *S. babylonica* of China. The latter (which has brownish rather than yellow shoots) is not hardy in this country but is the main weeping willow in the Far East. Weeping Willows have been grown in Britain since the 1860s.
Distribution: Widespread and frequent, particularly along urban and formal watersides, and in parks and larger gardens away from water.
Further Notes: Our most familiar weeping tree and one that contributes enormously to the character of places like Stratford on Avon and numerous local parks. Most specimens are of the golden-twigged form 'Chrysocoma' (Golden Weeping Willow), but there are some trees with shorter 'streamers' and greyer foliage and shoots that may be Salamon's Weeping Willow 'Salamonii'.
Key locations for seeing some: Stratford (many mature 'Chrysocoma' on both sides of the Avon, particularly within The Rec); Jephson Gardens, Leamington Spa; Coombe Countryside Park (by the lake bridge); Riversley Park, Nuneaton; War Memorial Park, Coventry; Brueton Park, Solihull. Salamonii: St Nicholas Park, Warwick (several by the river just E of the boat house, planted c1890 (based on photographs held by Warwick School), Caldecott Park, Rugby (near the toilets); Middle Tysoe (several roadside specimens along Main Street).
Largest local specimens: Chrysocoma: William Tarver Close, Warwick, overhanging St Nicholas Park (4.0m GBH/2007). Possible Salamonii: St Nicholas Park, Warwick (the largest is 3.13m GBH/2007).



The strikingly pendulous foliage of Weeping Willow at Coombe Abbey (left). Osier (right) has the narrowest leaves of our wild willows but beware similar ornamental species like Hoary Willow.

***Salix* x *sericans* – Broad-leaved Osier (the hybrid between *S. caprea* and *S. viminalis*)**
Historically recorded quite widely in our area, last recorded Henwood 1999.

***Salix* x *smithiana* – Silky-leaved Osier (the hybrid between *S. viminalis* and *S. cinerea*)**
Historically recorded quite widely in our area, most recent record Kineton 1995.

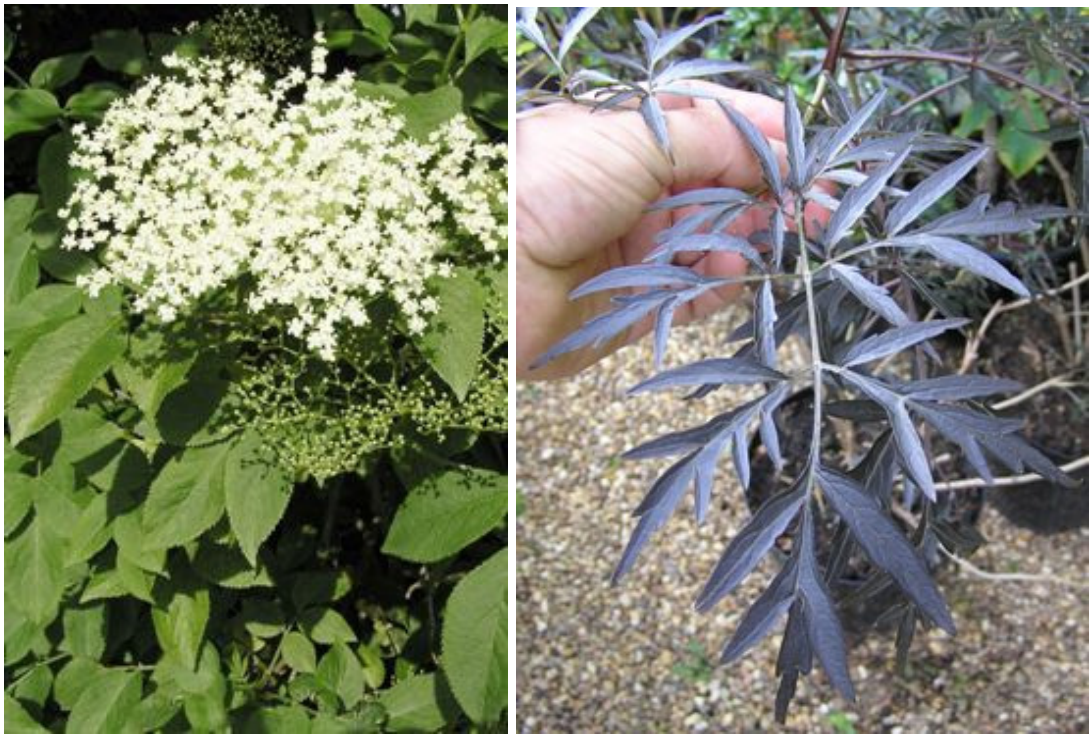
***Salix triandra* – Almond Willow**
Source: An ancient introduction from Europe that has become naturalised in many places.
Distribution: Widely recorded in our area, typically in wetlands.
Further Notes: One of the willows used in basketry and often found in osier beds. The leaves are much shorter than Osier *S. viminalis*, rather more like White Willow *S. alba*, but without the pale undersides. It matures into a large shrub or small tree. The hybrid of this species with Osier *S. viminalis* (known as Sharp-stipuled Willow *S.* x *mollissima* and previously as *S.* x *lambertiana*) has occasionally been recorded locally.
Key locations for seeing some: See biological records centre data.

***Salix udensis* – Japanese Fantail Willow**
Source: NE Asia including Japan, where cultivated. Introduced to Britain in 1905.
Distribution: Rare locally.

Further Notes: A large vigorous shrub of spreading habit with young shoots polished chestnut-brown. Form 'Sekka' is a male clone with strangely flattened and recurved stems that can be enhanced by hard pruning. Specimens labelled as *S. sachalinensis* appear to be the same.
Key locations for seeing some: Rock Mill Arboretum, Milverton (recent planting of 'Sekka' by D. Howells); Talton House near Newbold on Stour (listed as *S. sachalinensis*).

***Salix viminalis* – Osier**
Source: Probably an ancient introduction to Britain (an 'archaeophyte') for use as an important basketry willow.
Distribution: Widespread in our area usually along rivers and streams, in wetlands, or within former osier beds. Occasionally used in landscaping elsewhere (though beware similiar introduced species).
Further Notes: The very narrow leaves with untoothed, inrolled margins allow easy separation from most other willows except species like Hoary Willow *Salix elaeagnos* (which has the underside of its leaves strikingly furry-white). It typically produces a large bush. This is one of the most important willows for basketry, and osier beds ('withy beds') were once widespread along local river valleys, and have presumably given rise to local settlement names such as Withybrook. This species can hybridize with *S. caprea* (producing *S.* x *sericans*), *S. cinerea* (producing *S.* x *smithiana*), *S. triandra* (producing *S.* x *mollissima* - previously known as *S.* x *lambertiana*), *S. aurita* (producing *S.* x *fruticosa*) and occasionally contributes to a triple hybrid involving *S. caprea* and *S. cinerea* (known as *S.* x *calodendron*). The triple hybrid with *S. viminalis* and *S. purpurea* (known as *S.* x. *calodendron*) is an introduced osier variety.
Key locations for seeing some: Stratford (west banks of the Avon east of the Moathouse Hotel); Hampton Lucy (beside the river bridge); Ann Hathaway's Cottage, Shottery (several, including some 'living' Osier sculptures); Brandon Marsh; Stoneleigh Abbey (by the river); Warwick Castle (by the river); Offchurch (by ford); Honington (beside R. Stour); Middleton Lakes (frequent).

***Sambucus nigra* - Elder**
Source: A widespread and familiar native. Also found in Europe, N Africa & SW Asia.
Distribution: Frequent throughout our area in hedgerows, woods, allotments, along railway lines and on waste ground, especially on light soils disturbed and enriched by rabbit activity. Occasionally found within formal settings such as gardens and churchyards where it can become much larger and more shapely than normal.
Further Notes: Usually a shrub or small tree with corky bark, pinnate leaves, masses of creamy-white blossom in early summer and eventually masses of small black berries in autumn. These berries are poisonous raw but have medicinal properties and are used for elderberry wine. Form 'Laciniata' (Parsley-leaved Elder) has the leaflets deeply incised and there are also forms with purple foliage and pale purple flowers e.g. 'Black Lace'. Very old trees have less luxuriant foliage (smaller, narrower leaflets) and less fruit production and can look rather different to normal.



Elder is the most conspicuous blossoming shrub of our hedges and waysides in June producing masses of purple-black berries by late summer. Several attractive varieties are becoming popular in parks and gardens including 'Black Lace' (right).

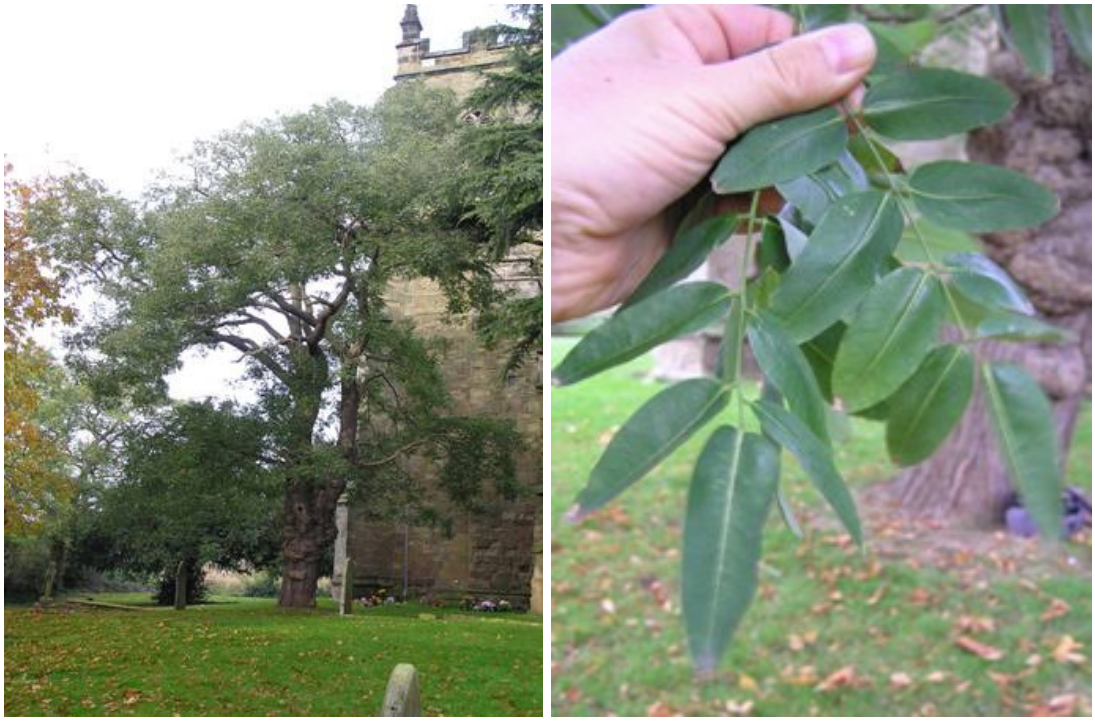
Key locations for seeing some: Stratford (numerous around the Fisherman's car park); Coombe Countryside Park; Brandon Marsh; Warwick: Priory Park (many wild ones), plus a trunked one nearby in a front garden overhanging the Butts road. Laciniata: Upton House (one in bog garden). Purple-leaved form: Coughton Court (north edge of formal gardens, normal foliage); Jephson Gardens, Leamington Spa (in shrubbery opposite the toilets, laciniate foliage).
Largest local specimen: Halford Church (a degenerating multistemmed tree 3.0m around the base but still with one impressive trunk, 1.50m @ 1m/2007).

***Sinocalycanthus chinensis* - Chinese Wax Shrub (Chinese Allspice or Chinese Sweetshrub)**
Source: China. Introduced to Britain in 1983.
Distribution: Rare locally.
Further Notes: A medium-sized shrub with glossy green leaves arranged in opposite pears and nodding white, Magnolia-like flowers with whorls of yellow 'tepals' in the middle. These flowers are produced singly at the ends of the shoots in June.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells); Keresley House, Coventry (a young one).

***Sophora microphylla* – Kowhai**
Source: New Zealand.
Distribution: Only a single site known locally.
Further Notes: A shrubby species with foliage resembles that of *S. japonica* but with tiny leaflets. It provides a striking display of yellow, pea-like flowers in

spring. ‘Sun King’ is a popular cultivar. Kowhai is the name given to several New Zealand *Sophora* species.
Key locations for seeing some: Keresley House, Coventry (a young one).

***Sophora japonica* - Pagoda Tree**
Source: A native of China and Korea but long grown in Japan. Introduced to Britain in 1753.
Distribution: Rare locally.
Further Notes: Large tres can resemble False Acacia Robinia pseudoacacia but the leaflets are longer and shinier. Being a member of the pea and bean family, it produces ‘bean pods’ like *Robinia* and *Gleditsia*, but fruit production is very rare in Britain. The mature bark is strongly and coarsely ridged, a bit like *Robinia*. There is a smaller weeping form called ‘Pendula’.
Key locations for seeing some: Jephson Gardens, Leamington Spa (a large one along the north edge of the east side 3.01m GBH/2006 and a much smaller ‘Pendula’ near the Westfelton Yew north of the Glass House); Bitham Hall, Avon Dassett (a very large one at top of drive, see below); Kingsbury Church (a fine one beside church, 2.76m/2006), Ragley Hall Gardens (a 3.61m/2007 specimen, recently topped); St Mary’s Church, Warwick (a medium-sized one in churchyard south of church); Moreton Hall, Moreton Morrell (a young ‘Pendula’ in front of Hall); Arbury Hall (in private arboretum); Keresley House, Coventry (a medium-sized ‘Pendula’, plus some rarer *Sophora* species, the shrubby *S. microphylla* and prostrate *S. prostrata*).
Largest local specimen: Bitham Hall (3.84m GBH/2006 (the 3rd or 4th largest in Britain).

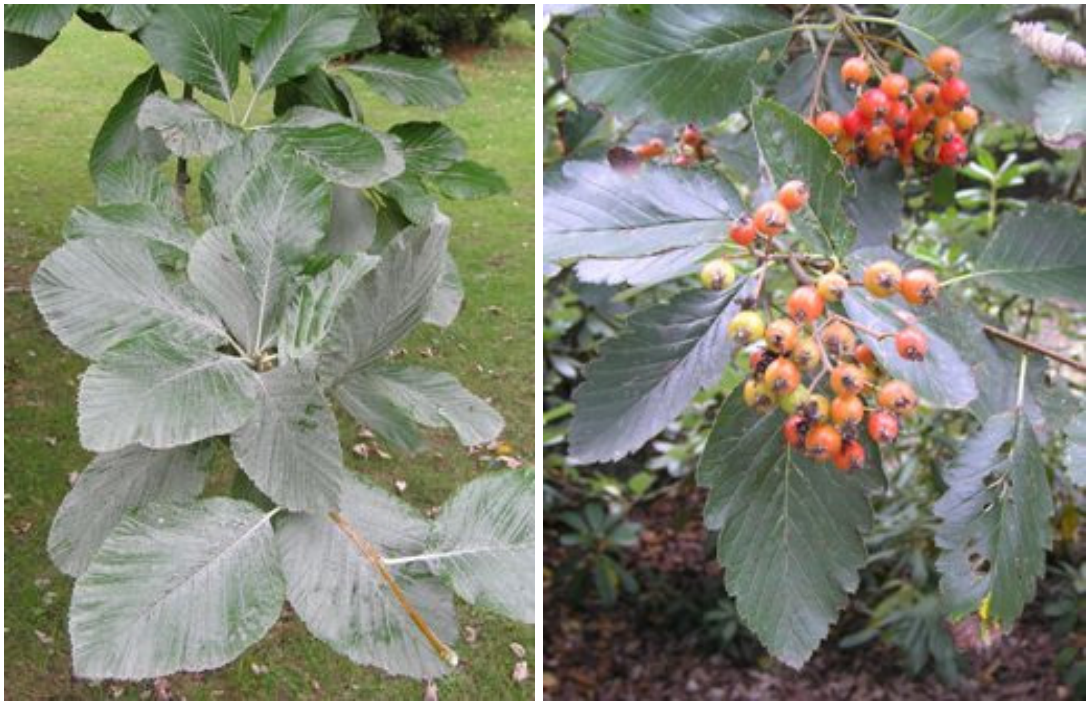


A fine Pagoda Tree at Kingsbury Church. It can be easily overlooked for False Acacia but the leaflets are longer and shinier.

***Sorbus* – Rowans, Whitebeams and Service-trees**
Medium-sized trees of the rose family, related to thorns *Crataegus*, apples *Malus* and pears *Pyrus*. The fruit usually takes the form of bunches of small berries which can be very colourful and ornamental in some species. The leaves vary greatly in shape, being pinnate in the rowans (hence their alternative name of 'mountain-ashes') and True Service *S. domestica*, oval but often with lobes in the whitebeams and rather maple-like in Wild Service *S. torminalis*. About one hundred species occur worldwide, mostly in temperate regions of the northern hemisphere, and three (*S. aria*, *S. aucuparia* and *S. torminalis*) are widespread in Britain. Britain also has several rare endemic whitebeams mostly associated with coastal cliffs and rocky gorges. A number of the most popular forms used in formal plantings are hybrids. Identification of some species is difficult - check leaf shape and colour, berry size and colour, the size, details of the buds, and texture of the bark.

***Sorbus aria* – Common Whitebeam**
Source: A native of the chalk and limestone areas of southern England, but widely introduced elsewhere. Widespread in Europe and also found in Morocco.
Distribution: Frequent in local parks and gardens and frequently in urban streets, especially in its silvery form 'Lutescens'.
Further Notes: Most *Sorbus* trees with oval, unlobed leaves will be this species, though there are a number of cultivars found locally, including 'Lutescens' which has small, pale, silvery leaves and 'Majestica' which has thicker, larger leaves. *S. aria* grows into a medium-sized tree, with attractive clumps of white flowers in spring and rather loose bunches of red berries in autumn, these being larger and less numerous than those of rowans.
Key locations for seeing some: Brueton Park, Solihull (various forms, including 'Lutescens' and 'Majestica'); Jephson Gardens, Leamington Spa (several forms); Abbey Fields, Kenilworth (a 'Majestica' towards the NE corner); Warwick: Priory Park (several near the Police Station with some Swedish Whitebeam for comparison), Warwick Cemetery (numerous 'Lutescens' along Birmingham Road frontage), also opposite St John's Museum; Coventry: Warwick University (many 'Lutescens'), Whitmore Park, Holbrooks (some fine ones along north edge, largest 1.94m GBH/2007); Walton Hall; Ragley Hall ('Lutescens'); Miner's Welfare Park, Bedworth; Ragley Hall gardens (a 'Lutescens' of 1.97m GBH/2007, but trunk forking just above this).
Largest local specimen: St Johns Church, Kenilworth (2.04m GBH/2007, crown very spreading).

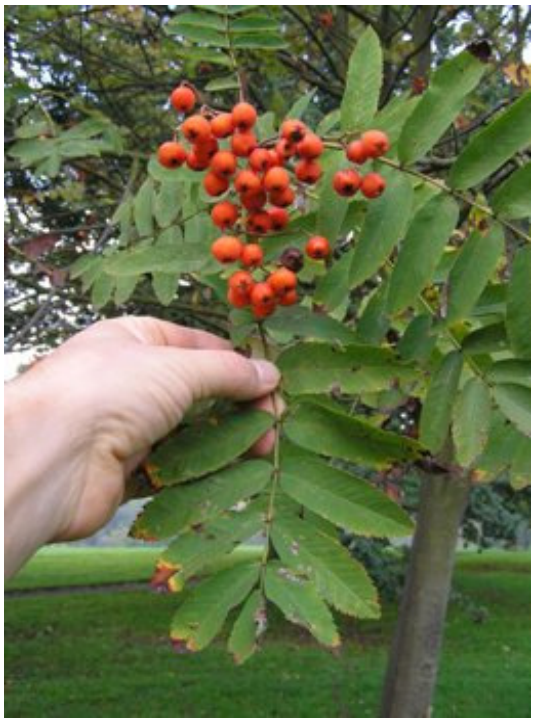
***Sorbus* x *arnoldiana* – Arnold's Mountain Ash**
Source: An obsure hybrid rowan sold by mainly Dutch suppliers.
Distribution: Rare locally.
Further Notes: A number of cultivars of this rowan are sold, though little published information is available.
Key locations for seeing some: Warwick University (several 'Schouten' in zone 2, teste D. Howell).

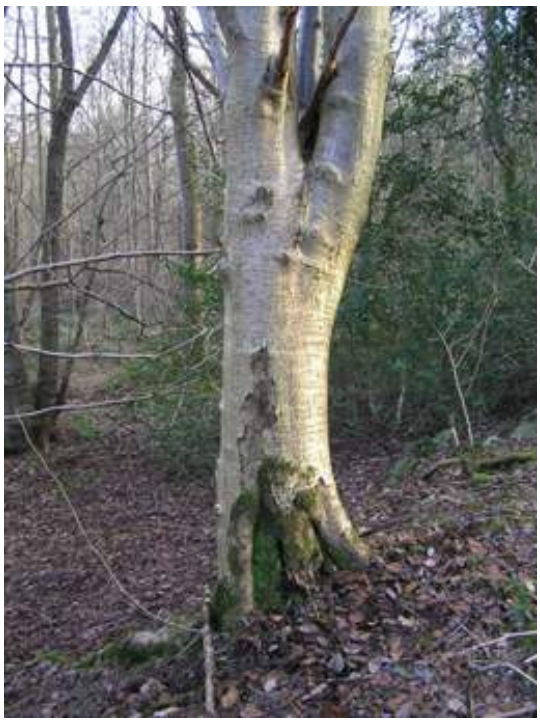


Common Whitebeam (left) is a popular small tree of local parks and urban streets. The simple leaves can be very silvery when fresh. Swedish Whitebeam (right) is also common but has deeper green leaves with distinct lobes and berries that ripen bright red.

***Sorbus aucuparia* – Rowan (Mountain Ash)**
Source: A widespread native of Britain, particularly on acid soils. Also found widely in Europe, plus Asia Minor and N Africa.
Distribution: As a wild tree tree present in many of the more acidic ancient woods of the Arden area (it avoids lime-rich soils in the wild), though rarely common. As a planted tree, very frequent on roadsides, in parks, gardens, churchyards and within formal landscaping (but beware similar-looking species such as *S. commixta*).
Further Notes: The most familiar of the various rowans found in our area, but not always easy to distinguish from others. Check the buds, which are completely obscured by grey hairs (virtually hairless and green or red in species like *S. commixta*). This tree is popular for its white spring blossom, autumn show of bright red berries and orange autumn foliage. Birds tend to devour the berries very quickly (unlike certain other rowans). The bark is usually a silvery, semi-shining grey with short horizontal ridges, which make it easy to distinguish from other native trees in woodland. An upright (fastigiate) form ‘Sheerwater’ is particularly popular in municipal planting. ‘Aspleniifolia’ (Cut-leaved Rowan) has the leaflets more deeply incised. ‘Chinese Lace’ has leaves like ‘Aspleniifolia but the leaflets are longer, much darker above (they almost look artificial) and colouring purple in autumn, and the fruit are much deeper red. There are also weeping forms (e.g. ‘Pendula’), forms with attractive pinkish-yellow bark (‘Beissneri’) and forms with yellowish berries (e.g. ‘Xanthocarpa’) that resemble *Sorbus* ‘Joseph Rock’ (which has smaller leaflets and redder fruit stalks). Rowans with white or pink berries, much smaller or much larger leaves, bare or sticky buds or purple autumn foliage will probably be different rowan species. The largest, oldest specimens tend to occur in ancient woods.

Key locations for seeing some: Woodlands: Bunsons Wood, Keresley (numerous old ones, including some pollards and various interesting growth forms); Piles Coppice, Binley Woods; Clowes Wood, near Earlswood; Hartshill Hayes (some coppiced); Tile Hill Wood (largest measured 1.52m GBH/2008) and Park Wood, Coventry; Bentley Park Wood, near Atherstone. Formal settings: Coventry: War Memorial Park (many); Warwick: Priory Park (alongside species like *S. cashmiriana* and *S. commixta*); Brueton Park, Solihull (ditto); Kenilworth: Abbey Fields (Abbey Hill end, *S. commixta* at High St end), Dalehouse Lane, (within an intriguing mixture of different rowans on the N verge); Jephson Gardens (some 'Sheerwater near main entrance facing the Sugar Maple), Leamington Spa; Warwick University (including several varieties plus other rowans in zone 2); Binswood Avenue, Leamington Spa, between the Kenilworth Road and Binswood Street (a fine one of 1.57m @ 1.20m). Aspleniifolia: Warwick Castle (near falconry enclosures); Bancroft Gardens, Stratford; Springfield Centre, Temple Balsall (in walled garden); Warwick Cemetery (in garden of house adjacent to Area B). Weeping form: Jephson Gardens, Leamington Spa (SE of fountain lake, a very rare specimen, plus several semi-weeping ones elsewhere). Beissneri: Warwick University (zone 2). Xanthocarpa: a possible one in Stratford Old Town, overhanging the small public garden at bottom of Chestnut Walk. Chinese Lace: in the small public garden at bottom of Chestnut Walk, Stratford Old Town.
Largest local specimen: Bunsons Wood, Keresley (largest solid trunked specimen found was 2.48m GBH/2010).





Common Rowan has ash-like pinnate leaves and bright red berries. The smooth silvery bark makes it easy to spot in local woods.

***Sorbus bristoliensis* – Bristol Service Tree**
Source: As a wild tree restricted to just a few sites in the Bristol area and nowhere else in the world. It is therefore an endemic to Britain - one of several endemic *Sorbus* 'microspecies' confined to the British Isles.
Distribution: Rare locally.
Further Notes: A small tree with a compact, often rounded crown. The leaves are oval and resemble small versions of *S. aria*, and it produces similar fruit.
Key locations for seeing some: The only certain specimen is at Rock Mill Arboretum, Milverton (young planting by D. Howells). Other similar specimens are thought to be *S. decipiens*.

***Sorbus cashmiriana* – Kashmir Rowan**
Source: W Himalayas. Introduced to Britain in about 1932.
Distribution: Increasingly planted within our area, though most trees are young.
Further Notes: The rather large (c15cm) white berries that often have blackish bruises are the best distinction from other rowans in late summer and autumn. It is the only rowan that produces pink flowers, and these are much larger than other rowans, almost *Crataegus*-sized. The berries of *S. glabrescens* can also be white, but are much smaller and often with a pink tone or purple marks, and the leaflets are more rounded.
Key locations for seeing some: Brueton Park, Solihull (alongside path leading from the Parkridge Centre to Malvern Park); Priory Park, Warwick (one close to some other rowans); Coughton Court (a young one E of the orchard); Halford Chuch.

Kashmir Rowan (left) has berries which are pure white and rather large. Japanese Rowan is a popular tree that resembles Common Rowan but with hairless buds, brighter berries and autumn foliage that turns crimson and purple.

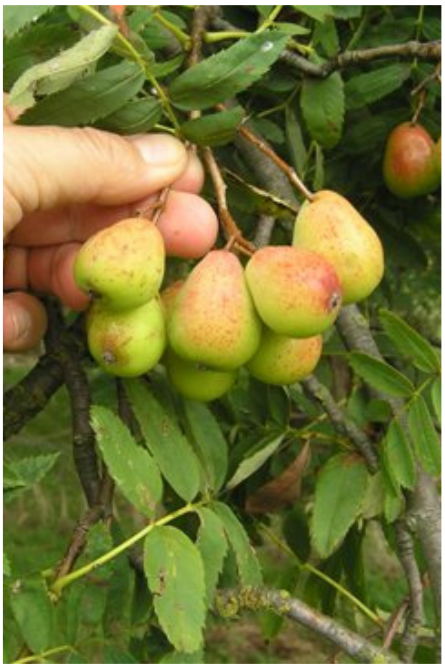
***Sorbus commixta* – Japanese Rowan (including Chinese Scarlet Rowan)**
Source: Korea, China, Japan & Sakhalin. Introduced to Britain in 1890.
Distribution: Quite frequent in parks, gardens and along roadsides, replacing Common Rowan *S. aucuparia* in many recent planting schemes.
Further Notes: Superficially very similar to *S. aucuparia*. Distinguished by its hairless green or red buds (which are often sticky), smaller, greener and glossier leaves which turn purple and crimson in autumn (as opposed to orange), also the larger heads of brighter berries. 'Embleyi' (Chinese Scarlet Rowan - often mislabelled as '*S. discolor*' by suppliers in the past) has narrower leaflets and fine scarlet autumn colour. Most local *commixta* specimens appear to be this variety.
Key locations for seeing some: Kenilworth: Abbey Fields (two on slope leading to High St), Crewe Lane Arboretum (several), Dalehouse Lane (several within an interesting collection of *Sorbus* species); Warwick: St Nicholas Park (several, the best outside the toilets) and Priory Park (one near the Coventry Road entrance beside an *S. aucuparia* and S. *cashmiriana*); Warwick University (various places, teste D. Howell, as *Sorbus discolor*); Stratford Riverside Gardens (just north of the Brass Rubbing Centre); Nether Whitacre Church (an orange-berried one with orange-red autumn foliage); Fenny Compton Church (seemingly two, rather different to one-another in various details); Rugby (a group along Church Street at main entrance to St Andrew's garden).

***Sorbus decipiens* – a service tree**
Source: Germany, where considered either as a hybrid of *S. aria* and *S. torminalis* or a more stable microspecies.
Distribution: Rare locally, though very difficult to identify.
Further Notes: A small tree with a compact, often rounded crown. The leaves are more lobed than *S. aria*, but less so than *S. intermedia* and less dark and glossy above than that the latter. It is also very similar to the British endemic *S. bristoliensis*. It produces similar fruit to *S. aria*.
Key locations for seeing some: Knowle Park, Knowle (determined by O. Johnson based on images).

***Sorbus discolor* –Snowberry Mountain Ash (see *S. commixta*)**

***Sorbus domestica* - True Service (Tree)**
Source: A very rare native of Britain (the Wyre Forest and a few coastal sites in the Bristol Channel) but widespread on the Continent. Not a native of Warwickshire.
Distribution: Only currently known from Coombe Countryside Park and a site in Leamington Spa, both formal plantings.
Further Notes: The pinnate foliage closely resembles Rowan *S. aucuparia*, but many other features differ. At any time of the year, the bark will be seen to be very rough with small, squarish plates like a pear (smooth in most rowans). The pear or apple-like mature fruit are green or greenish-brown, large (about 3cm) and in small bunches, very unlike the dense bunches of small, brightly coloured berries of most rowans. The buds are green, smooth and rounded (pointed and hairy in *S. aucuparia*) and it also grows into a much larger tree,

which suckers profusely from its base. The fruit tastes like an apple and has been used for cooking since early times, and even cider making.
Key locations for seeing some: Coombe Countryside Park (four large specimens in two small copses west of the Visitor; Binswood Avenue, Leamington Spa, beside pavement just E of Kenilworth Road junction (a fine one of 2.49m @ 80cm/2007, forking @ 1.5m).
Largest local specimen: the largest Coombe specimen of 3.46m GBH/2006 is the national champion. The other Coombe trees are 3.06m, 2.63m and 2.59m – all nationally significant specimens and all of these trees are said to have been planted in 1765 (TROBI database), though this predates the activities of Capability Brown at the site and will need to be verified.

The national champion True Service Tree grows at Coombe Countryside Park. The foliage is rowan-like but the berries resemble small pears and the bark is very dark and rough.

***Sorbus folgneri* – Folgner's Whitebeam**
Source: Central & W China. Introduced to Britain in 1901
Distribution: Rare locally.
Further Notes: A graceful small tree with very narrow (for a *Sorbus*), simple leaves, which are deep green above and felted white below. These give a good show of autumn oranges and crimsons. The berries are orange in the wild form, but yellow in the form 'Lemon Drop'.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting of 'Lemon Drop' by D. Howells); Keresley House, Coventry (on owner's 2007 plant list, but not seen by the author).

***Sorbus* 'Ghose' – Ghose's Rowan**
Source: Probably a hybrid of an unknown Himalayan rowan with our native *S. aucuparia*. It is recorded in Britain by 1960.
Distribution: Rare locally.

Further Notes: An upright leafy rowan with large leaves that approach the size of *S. sargentiana*, but are very white beneath. The berries are pinkish-cerise or rose-red and persist late into winter.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells).

***Sorbus glabriuscula (the S. hupehensis* of some literature) – Hubei Rowan**
Source: SW China and possibly Burma, though the true *S. hupehensis* is apparently different and very rare in Britain. Introduced to Britain in 1910.
Distribution: Occasional in local parks, gardens, along roadsides and in boundary plantings.
Further Notes: Part of a confusing complex of Asian rowans which also includes *S. hupehensis* and *S. oligodonta.* The latter species is said to be almost as frequent as *glabrensis* and may account for some local trees (it has finer shoots and greyer leaves). The leaflets of Hubei Rowan tend to be shorter, rounder and smoother-edged than most other locally planted rowans (rather like a *Robinia*), and have a greyish-green, matt appearance. Flowering is usually a couple of weeks after *S. aucuparia*. The berries turn various shades of pink (deep pink in 'November Pink', but often whitish in other forms) and are much smaller than the white berries of *S. cashmiriana*, with any staining pink or purple rather than blackish. They can persist in large clumps throughout the winter, resembling winter blossom from a distance. Vilmorin's Rowan *S. vilmorinii*, which has pink or purple berries, has smaller, narrower, darker leaflets with more pronounced teeth.
Key locations for seeing some: Castle Lane, Warwick (growing in the Castle car park south of Pageant Garden); Leamington Cemetery (near chapel); Ashorne Manor (a 'November Pink'); Ragley Hall Gardens (near pond, 0.96m GBH/2007); Clifford Chambers Church; Kenilworth (Rouncil Lane at entrance to lane leading to Fernhill Farm); Stoneleigh (spinney edge beside B4113 near the confluence of the rivers Sowe and Avon.
Largest local specimen: Shuckburgh Park 'Wild Garden' area (a very fine one of 1.57m @ 1.20m/2007, one of the largest in Britain).

***Sorbus* x *hostii* – a hybrid whitebeam**
Source: A hybrid between the *S. chamaemespilus* and *S. mougeotii* that grows with its parents in the mountains of Central and Southern Europe. Cultivated since 1820.
Distribution: Rare locally.
Further Notes: A small tree or large shrub with pale pink flowers followed by bright red fruits and leaves of the whitebeam type.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells).

***S. hupehensis* (see *S. glabrensis*)**

***Sorbus intermedia* - Swedish Whitebeam**
Source: Baltic region. Introduced to Britain by 1789.
Distribution: Frequent in local parks, property screens, along roadsides and occasionally in gardens.

Further Notes: Typically a neat and healthy-looking medium-sized tree with dense, dark foliage. It is considered by some to be one of the various hybrids between Common Whitebeam *S. aria* and Common Rowan *S. aucuparia*, and it rather resembles *S. aria* but the leaves are more shining on the uppersides and have distinct, rounded lobes on the leaf margin. The berries turn a bright red by September. A number of similar *Sorbus* species can be found locally e.g. *S.* x *latifolia* but these tend to have the leaf lobes more pointed or irregular.
Key locations for seeing some: Priory Park, Warwick (a couple on slope facing the Punchbowl Pub); Jephson Gardens, Leamington Spa (2.03m GBH/2007 beside path E of the Aviary the café); Stratford: a row beside Bridgefoot, just west of Clopton Bridge; also one in Holy Trinity Churchyard; Leamington Cemetery; Coombe Abbey Arboretum (facing the lake).
Largest local specimen: Coombe Abbey Arboretum (2.74m GBH/2008).

Hubei Rowan (left) has bunches of pale pink berries and dull-green Robinia-like foliage. Sorbus 'Joseph Rock by contrast (right) has yellow berries on red stalks.

Sorbus 'Joseph Rock' – Joseph Rock's Rowan

Source: Origins unclear, possibly a form of *S. rehderiana* from China. Introduced to Britain in 1932.
Distribution: Not infrequent in local parks, gardens, cemeteries and roadsides. Easily overlooked except in autumn when the berries are ripe.
Further Notes: An attractive rowan with pale yellow berries on reddish stalks and rather small, narrow leaflets. Yellow-berried forms of *S. aucuparia* have much larger leaflets and seem to lack the reddish fruit stalks. The fruit can persist throughout the winter.

Key locations for seeing some: Canley Crematorium, Coventry (including an avenue of them along 'Sorbus Drive'); Leamington Spa: Jephson Gardens; Beverley Rd; Coughton Court (a young one E of the orchard); Brueton Park, Solihull; Dalehouse Lane, Kenilworth (within an intriguing mixture of different rowans on the north verge); Warwick: The Paddocks (a fine specimen close to the shops at the south end of Coventry Rd); St Nicholas Park (near the big Sitka Spruce).

***Sorbus koehneana* – Ghose's Rowan**
Source: Central China. Introduced to Britain in 1910.
Distribution: Rare locally.
Further Notes: A rare medium-sized shrub or small tree, which produces a heavy crop of white berries in drooping clusters (the berries are much smaller than the white ones of *S. cashmiriana*). The leaves have lots of narrow leaflets like *S. vilmorinii* (which has pink berries) but much narrower than *S. glabriuscula*.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells).

***Sorbus* x *latifolia* – Service Tree of Fontainbleau (requires confirmation)**
Source: One of a number hybrids between Whitebeam *S. aria* and Wild Service Tree *S. torminalis*. This one comes from the Fontainbleau area of France, though it is unknown if it is a natural hybrid or a deliberately created one.
Distribution: Rare locally.
Further Notes: The leaf margins have neat triangular lobes that are not rounded like *S. intermedia*, and much more shallow than *S. torminalis*. Confusion is perhaps most likely with some of the large leafed *Crataegus* thorns such as *C. pedicillata* but these have bright red, smooth-skinned berries in contrast to the greenish-brown, white-spotted berries of *S.* x *latifolia*. Some of the Brueton Park specimens cited below are grafted onto *S. intermedia*, and have the foliage of the graft sprouting from the base and contrasting markedly with the upper foliage.
Key locations for seeing some: Brueton Park, Solihull (several specimens, including a largish one on footpath between Parkridge Centre and Malvern Park); Sherbourne Fishing Pool, near Barford (foliage seems to be identical to the Brueton Park specimens).

***Sorbus sargentiana* – Sargent's Rowan**
Source: Sichuan, China. Introduced to Britain in 1910.
Distribution: Occasional in local parks, gardens, cemeteries and roadsides, but seemingly becoming more popular.
Further Notes: A particularly large-leaved rowan with individual leaflets up to 13cm long, with pointed tips and particularly broad bases (like a Caucasian Wing-nut). The buds are big, red and very sticky. The large masses of white flowers in early June (which peak 2-3 weeks after Common Rowan *S. aucuparia*) give rise to massive clumps of small red berries (200-500 per bunch). The berries, together with the fiery red 'fall' foliage make for an impressive autumn display.

Key locations for seeing some: Kenilworth: Dalehouse Lane, (several specimens within an interesting mixture of different *Sorbus* species on the north verge) and Crewe Lane Arboretum; Stratford Riverside Park (near the public toilets); Canley Crematorium, Coventry (several); Cloister Way, Leamington Spa (in several front gardens); Moreton Hall, Moreton Morrell (a young one in front of Hall); Rock Mill Arboretum, Milverton (young planting by D. Howells). Kenilworth; St Nicholas Park, Warwick, one near the Emscote Road entrance.


Sargent's Rowan (left) has the biggest berry-bunches of any local Sorbus and the buds are large and very sticky. The Bastard Servive (right) is a popular hybrid that betrays its parentage in its strange leaf shape which resembles rowans at the base and whitebeams at the tip.

***Sorbus scalaris* – Ladder-leaf Rowan**
Source: Sichuan, China. Introduced to Britain in 1904.
Distribution: Rare locally.
Further Notes: A wide-spreading, umbrella-shaped tree with each leaf characteristically comprised of many (up to 33), particularly narrow leaflets that are green and leathery above but downy-grey below. The fruit are bright red in autumn and in clumps of up to 200.
Key locations for seeing some: Coughton Court (young one near orchard); Rock Mill Arboretum, Milverton (young planting by D. Howells).

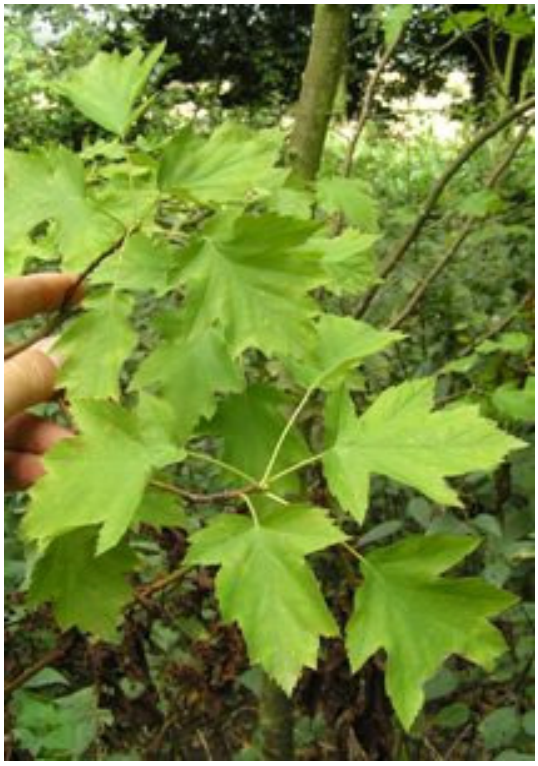
***Sorbus thibetica* – Mitchell's Whitebeam**
Source: The Himalayas & W China. Introduced to Britain in 1938.
Distribution: Rare locally.
Further Notes: A medium-sized to large whitebeam eventually developing a broad, rounded head. The mature leaves are larger and more rounded than *S. aria* (up to 20 x 17cm), green above but brilliantly grey below. They form a striking leaf litter beneath a tree after they fall. The fruits mature reddish and

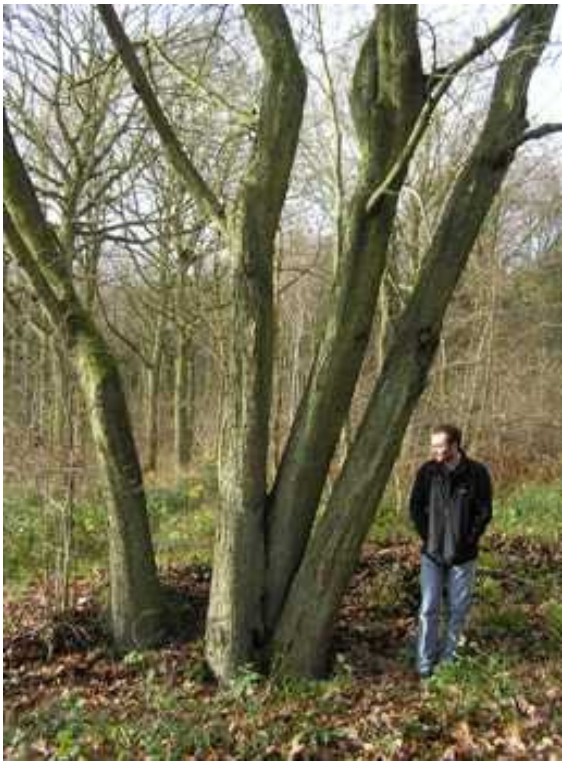
have small, white speckles (lenticels). Himalayan Whitebeam *S. vestita* is very similar but has narrower leaves and fruit containing 4-5 as (opposed to 2-3) seeds.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells); Warwick University (zone 2, teste D. Howell); Barton House, Barton on the Heath (a young one).

***Sorbus* x *thuringiaca* - Bastard Service (Tree)**
Source: A hybrid between Common Whitebeam *S. aria* and Common Rowan *S. aucuparia* from Europe. Grown in Britain since the late 18th century.
Distribution: Occasional in local parks and streets. Increasingly popular within municipal planting schemes due to its neat upright form and bright orange autumn colour.
Further Notes: Its hybrid origin has led to one of the most interesting leaf shapes. The apical half of the leaf resembles Swedish Whitebeam *S. intermedia*, with shallow, rounded lobes on the margins. But this gradually transforms into a pinnate arrangement like *S. aucuparia* at the leaf base. All Warwickshire specimens appear to be the narrow, columnar form 'Fastigiata'.
Key locations for seeing some: Warwick University (many, especially in the central campus area); Castle Lane, Warwick (several young ones); Stratford: Riverside Park (near the toilets) and The Rec (several in children's playground); Leamington Spa: Jephson Gardens, (a fine one of 1.47m @ 1.3m/2007 overhanging the underpass near the Dormer Place entrance); Greenwood Court, off Upper Holly Walk (two very fine specimens).
Largest local specimen: the largest Greenwood Court specimen (1.63m @ 1.50m/2009).

***Sorbus torminalis* - Wild Service (Tree)**
Source: A native of our ancient woods. Also found in Europe, N Africa and SW Asia.
Distribution: Scattered locations within the ancient woods and old hedgerows of our area, though fairly rare as a wild tree. Sigificant concentrations exist in the Wawensmoor-Oldberrow-Ullenhall area west of Henley in Arden, the Hockley Heath-Dorridge-Monkspath area, and the Hartshill Hayes-Oldbury area. Increasingly planted in local parks and gardens. The Warwickshire Arden is regarded as one of its national strongholds (Roper, 1993).
Further Notes: The rather deeply incised triangular lobes of the leaves (especially the sideways-pointing basal ones) make for an easily recognised leaf and it more likely to be confused with certain maples or thorns rather than other *Sorbus*. The berries are less numerous than rowans, turn brown and have tiny warts on their surface. They used to be made into a drink called 'chéckers' and a few can persist in winter. It typically occurs in ones and twos within a wood, often at or near the woodland edge or on a woodbank, suggesting it might have been subject of deliberate planting in the past. Many of our trees are multistemmed, suggesting past coppicing, and it can also sucker to form loose thickets. The fruit is said to require a considerable period of freezing before it will germinate. Wild Service sometimes occurs alongside the related Rowan *S. aucuparia* (another ancient woodland indicator) but it avoids the more acidic woodland conditions preferred by that species.

Key locations for seeing some: Woodlands: Brandon Wood (along north edge near Piles Coppice); Bubbenhall Wood (a couple at SE corner) Bush Wood, near Lowsonford (a couple beside footpath along its west edge near a stile); Hanging Wood, Claverdon (1.41m GBH/2007, viewable by permission only); Poole Wood/The Ling near Morton Spirt (a multi-stemmed tree on county boundary woodbank); South Cubbington Wood (about six coppiced specimens with suckers in the SE corner of the wood); Oversley Wood, near Alcester (a multi-stemmed one in the centre of the wood); Bannams Wood, Moreton Bagot (about a dozen closely approximated trees along east edge). Formal settings: Stoneleigh Abbey (several in the riverside areas near the Abbey gardens); Ann Hathaway's Cottage, Shottery; Crewe Lane Arboretum, Kenilworth; Packington Park; Northumberland Road, Leamington Spa (one in a front garden).
Largest local specimen: Single-trunked: Bush Wood (the larger of the two specimens is 1.75m GBH/2007). Multi-stemmed: The Poole Wood tree (2.64m @ 90cm/2007, but a twin trunk fused at base, and probably once coppiced). A specimen of 2.73m/1993, Tanworth in Arden is listed in the Tree Register's dataset but has not been located by the author.





Wild Service has rather maple-like leaves unlike any other Sorbus. As a wild tree it is a rarity of ancient woods and ancient hedges and is often multi-stemmed like this fine specimen at Oversley Wood.

Sorbus vestita – Himalayan Whitebeam

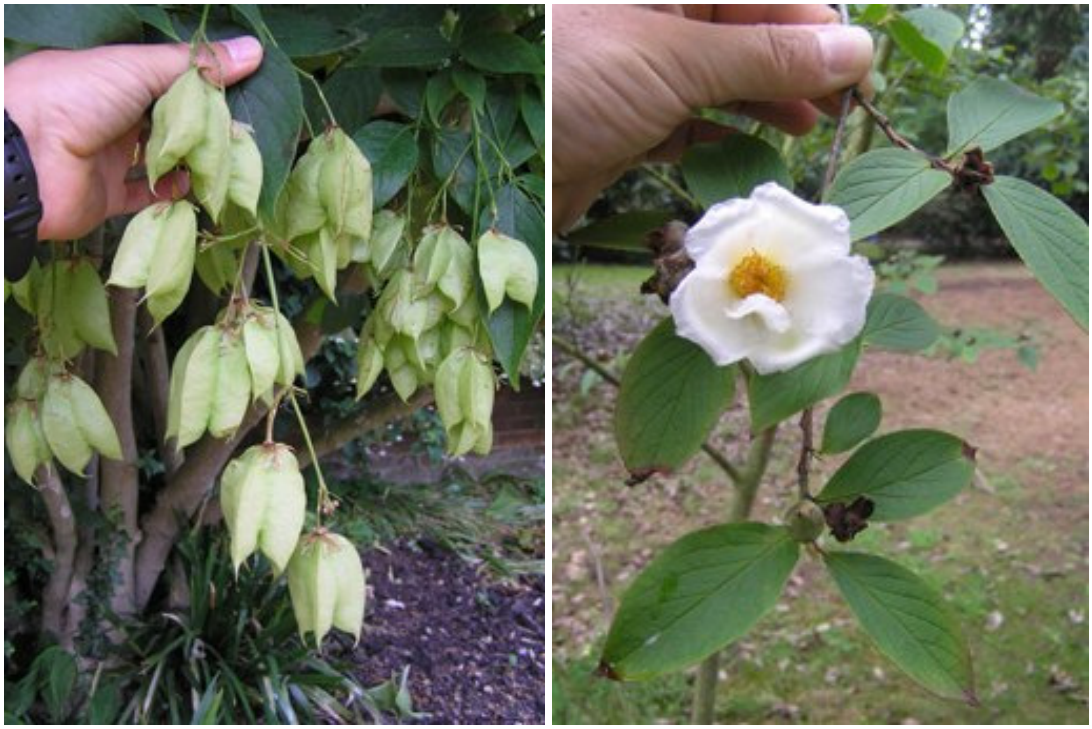
Source: The Himalayas. Introduced to Britain in 1820.
Distribution: Rare locally.
Further Notes: Very large, leathery leaves with particularly thick leaf stalks and intensely white leaf undersides distinguish this species from Common

Whitebeam *S. aria*. Mitchell's Whitebeam *S. thibetica* is similar but has rounder leaves and only 2-3 seeds in its berries as opposed to 4-5.
Key locations for seeing some: Crewe Lane Arboretum, Kenilworth (a young one).

***Sorbus vilmorinii* - Vilmorin's Rowan**
Source: Yunnan, China. Introduced to Britain in 1889.
Distribution: Occasional in local parks and gardens, but increasingly available commercially.
Further Notes: A very elegant rowan that can form a small tree. The pinnate leaves have particularly small, narrow leaflets (producing an appearance rather like a Honey Locust *Gleditsia*). These become dark green by summer and usually turn deep red or purple in autumn. The rather small berries start off dark red but become pale pink (often with reddish stains) as they mature, though the birds tend to pick them off very quickly. Hubei Rowan *S. glabrescens* also has pink berries but these are larger and the leaf has larger, rounder and paler leaflets. There is some variation in the foliage details and fruit size of local trees, raising the possibility that the records below encompass further *Sorbus* species.
Key locations for seeing some: Castle Pub, Edge Hill (front garden in mid 1990s); Dalehouse Lane, Kenilworth (within an intriguing mixture of different rowans on the N verge); Ragley Hall Gardens; London Road Cemetery, Coventry (several by main entrance); Ashorne Manor (a couple, rather different foliage between them); possibly Lillington Close, Leamington (BRC files, still there?).

***Staphylea colchica* – Colchis Bladdernut and related species**
Source: *S. colchica* comes from SW Asia.
Distribution: Rare locally.
Further Notes: *Staphylea* species develop into large shrubs or small suckering trees with very distinctive, inflated bladder-like fruit and pinnate leaves. The rather tubular pendulous white or cream flowers give a fine show in late spring. There is some variation in the local specimens seen, so they may prove to represent more than just *S. colchica* (several *Staphylea* species are cultivated).
Key locations for seeing some: Warwick Castle (just inside garden beside toll house; Farnborough Hall (beside Hall, may be a different *Staphylea* species, as their fruits look rather different to the Warwick Castle specimen and they have pure white flowers); Jephson Gardens, Leamington Spa (several young ones near the Weeping Beech with creamy flowers); 'The Yews' Moreton Paddox (a young one); Arbury Hall (one between the Hall and the big Swamp Cypress).

***Stewartia ovata* – Mountain Stuartia**
Source: N. America (the Appalachian Mountains and Piedmont from Virginia to Alabama).
Distribution: Rare locally.
Further Notes: A small tree or large shrub resembling other stuartias.
Key locations for seeing some: Warwick Castle (labelled).



The distinctive bladdered fruit of a Bladdernut at Farnborough Hall (left). Mountain Stuartia at Warwick Castle (right).

***Stewartia pseudocamellia* – Deciduous Camellia (Japanese Stuartia)**
Source: Japan & Korea. Introduced to Britain in 1874.
Distribution: Rare locally.
Further Notes: A slow-growing, deciduous upright tree with splendid oval and pointed leaves, which colour red in autumn. The striking bark peels off ochre-orange to reveal patches of pistachio-grey. The white flowers resemble those of other camellias and certain roses.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells); Keresley House, Coventry (a young one); Barton House, Barton on the Heath (plus several further *Stewartia* species); Stoneleigh Abbey (a young one).

***Styrax japonicus* – Snowbell Tree**
Source: Japan, Korea & central China. Introduced to Britain in 1862.
Distribution: Rare locally.
Further Notes: A small but distinguished tree of graceful, slightly drooping habit. The leaves, lime-green at first, are slender and have a tendency to grow upwards from the branch. The white bell-like flowers appear in June and hang in small, loose clusters from the branches. In autumn the foliage gives an attractive show of yellow.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells).

***Tamarix gallica* – Tamarisk**
Source: Europe and N. Africa. Long naturalised in the UK, especially in coastal areas.
Distribution: Fairly frequent in local gardens.

Further notes: A rather untidy shrub with cypress-like foliage (though it is not a conifer) and with bright pink sprays of tiny flowers in spring and summer. This is the most frequent of a number of very similar tamarisk species that can be found in Britain, though identification is difficult, so identication of those listed below as *T. gallica* is provisional. There seems to be marked variation in the flowering peak of local specimens, with some peaking in early summer and others up to two months later.
Key locations for seeing some: Ragley Hall Gardens; Whichford (opposite entrance to the church); Alcester (St Nicholas) Church; check suburban gardens during the flowering period.

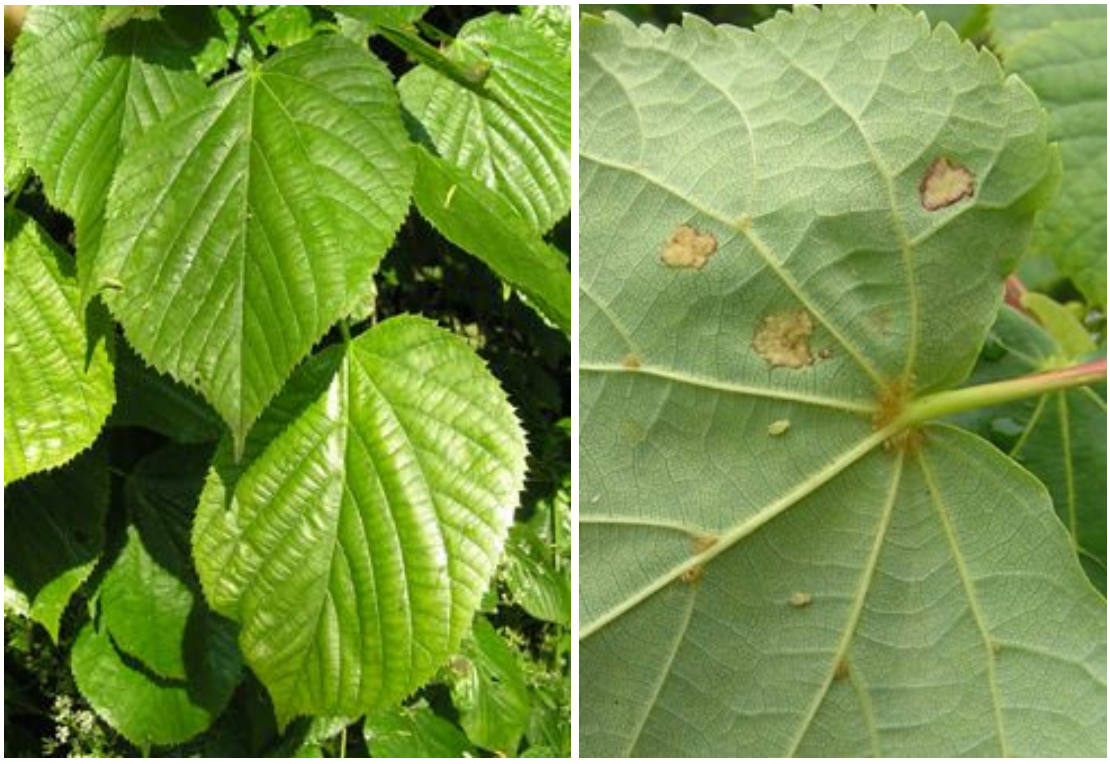
***Tamarix parviflora* - a tamarisk**
Keresley House, Coventry (on owner's 2007 plant list, but not seen by the author).

***Tetradium daniellii* - Euodia**
Source: China & Korea. Introduced to Britain in 1907.
Distribution: Rare locally.
Further Notes: An attractive, medium-sized tree distantly related to citrus fruits with opposite-arranged pinnate leaves bearing dark, glossy leaflets that have curved, pointed tips. It is most conspicuous in August when large sprays of small white, lemon-scented flowers are produced. These can attract huge numbers of honeybees and hoverflies and give rise to clusters of small purplish berries.
Key locations for seeing some: Brueton Park. Solihull (a fine one within tree belt along N edge, N of Parkridge Centre, 1.19m GBH/2006); Newbold Revel (a young one in the car park zone). One is also reported from Barton House, Barton on the Heath, but looks more liked Amur Cork Tree *Phellodendron amurense*.

***Tilia* – Limes**
Mostly large, always deciduous trees, typically with heart-shaped ('cordate') leaves and characteristic fruit comprised of several stalked, roundish fruit attached to a single green 'wing'. About thirty species occur in temperate parts of the northern hemisphere, two of which (*T. cordata* and *T. platyphyllos*) are native to Britain. The various species and forms can be distinguished by the shape, colour and other details of their leaves (including whether tufts of hairs are present beneath), details of the fruit, shoots and bark, the overall shape of the tree, and even the extent of aphid activity on the foliage. But take care with young sucker growth and pollards, as the foliage on these can look very different to normal foliage.

***Tilia americana* - American Lime**
Source: USA from New Brunswick to Kentucky. Introduced to Britain in 1752.
Distribution: Seemingly scarce locally but easily overlooked. Most frequent in parks and roadsides in Warwick District due to late 20th Century municipal planting.
Further Notes: The leaves of this lime most resembles Common Lime *T.* x *europaea* in having small tufts of whitish-buff hairs under the vein axils and a mid-green underside to the leaf. But in most local specimens, the leaf tends to

be much larger and consistently very asymmetric with its base obliquely set against the leaf stalk, rather than 'cordate' (heart-shaped). The leaves also have larger, paler teeth on their margins and the fruit are small and hairless (downy in Common Lime). The tree often aquires a triangular shape with rather strongly weeping foliage that can extend to ground level in some specimens. The lower trunk tends to be smooth-barked, cylindrical and free of sprouts or basal suckers. Some clones have smaller, less distinct leaves and it is possible that some trees in Leamington (e.g. Arlington Ave) may be of this form.
Key locations for seeing some: Warwick: Priory Park (two medium-sized specimens behind the Police Station) and a younger one in the Sainsbury car park close to Commainge Close; Leamington Spa: Beverley Road (two within amongst the rows of Common Limes, close to house #35), Warwick New Road (several roadside trees close to Warwickshire College, largest 1.51m GBH/2006) and Arlington Rd (a couple of rather small-leaved specimens amongst the many *T.* x *europaea*); Abbey Fields, Kenilworth (several); Ettington Park (many on north side of entrance drive); Alcester (three on the green beside Gas House Lane); Wroxall Abbey (several young ones along entrance drive); Weston under Wetherley Church (a coppiced one).
Largest local specimen: the largest Beverley Road specimen and the largest Alcester specimen (both 1.53m GBH/2006).



American Lime (left) has large shiny leaves with the leaf blades angled diagonally at their base. Small-leaved Lime (right) has smaller duller, heart-shaped leaves with distinct tufts of orange hairs in the underside vein-axils.

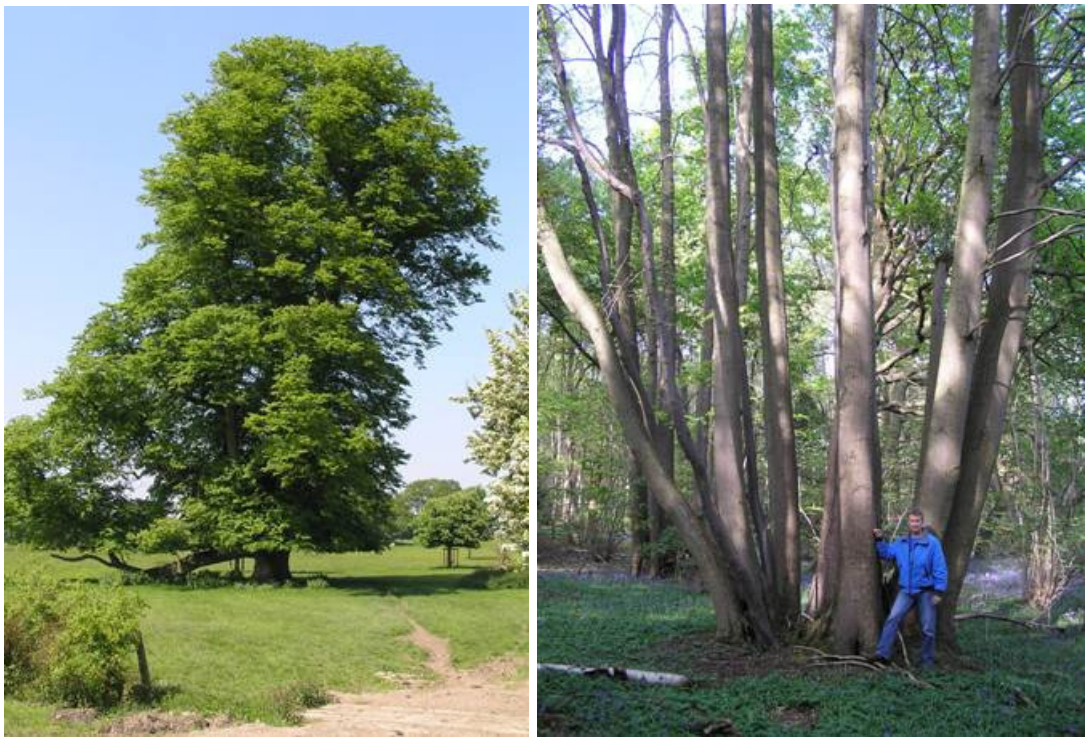
Tilia chenmouii – a lime
Source: China. Recently introduced to Britain.
Distribution: Rare locally.

Further Notes: This unusual, fast-growing and hardy lime has narrower leaves than any other lime species and peeling bark.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells).

***Tilia chingiana* – a lime**
Source: China.
Distribution: Only a single site known locally.
Further Notes: A rare lime with leaves rather triangular in shape like *T. cordata* but larger and with paler undersides.
Key locations for seeing some: Keresley House, Coventry (a young one).

***Tilia cordata* - Small-leaved Lime**
Source: A native species that grew abundantly in the 'wildwood' that covered Warwickshire following the last Ice Age before forest clearance by Neolithic people. Also found in Europe east to the Caucasus.
Distribution: Present in many local ancient woods at varying levels of abundance and in some old hedgerows and historic parklands. More recently planted in parks, gardens, cemeteries, churchyards and alongside some roads, though scarcer in these types of locations than Common Lime *T.* x *europaea* (a hybrid between *T. cordata* and Broad-leaved Lime *T. platyphyllos*).
Further Notes: The rather small, pointed, matt leaves have conspicuous tufts of hairs on the vein axils beneath which mature to bright buff (as opposed to whitish or yellowish). But the foliage of both this species and *T.* x *europaea* can vary somewhat, making separation of some trees very difficult. Mature trees can be much broader than *T.* x *europaea*, and often quite assymetrical and irregular in shape, the trunks with more deeply ridged bark and with little inclination to produce the deep fluting of most old *T.* x *europaea* trunks. They are also less inclined to sprout shoots from the trunk or base, though some local ones do, and some have canopies as tall and narrow as typical *T. europaea* (e.g. trees at Baddesley Clinton, Eathorpe and Ragley Park). The flower/seed bunches typically spread in all directions and are never all drooping like *T.* x *europaea* or *T. platyphyllos*. They can be produced very profusely by some trees, giving the trees a brownish coloration by late summer in contrast to other limes. Nearly all the natural reproduction of this tree is now vegetative (e.g. suckering or layering) and it struggles to produce viable seed locally. Var 'Winter Orange' has golden-orange young stems. 'Greenspire' is a neat, narrowly spired form that is quite popular in recent municipal plantings. This tree was widely coppiced in local woods in the past, and a few woods still support massive coppice stools many centuries old, notably Piles Coppice, Hartshill Hayes, Ryton Wood and Oversley Wood. Such stools tend to produce stems with relatively smooth greyish bark.
Key locations for seeing some: Ancient woods: Piles Coppice, near Binley Woods (dominated by dozens of old coppice stools, the largest measured was 9.10m/2007 around base, plus various examples of natural regrowth such as layering); Hartshill Hayes (numerous coppice stools with some coppiced *T. platyphyllos* too); Oversley Wood (old coppice stools and some standards, some stools exceptionally large, see below); Ryton Wood (old coppice stools plus some tall standards); Rough Hill Wood, near Redditch (old coppice stools

and some standards); Claverdon's Hanging Wood (a fine coppice stool , viewable by permission only); Rough Close Wood, near Tile Hill (old coppice stools); Clowes Wood, near Earlswood (a few). Historic Parks: Baddesley Clinton (a massive and extremely tall tree in field west of entrance drive, see below, and another of 4.10m/2006 NW of the moated house, both somewhat atypical in leaf shape); Ragley Park (a tall specimen of 5.13m GBH/2007 about 0.5km due east of the Hall, alongside two other large limes); Umberslade Park (a couple in pasture at north edge of Park, largest 4.40m GBH/2007); Studley Castle (one beside entrance drive, 4.35m GBH/2007); Farnborough Park (a tall one near obelisk, 3.60m GBH/2006); Coton House near Rugby (two mature ones in field north of entrance drive); Newbold Pacey Park (a fine tall one of 3.44m @ 1.8m at woodland edge at north end of park. Public parks, cemeteries, churchyards etc: Leamington Spa: Jephson Gardens, (a couple of young ones) and St John's Bapstist Church (several pollards beside Hitchman Road); Priory Park, Warwick (a young one); Attleborough Cemetery, Nuneaton (2.15m GBH/2006); Coventry: Allesley Park, (a fine one at NE corner of park and possibly others), Canley Crematorium (several); Atherstone Cemetery (several medium-sized ones); Warwick University (young ones in various places, including 'Greenspire'); Rock Mill Arboretum, Milverton (young planting of 'Winter Orange'); other churches at Stretton On Dunsmore, Long Lawford, Tanworth in Arden, Rowington, Wolvey, and Priors Hardwick church (a fine one 2.89m GBH/2006).



A superb maiden Small-leaved Lime at Baddesley Clinton (left). Large maidens of this species are rare in Warwickshire. Old coppice stools can be found in some local ancient woods, notably Piles Coppice near Binley Woods (right).

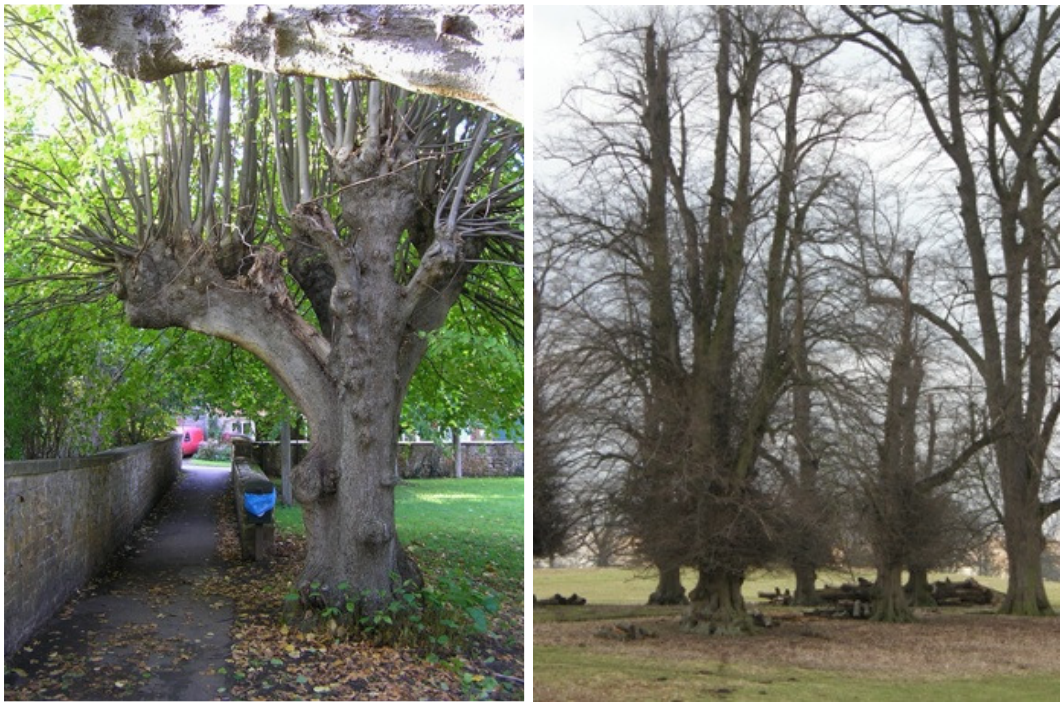
Largest local specimen: Standards: two trees can make this claim. The Baddesley Clinton specimen has a girth of 5.72m @ 1.30cm/2006 around a

natural waist just below a low side branch). In a spinney, just north of Wolston Grange, another huge specimen of 5.75m GBH/2008 can be found, though this girth is affected by by bosses. Coppice Stools: a massive coppice stool (now a large ring of trunks) at Oversley Wood, close to the footpath running along the top ridge of the wood, is about 15 meters around base/2007, but there is a further possible coppice ring (now much fragmented) of about 22 meters around its base nearby. Such trees could be several thousand years old!

***Tilia* x *euchlora* – Crimean (Caucasian) Lime**
Source: Generally considered to be a hybrid between the Small-leaved Lime *T. cordata* and a Caucasus lime *T. dasystyla*. Introduced to Britain by 1860.
Distribution: Occasional in local parks, larger gardens, urban streets, churchyards and golf courses, but easily overlooked from a distance.
Further Notes: The first thing you notice about this lime in summer is the particularly dark, shiny and smooth upper leaf surface and the almost complete lack of aphid activity. The resistance to aphid attack has led to it being planted in preference to *T.* x *europaea* in some places, though it does not usually mature into a particularly neat-looking tree and the foliage often reaches the ground to create a large leafy 'blob' of a tree or just a very large shrub. Having said this, some of the Leamington Spa street trees stand out by being quite tall and narrow. The leaves have the same orange tufts of hairs on the underside as *T. cordata*, and are often a similar size, but the fruit is downy (hairless in *T. cordata*). In autumn, the leaves turn bright yellow, often a few at a time, giving a rather different display to the duller colours of *T.* x *europaea*.
Key locations for seeing some: Coughton Court (several medium-sized ones near to the A435); Binswood Avenue, Leamington Spa (several roadside trees west of the Kenilworth Road (largest 1.65m GBH/2007); Warwick Castle (a fine one near the peacock garden); Stratford Golf Course (several medium-sized ones); Brueton Park, Solihull (several near the pinetum); Abbey Fields (a trunked one at far end of the Common Lime leading from the car park entrance to the church); Coventry: London Road Cemetery, War Memorial Park and Caludon Church; Bagington play area (beside baby swings); Riversley Park, Nuneaton (along track leading to Attleborough Rd); Leamington Spa: Warwickshire College (several fine ones, largest 1.45m GBH/2006); Charlecote Park (a couple including one in public car park); Alcester (St Nicholas) Church (several around edge of churchyard).
Largest local specimen: Binswood Avenue, Leamington Spa (largest tree W of the Kenilworth Road 1.65m GBH/2007). A tree of 1.76m GBH/2006 at Abbey Fields was lost in 2008.

***Tilia* x *europaea* - Common Lime**
Source: A hybrid between NW Europe's two native limes, Small-leaved Lime *T. cordata* and Broad-leaved Lime *T. platyphyllos.* It has occasionally arisen naturally in Britain where both parents occur together, though the cultivated form probably has a European origin. Planted in Britain since the early 17th century.
Distribution: One of our most abundant and familiar trees, widely planted locally on roadsides and in parks, larger gardens, churchyards and cemeteries.

Further Notes: This is the main lime that covers your car with sticky honeydew in summer (sugary droppings from the aphids that live on the foliage) and the foliage is often covered by ugly black soot mould by late summer. The trunk typically develops a mass of 'epicornic' twigs around its base and lower trunk and can become strongly buttressed and fluted in older specimens. That aside, the Common Lime displays a degree of hybrid vigour in that it can grow into a considerably taller tree than either of its parents (some local ones may have attained 40 metres), which can add greatly to the appearance of historic parkland or stately homes. Many urban specimens are pollarded to keep their canopies and roots from getting too big, but pollarding them has been an even older tradition in certain local churchyards (e.g. Ilmington Church and St, Mary's, Warwick) and such trees are often much older than their relatively small trunk dimensions would suggest – stunted by regular cutting. The tall shape, rather untidy canopy (especially in winter), sprouty and heavily buttressed trunk, and poor seed production helps to identify many Common Limes, though it is possible to find some trees that are difficult to separate from the parents, particularly *T. cordata*. Some of our oldest specimens seem to be of unusual clones that differ from typical trees in overall shape, bark texture and details of the leaf e.g. some of the specimens in Ragley Park. Common Lime is one of the first trees to lose its foliage in autumn and the unimpressive autumn colour can help to distinguish it from species like the *T.* x *euchlora* and *T. tomentosa*, which are sometimes planted in similar places and give brighter autumn yellows. It is also an important host for Mistletoe locally. The oldest Warwickshire specimens (those with trunk girths of 4-6 metres) date from the early eighteenth century.



Some superb Common Limes pollards can be found in local churchyards e.g. Ilmington (left). Early eighteenth century Common Limes occur in a number of historic parks including Charlecote (right), and have a distinct appearance with deeply fluted trunks and a mass of 'epicornic' twigs above the browse line.

Key locations for seeing some: 18th century specimens: Edge Hill escarpment between the Edge Hill Obelisk and Radway Grange (some very old ones probably dating from Sanderson Miller's landscaping of the 1740s, the largest measured was 6.02m GBH/2007); Charlecote Park (a long avenue of mixed ages in the West Park, largest was 5.15m GBH/2006 and probably dates from the 1740s); Coombe Abbey (old ones near the Visitor Centre, largest measured was 4.70m GBH/2006); Walton Hall (many old ones along back lane leading to B4086); Shuckburgh Park (some fine ones, largest was 5.22m @ 1.20m/2007); Ragley Park (many 5m ones, largest measured was 5.67m GBH/2007 and probably dates from the 1750s); Honington Hall (a row beside church may date from the 1730s, largest was 5.58m GBH/2006); Ettington Park (many fine ones, largest measured beside church, was 4.18m GBH/2006 and very tall); Compton Verney (includes specimens apparently planted in the 1740s, largest 4.06m GBH/2006); Coughton Court (various ages but including a couple of old 4m trees in parkland between main buildings and A435). Others: Leamington Spa: very common along many of the towns streets, most notably the long row at Beverley Road (which also includes some *T. americana* and *T. platyphyllos* to compare against); Coventry: Warwick Road and Spencer Road (many specimens with mistletoe); Abbey Fields, Kenilworth (many fine Victorian ones with *T. platyphyllos* and *T. americana* to compare against); Warwick: Priory Park, (some very tall ones, with some *T. americana* and *T. cordata* to compare against), St Nicholas Park and Coventry Road near Warwick Station; Stoneleigh Abbey (a superb avenue of presumed 19th century trees along the entrance drive with some *T. platypyhllos* in car park to compare against). Old churchyard pollards: Ilmington Church; St Mary's Church, Warwick. A fine avenue of old pollards at Holy Trinity Church, Stratford was removed in 2008.
Oldest local specimens: Stoneleigh Deer Park Golf Course, just W of track leading to Deer Keeper's Lodge (6.72m GBH/2007, crown lost but lower tree still much alive).

***Tilia henryana* – a lime**
Source: Central China. Introduced to Britain in 1901.
Distribution: Rare locally.
Further Notes: A very rare, slow-growing lime with large leaves that are characteristically edged with bristle-like teeth and unfold silvery in spring. The creamy white flowers are borne in late summer, later than most other limes.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells).

***Tilia insularis* – a lime**
Source: Cheiju Do, an island 50 miles off the S end of Korea. Introduced to Britain in 1919.
Distribution: Rare locally.
Further Notes: A small to medium-sized tree not easily distinguished from other limes, with heart-shaped leaves bearing tufts of hairs in the vein axils beneath like *T. cordata* and *T.* x *euchlora*.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells).

***Tilia maximowiczii* – a lime**
Source: China.
Distribution: Rare locally.
Further Notes: A rare, poorly known lime.
Key locations for seeing some: Rock Mill Arboretum, Milverton (a young specimen planted by D. Howells).

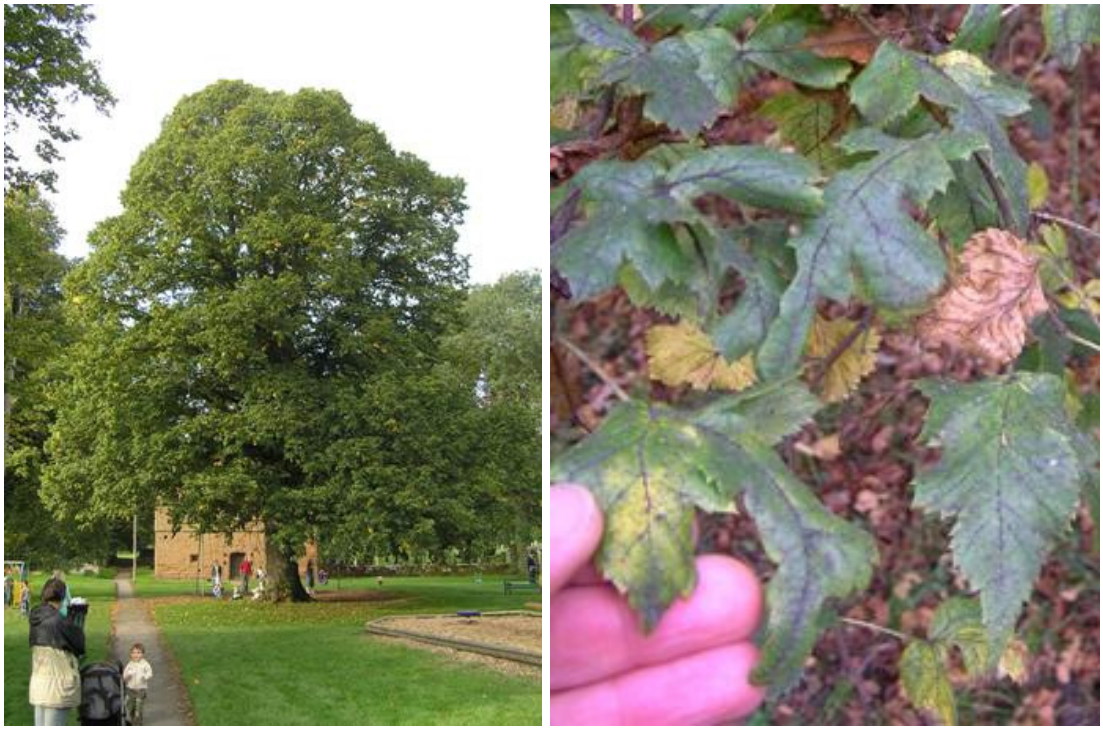
***Tilia miqueliana* – a lime**
Source: Originally Jiangsu, SE China (now extinct) but long-cultivated in Japanese Buddhist temples. Introduced to Britain in about 1900.
Distribution: Rare locally.
Further Notes: A distinctive, slow-growing lime wth grey-felted shoots and small, ovate, tapering leaves. The fragrant flowers are produced in August.
Key locations for seeing some: Rock Mill Arboretum, Milverton (a young specimen grafted on to *T. cordata* by D. Howells).

***Tilia mongolica* – Mongolian Lime**
Source: N China & E Russia. Introduced to Britain in 1904.
Distribution: Rare locally.
Further Notes: A small, rather slow-growing tree of compact rounded habit. The small leaves appear early for a lime and have a very distinctive jagged shape, with coarse toothing.
Key locations for seeing some: Rock Mill Arboretum, Milverton (a young specimen grafted on to *T. cordata* planted by D. Howells).

***Tilia oliveri* – Oliver's Lime**
Source: Central China. Introduced to Britain in 1900.
Distribution: Rare locally, but possibly overlooked for Silver Lime *T. tomentosa*.
Further Notes: An elegant, medium-sized lime with very flat leaves strongly silvery-felted below, like *T. tomentosa* but leaves usually smaller and with longer petioles; also a smoother bark that develops strange folds above the branch scars.
Key locations for seeing some: Rock Mill Arboretum, Milverton (a young specimen grafted on to *T. cordata* by D. Howells).

***Tilia platyphyllos* – Broad-leaved Lime**
Source: A scarce native of limestone areas of Britain and probably not native to Warwickshire. Also found widely in Europe and extending to SW Asia.
Distribution: Frequent in local parks, churchyards, cemeteries and historic estates, though easily overlooked as a Common Lime *T.* x *europaea* or Small-leaved Lime *T. cordata*, especially when young or pollarded.
Further Notes: This is one of the parents of the familiar Common Lime, Small-leaved Lime being the other. It can usually be distinguished from both these species by the felty feel to the leaves produced by a pile of very short hairs over both surfaces, particularly on the veins of the underside. The whitish hair tufts in the vein axils underneath the leaves are poorly defined, and all the leaf veins are much more pronounced giving both leaf surfaces a more textured, less flattened appearance. The leaf size and shape can vary somewhat and leaves on young or pollarded growth can be very large, mis-

shapen and much less hairy, whilst those of some mature trees can average very small (for example the mature specimen at Miner's Welfare Park, Bedworth). The leaves remain green and attached much later in autumn than *T.* x *europaea* and fruit is usually much more abundant and strongly 5-ribbed once ripe (only faintly ribbed in *T. cordata* and *T.* x *europaea*). The shape of a mature tree in the open is fairly broad and usually very neatly rounded – never as tall and 'stretched' upwards as a mature *T.* x *europaea* and not usually as irregular as many mature *T. cordata*.. The trunk bark is more conspicuously ridged than *T.* x *europaea* (rather like a Wych Elm) and is not usually buttressed. Trunks do not usually sprout abundant shoots, except for pollards. Form 'Laciniata' (Cut-leaved Lime) has the leaves strangely misshapen and often very assymetrical. Some old pollarded limes in churchyards belong to this species, though pollards tend to produce aberrant foliage and often lack fruit, making identification from Common Lime pollards rather difficult. It is occasionally coppiced (numerous stools at Hartshill Hayes, plus one at Westwood Heath Church, Coventry).



Broad-leaved Lime (left) typically produces a much neater, rounded canopy than Common Lime or Small-leaved Lime and without a mass of twigs sprouting at the base of the trunk. Cut-leaved Lime 'Laciniata' is an unusual cultvar with strangely mis-shapen leaves (right).

Key locations for seeing some: Charlecote Park (many scattered over the parkland, including an avenue of them leading to the house); Stoneleigh Abbey (the main lime in the public car park, with taller Common Limes lining the entrance drive); Abbey Fields, Kenilworth (numerous fine ones alongside large Common Limes and other lime species, the largest one 3.34m/2006 - also an avenue of pollards in the churchyard); Walton Hall (numerous medium-sized ones); Ragley Hall and Park (several fine ones, including the county champion); Holy Trinity Church, Stratford (several tall ones, also a few within the avenue of mixed lime pollards); Beverley Road, Leamington

(several amongst the *T.* x *europaea*, with very different trunks); Nuneaton Cemetery (some fine ones); Miner's Welfare Park, Bedworth (a fine one by Coventry Road with unusually small leaves); Coombe Abbey Arboretum; Studley Church (pollards around edges); Coughton Court (various places including two avenues in the formal gardens); Priory Park, Warwick (a couple near police station); Marton Church (a fine one, 4.07m/2006 below a low fork); Packington Park (several fine ones in the gardens west of the Hall, the largest 4.62m/2006 below a low fork); Newnham Paddox (a short avenue, the largest 4.68m/2007); Berkswell Church had several very large pollards (largest 5.30m/2006) but these were controversially felled in the period 2007-08. Laciniata: Jephson Gardens, Leamington Spa (one in the E section); Abbey Fields, Kenilworth (overhanging the north edge of park west of the churchyard); Arbury Hall (a medium-sized one S of hall). Coppiced: Hartshill Hayes (numerous stools alongside coppiced *T. cordata*); Coombe Country Park SSSI woodland (several large coppiced specimens); Westwood Heath Church, Coventry (one fine stool behind church).
Largest local specimen: A massive old pollard in Ragley Park is 10.20m around the base/2007, though part of the trunk has collapsed outwards, with the main trunk 8.30m GBH if adjusted for the split, becoming 6.33m @ 2m above several low side branches. One of the largest specimens in Britain.

***Tilia tomentosa* - Silver Lime and Silver Pendent Lime (var Petiolaris)**
Source: Silver Lime: Hungary to SW Russia and NW Turkey. Introduced to Britain in 1767. Silver Pendent Lime: thought to be a variant of the Silver Lime, though its origin is less clear. It has been grown in Britain since 1842.
Distribution: Both forms are occasional in local parks, cemeteries and roadside plantings (Silver Pendent Lime mostly as old trees in Victorian cemeteries and public parks).
Further Notes: In summer, the very silvery foliage of the canopy (resulting from pale undersides to the leaves) is the best clue to this pair of trees. The Silver Pendent Lime is also distinctive at any time of year through its downwardly angled branches and grafted trunk (usually onto a Broad-leaved Lime *T. platyphyllos* base which it then dramatically outgrows). So beware foliage at the base of the trunk, which will belong to the base, not the graft. However, a few Silver Pendent Limes do not appear to be grafted. Silver Lime and Silver Pendent Lime are sometimes treated as separate species, though the differences are so slight that most experts now treat them as selected varieties. Silver Lime by often aquires a broad, rounded shape like *T. platyphyllos,* though the specimens at Allesley Park, Coventry are unusually tall and slim. Silver Pendent Lime is typically very tall. Like Caucasian Lime *T.* x *euchlora*, these limes are fairly immune to aphid attack, and also produce a similar show of yellow autumn colour. Oliver's Lime *T. oliveri* is very similar to Silver Lime but has hairless shoots and more shapely leaves.
Key locations for seeing some: Silver Lime: Allesley Park, Coventry (several fine tall ones within the lime avenue lining Allesley Park Drive, largest 2.59m/2007); Bridgeway, Stratford (a row outside the TIC, facing some Common Limes); Jephson Gardens, Leamington Spa (one on lawn in east sector); Bishops Tachbrook (a very large one on land beside Savages Close, see below); Packwood House car park; Walton Hall; Honington Hall (an avenue of medium-sized ones north of Hall); Charlecote Park (close to Bridge

St). Silver Pendent Lime: Coventry: London Road Cemetery (many, especially in the north sector), St Paul's Cemetery (two rows of them), Greyfriars Park (a large one at the NW corner), Whitmore Park; Leamington Spa: Jephson Gardens, (two large ones, one in the W section, 3.50m GBH/2006, another slightly smaller one in the east section) and a fine one on the Parade outside the Town Hall; Warwick Castle (several including a fine one near Peacock garden 3.34m GBH/2009); Rugby: Clifton Road Cemetery (a couple of fine ones) and Horton Crescent; Riversley Park, Nuneaton (one by river); Brownsover Hall Hotel (a very fine one of 3.54m GBH/2006); Atherstone Cemetery (two fine ones, largest 3.28m GBH/2006); Kenilworth Castle (a tall one within the rows of Beeches in the centre of the castle complex). Non-grafted Silver Pendent Lime: Brueton Park, Solihull (near the pinetum); Crewe Lane Arboretum, Kenilworth; Swanswell Park, Coventry; Ansty Hall.
Largest local specimen: Silver Pendent Lime: Shuckburgh Park (a very tall one of 3.74m @ 1.20m/2007 just north of Hall, graft line almost at ground level), though a 4.08m one was recorded from Bitham Hill in 1999 (not found in 2006 but possibly overlooked). Silver Lime: Savages Close, Bishops Tachbrook, (a large grafted one 3.98m/2008, with a few bits of the canopy slightly pendent, but the overall shape non-pendant).

A very fine Silver Pendent Lime at Greyfriars Park, Coventry. Notice the dense, downward-angled foliage. Both this species and Silver Lime have attractive silvery-grey undersides to their leaves.

***Toona sinensis* – Chinese Cedar**
Source: N & W China. Introduced to Britain in 1862.
Distribution: Rare locally.
Further Notes: Not even a conifer, let alone a cedar (the name stems from its aromatic wood). It is a medium-sized, fast-growing tree of the mahogany

family with pinnate leaves that smell of onions. It could easily be overlooked for a Tree of Heaven *Ailanthus altissima*. In var. 'Flamingo' the young leaves are brilliant pink, then cream, then green. This is a popular street tree in Paris, but scarce in the UK. In China, the young leaves are eaten.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting of 'Flamingo' by D. Howells).

***Trochodendron araliodes* – Wheel Tree**
Source: Japan, S Korea & Taiwan. Introduced to Britain in 1894.
Distribution: Rare locally.
Further Notes: A large evergreen shrub or small tree with aromatic bark. In spring and early summer it produces erect spikes of small yellow-green flowers.
Key locations for seeing some: Rock Mill Arboretum, Milverton; Keresley House, Coventry (latter on owner's 2007 plant list, but not seen by the author).

***Ulmus* – Elms**
Mostly large, deciduous trees with simple, alternately arranged leaves that usually have markedly asymmetric bases. Eighteen species exist worldwide, scattered across the northern hemisphere, and many hybrids between these exist (some naturally others through deliberate crossing). Locally found species (except Chinese Elm *U. parvifolia*) produce small tufts of inconspicuous purplish flowers in early spring before the leaves open, followed by masses of yellowy-green, disc-shaped fruit in late spring. The various species and forms can be very difficult to identify. Check the precise shape and texture of the leaves, the shape of the fruit, the character of the bark and the overall shape of the trees. But note that the leaves of young growth can vary markedly from those of a mature canopy. Very few mature trees now survive in Warwickshire or lowland Britain generally due to Dutch Elm Disease (DED) – a virulent form of which hit Britain in the mid-1970s. This disease is caused by a fungus *Ceratocystis ulmi* spread by *Scolytus* bark beetles which kills off the aerial parts of a tree. But rootstocks often survive allowing young regrowth to sprout, which eventually succumbs to the disease after 15–20 years. The naming of species and forms is highly unstable, even in recent publications, and DNA analysis continues to refine the classification of elms. This catalogue has followed the names used in Johnson & More (2004).

***Ulmus americana* – American (White) Elm**
Source: E and central N America.
Distribution: Very rare locally.
Further Notes: The most familiar elm in eastern USA, but badly affected by DED there. It is still possible to find fine mature specimens in places like New York (including a fine avenue in Central Park). It is not an easy species to distinguish, having striated bark much like Wych Elm *U. glabra* and leaves rather like those of Huntingdon Elm *U.* x *hollandica* (large with 15-20 veins) but it tends to mature into a much broader tree with leaves usually broadest above the middle. The leaves give a fine autumn yellow.

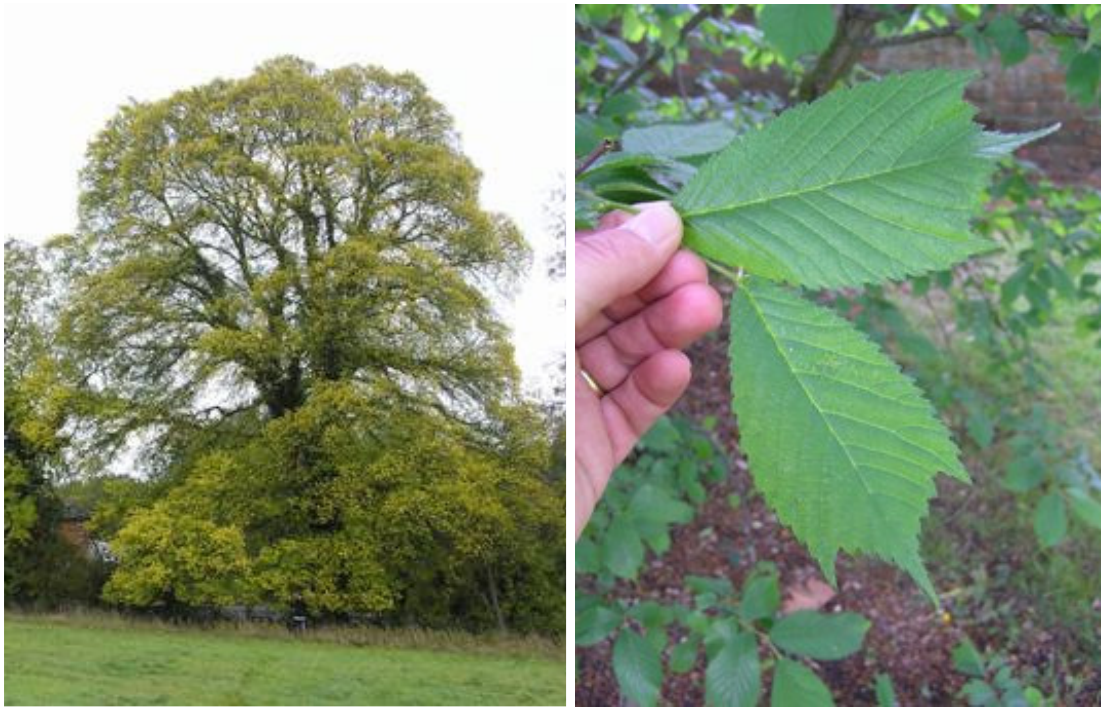
Key locations for seeing some: Wasperton Farm near Barford (two grown from seed obtained from wild trees in New York State in 1986, the larger specimen 62cm @ 1m/2007 and healthy at the time of writing); Rugby School (several young ones beside sports field at top of Barby Road, var 'Princeton' teste Paul Thornton).

***Ulmus carpinifolia* – the old name for *Ulmus minor* var. *minor* (Smooth-leaved Elm)**

***Ulmus* 'Dodoens' (*U. glabra* x *wallichiana*) – 'Dodoens' Elm**
Source: A fairly new cross between the Exeter Elm (var 'Exoniensis' of the native Wych Elm *U. glabra*) and the Himalayan Elm *U. wallichiana*, developed for DED-resistance in the Netherlands. Introduced to Britain in 1973.
Distribution: Rare locally.
Further Notes: A rather open elm with steep branches and deeply toothed leaves. Planted in some towns and cities as an alternative to *Ulmus* 'Sapporo Autumn Gold'.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells); Newbold Revel (two medium-sized elms on the lawn near the sports pitch, appear to be this elm; a site in S Warwickshire (planted in about 1990 and growing strongly, teste D. Howells).

***Ulmus glabra* - Wych Elm**
Source: A widespread native species (the only indisputably native elm); also widespread in Europe and extending into W Asia.
Distribution: Common as regrowth in local hedges and woods, plus a few larger trees still surviving within our area. This is the main elm occurring within local woods.
Further Notes: Once familiar as a large neatly symmetrical tree throughout our area, perhaps especially in the north and west, with the rather different-looking English Elm *U. minor* var. *vulgaris* dominating the younger hedges of the east and south. But DED killed all but about 15 trees following the last big outbreak the mid-1970s. Wych Elm had a marginally better survival rate than English Elm (where all local big trees appear to have died), reflecting the fact that it can propagate sexually to form genetically variable trees, some of which evidently have more resistance to the disease. Wych Elm regrowth is characterised by large, broad, matt leaves (up to 18cm long with 14-20 vein pairs), which often bear pointed 'shoulders' alongside the main tip. The leaves of mature canopies are much smaller and always oval. The bark stays smooth on twigs and smaller branches for several years (*glabra* = smooth) in contrast to the rough twigs and branches of most other elms. There are weeping forms such as 'Pendula' and 'Camperdown', which are always grafted onto the trunk of a normal *glabra*. Exeter Elm 'Exoniensis' is a strange, open-crowned form with dense bunches of twisted leaves bearing very pronounced teeth around their margins. Wych Elm never suckers freely like English Elm and often occurs deep within woods. It can hybridise with other elms, either naturally or through deliberate breeding (see the accounts for *Ulmus* x *hollandica* and *U.* x *vegeta*) and cannot always be confidently separated from these hybrids. It is worth noting that the Earl of Camperdown, who gave his name to

Camperdown Elm, was a former owner of the Weston Park Estate in south Warwickshire.
Key locations for seeing some: Regrowth can easily be found in local hedges. Larger specimens include the following: Normal Form: Coleshill (a fine specimen of 3.8m GBH/2011 overhanging the Coventry Road near to Woodlands School), Five Ways A4177 (a fine one just north of the roundabout 2.47m GBH/2007); Temple Balsall (two moderate sized roadside ones); Armscote (two moderate sized ones on the Ilmington Road); Preston Bagot to Lowsonford Road (several medium-sized ones near Preston Fields Church); Bannams Wood, Moreton Bagot (much regrowth); Oversley Wood, near Alcester (ditto). Weeping Elms: Coventry (Greyfriars Park, a fine one just north of ring road underpass and Holy Trinity Church, in churchyard south of the Church, a 'Pendula' according to O. Johnson); Leamington Spa (in a schoolyard close to Beauchamp Road and Hall Road junction); Ann Hathaway's Cottage, Shottery (a young 'Camperdown'); St. Mary's Church, Rugby (a 'Camperdown' 1.48m @ 90cm/2007). Exeter Elm: Allesley Park (a medium-sized tree at Buckhold Drive end); Stratford on Avon (a young one at The Elms cul de sac, off Maidenhead Road).
Largest local specimen: Rowington overhanging Old Warwick Road just SE of Rowington Church (4.10m GBH/2009).



Warwickshire's finest surviving Wych Elm at Rowington (left), one of the few large elms of any sort surviving in Warwickshire today. The foliage of Wych Elm regrowth is usually easily identifiable by the three-pointed leaf tip.

Ulmus x *hollandica* – European hybrid elms, including Dutch Elm, Huntingdon Elm and 'Lobel' Elm

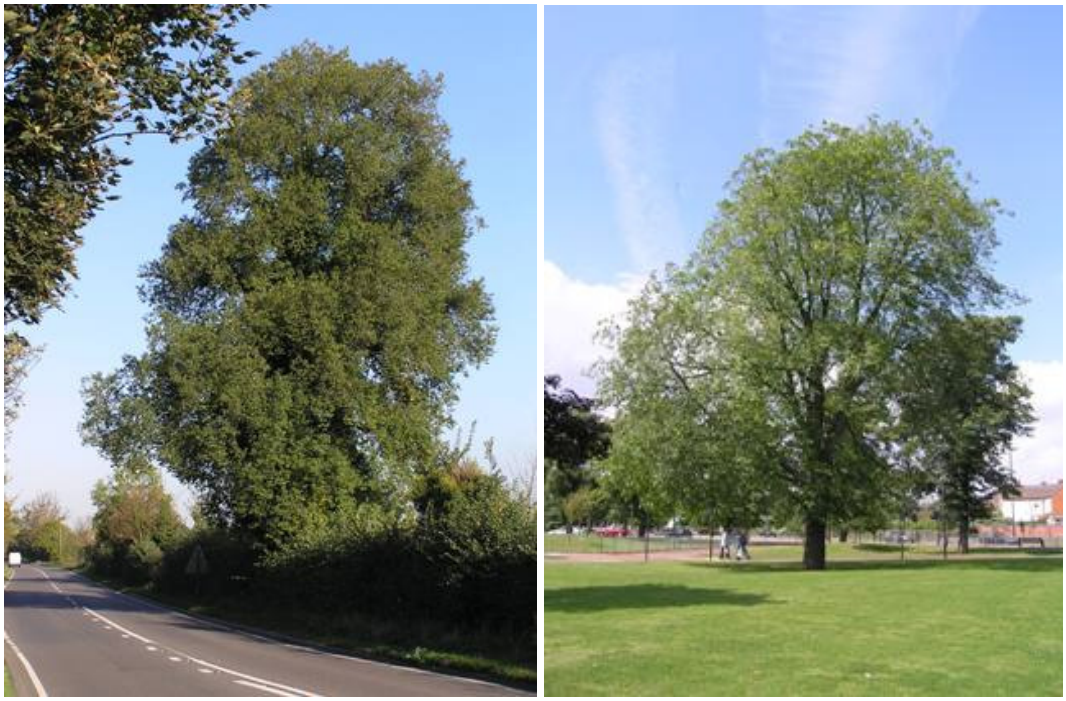
Source: A group of hybrids between Wych Elm *U. glabra*, the Field Elm *U. minor* and sometimes Plot's Elm *U. plotii*. Such hybrids can arise naturally where these native species occur together (especially in East Anglia), but such trees have also been deliberately cultivated on the Continent as timber

and parkland trees and then introduced into Britain. Huntingdon Elm (var. 'Vegeta') was developed in Britain (Huntingdon) in about 1760. 'Lobel' is a DED-resistent cross between *U.* x *hollandica* and and another hybrid elm 'Dodoens' developed in Holland in 1973.
Distribution: Few Dutch or Huntingon Elms are known to have survived DED in our area (though they are moderately resistant in places like East Anglia), though these hybrids have been widely recorded here in the past.
Further Notes: The 'Dutch' of the name refers to the source of the cultivated stock, and is unrelated to the term 'Dutch Elm Disease'. A classic mature Dutch Elm (var. 'Hollandica') is a tall tree, not unlike *U. glabra* but with a thinner canopy and more upwardly directed branches. It also suckers, unlike *U. glabra*. A classic mature Huntingdon Elm is similar but typically a very large and substantial tree with larger leaves than Hollandica (to 15cm) bearing highly asymmetric bases. Var. 'Jacqueline Hillier' is a small-leaved, spreading shrub, which may be a hybrid between *U.* x *hollandica* and Chinese Elm *U. parvifolia*. 'Plantjin' is a DED-resistant form developed in Holland in 1973 and resembling *U. minor* in many ways. 'Lobel' is a very narrow 'fastigiate' tree. 'Dodoens Aurea' is a popular 'Golden Elm' (though several other varieties of elm with yellow foliage exist).
Key locations for seeing some: Gosford Green, Coventry (a fine Huntingdon Elm of 2.39m GBH/2004 survives at the north end of Humber Road); Rock Mill Arboretum, Milverton (young planting of 'Jacqueline Hillier' by D. Howells); Coughton Court (a probable Huntingdon Elm of moderate size beside the riverside walk); A429 Barford to Wellesbourne Road (a probable wild hybrid according to Owen Johnson based on images sent); Stratford Mouthouse (two trees on grass area south of the hotel entrance appear to be 'Plantjin' according to Owen Johnson, based on images sent); Tiddington, beside Baraset restaurant (a fine tree of 2.20m GBH/2006); Elmdon Park, Solihull (several 'Lobel' near the giant Sweet Chestnut); Barton House, Barton on the Heath (a probable 'Dodoens Aurea').
Largest local specimen: the A429 tree if confirmed as belonging to this category (2.95m GBH/2006).

***Ulmus japonica* – Japanese Elm (requires confirmation)**
A young 'DED-resistant elm at Honington Hall may be this species according to Owen Johnson (based on images sent).

***Ulmus laevis* - European White Elm (requires confirmation)**
A mature elm (3.57m GBH/2006) in Charlecote Park (amongst the rows of trees across the river from Charlecote House) may be this species according to Owen Johnson (based on images) but requires checking. It has a very broad crown and unusually smooth bark for a large elm. The leaves are relatively broad. But the diagnostic features (which have yet to be checked) are the conic orange buds and flowers/fruits dangling on 1cm stalks).

Ulmus* 'Lobel' (*U.* 'Dodoens' x *U.* x *hollandica*) – see under *Ulmus* x *hollandica



Two further suvivors of DED, a presumed hybrid elm beside the A429 between Barford and Wellesbourne (left) and a Huntingdon Elm at Gosford Green, Coventry (right).

***Ulmus minor* – Field Elms including English Elm, Smooth-leaved Elm, Lock Elm and Wheatley Elm**

Source: A variety of forms (sometimes regarded as different species) including some possibly native varieties e.g. Smooth-leaved Elm (var. 'Minor') and Lock Elm (var. 'Lockii'), plus some introduced ones English Elm (var. 'Vulgaris') and Wheatley Elm (var. 'Sarniensis'). English Elm is thought to have been originally introduced from S Europe by the Romans to train vines up. Wheatley Elm was developed in the Channel Islands and has been grown in Britain since 1836. It has also been suggested that other forms of *U. minor* were introduced by Neolithic people.

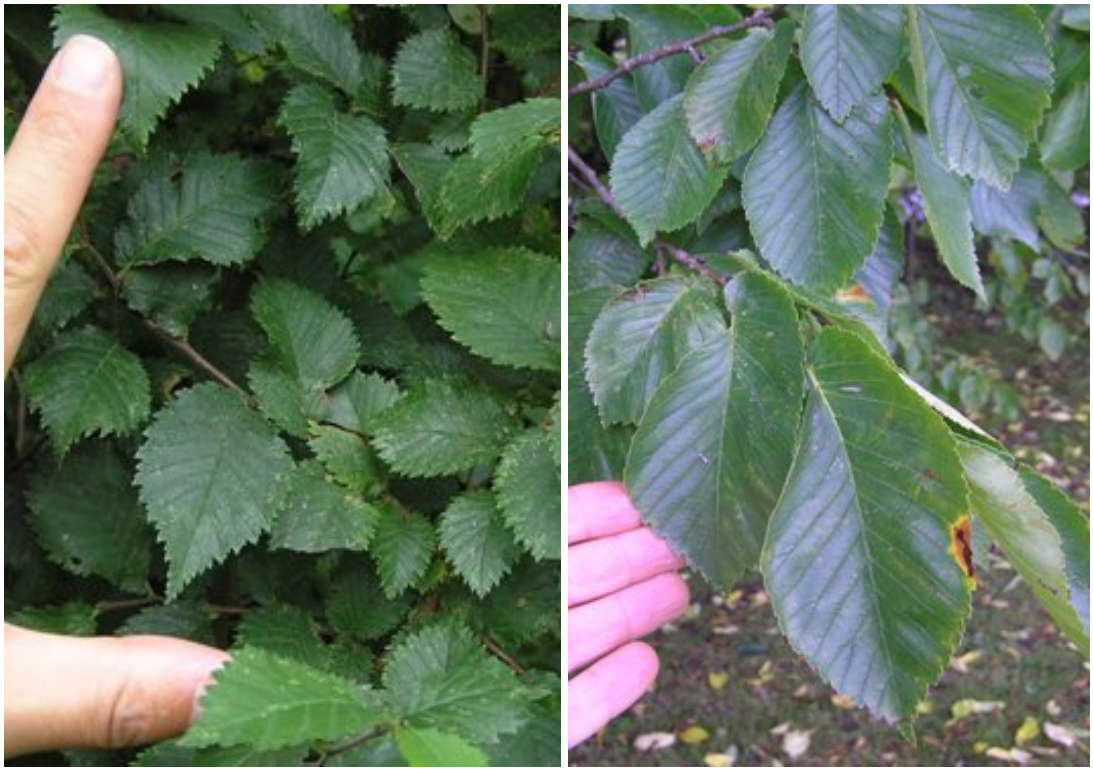
Distribution: English Elm used to be the most frequent big elm of our area. It was known as the 'Warwickshire Weed' and probably gave rise to the term 'Leafy Warwickshire'. No mature English Elms are known to survive locally (it is particularly susceptible to DED), though regrowth remains abundant in hedges and sometimes at woodland edge. Smooth-leaved Elm was never as common as English Elm, but mature specimens were widespread and some modern regrowth with leaves longer, narrower and shinier than English Elm appears to be this variety. Lock Elm and Wheatley Elm have scattered records for our area. The global distribution of Lock Elm is centred upon the British Midlands.

Further Notes: One of the most complex groups of British trees, both in terms of identification and nomenclature. Until recently, English Elm was classified as *U. procera*, Smooth-leaved Elm as *U. carpinifolia*, Lock Elm (also known as Plot's Elm) as *U. plotii*, with Wheatley Elm (also known as Jersey or Guerney Elm) regarded as a cultivar of *U. carpinifolia*. Typical mature specimens of some are quite distinctive. English Elm is characterised by small, rough leaves, corky bark on the branches of regrowth, trunk bark that has squarish plates (most elms have striated bark ridges) and a rather

asymmetrical untidy silhouette with lots of branches on its trunks. Wheatley Elm also has very small leaves but the crown develops a very triangular shape that in winter produces an appearance uncannily like that of the deciduous conifer Dawn Redwood *Metasequioa glyptostroboides*. Smooth-leaved Elm resembles Wych Elm *U. glabra* but usually has more pendulous, twisting shoots and narrower, shinier leaves (but beware Huntingdon Elm *U.* x *vegeta* which can look similar). Lock Elm is a very narrow tree, with short side branches and a scanty, lop-sided crown. Golden Elm 'Dampieri Aurea' is a narrowly columnar cultivar of *U. minor* with golden-yellow foliage throughout the summer and good resistence to DED. All local Wheathley Elms appear to have succumbed to DED, the last two survivors were at Dale Street Leamington Spa (died in 1998).

Key locations for seeing some: English Elm: re-growth can easily be found within hedges of all districts, and often within the hedges of parks and gardens, though no mature specimens are known to survive locally. Smooth-leaved Elm: regrowth thought to represent this form can be found in some of the hedges and riverside areas around Alcester and Hampton Lucy, beside the railway line at Priory Park, Warwick, and along the disused railway line at Luddington, though no mature specimens are known today. Lock Elm: A couple of large elms formerly within the copse at the north of Warwick Race Course appeared to be this form, but have recently been removed. Golden Elm: Rock Mill Arboretum, Milverton (young planting by D. Howells).

Largest local specimen: Unclear as no confirmed *U. minor* trees locally are known to have survived DED. Many fine English Elms of 4-5m GBH could be found locally before DED.



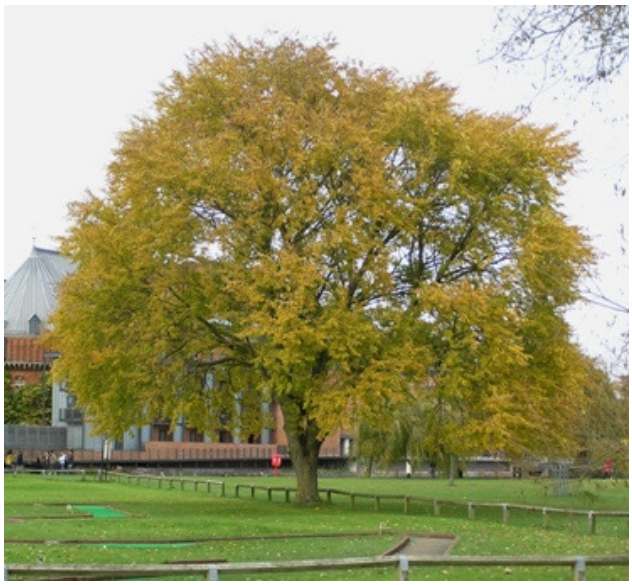
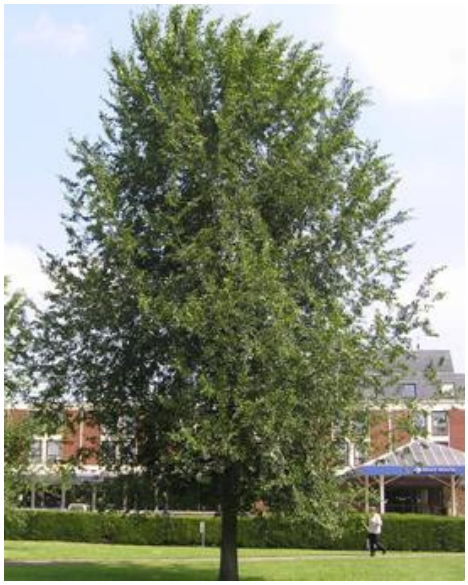
The small, rough looking leaves of English Elm (left) remain abundant in hedges throughout Warwickshire. Smooth-leaved Elm (right) has longer shinier leaves and is mainly found within hedges of south Warwickshire.

***Ulmus parvifolia* – Chinese Elm**
Source: E Asia & S Japan. Introduced to Britain in 1794.
Distribution: Rare locally.
Further Notes: A small, slow-growing elm with small (2-6cm) leaves that have almost symmetrical bases (usually distinctly assymetrical in elms). It could easily be mistaken for a southern beech *Nothofagus*. It is one of the few elms that flower in autumn. Chinese Elm is one of the most popular bonsai trees, so you can sometimes find some very stunted examples on sale in local shops and garden centres.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells); Barton House, Barton on the Heath (a young one); another site in S Warwickshire (planted in about 1990 and growing strongly, teste D. Howells).

***Ulmus plotii* – the old name for *Ulmus minor* var. lockii (Lock Elm)**

***Ulmus procera* – the old name for *Ulmus minor* var. *vulgaris* (English Elm)**

***Ulmus 'Sapporo Autumn Gold'* – a hybrid elm 'Sapporo Autumn Gold'**
Source: A hybrid between Japanese Elm *Ulmus japonica* and Siberian Elm *U. pumila* that was developed in the USA in 1973 to replace elms killed by DED.
Distribution: This appears to be the main elm planted in local municipal parks plus the occasional roadside since the late 1970s. It is quite widespread now.
Further Notes: This hybrid has considerable resistance to DED. It is a fast growing tree with fairly broad crown and rather elongate, glossy, dark green leaves in long alternate rows that give the canopy a rather distinct appearance even from a distance. The foliage is attractively red tinged when young, turning bright yellow in autumn. It is not easily distinguished from its parents, and there is always a chance that these have been planted locally too as they are also fairly disease resistant. There are also other varieties of disease resistant elms planted locally e.g. Priory Park, Warwick, Stratford Moat Hotel (two probable 'Plantjin' beside path leading from the hotel to Bancroft Gardens), Honington Hall, Newbold Revel, and Elmdon Park. These can resemble Sapporo Autumn Gold, but often fail to produce a bright autumn colour, and often have broader leaves or a different crown shape, but most of these are very difficult to identify.
Key locations for seeing some: Stratford: about a dozen in 'The Rec'; a fine one in Bancroft Garden close to the Theatre and another in 'The Firs' park; Pump Room Gardens, Leamington Spa (a specimen in front of the library entrance); Abbey Fields, Kenilworth (three specimens in the south of the park, largest 1.19m GBH/2006); St Nicholas Park, Warwick (a couple); one at the Leamington Road-Michaelmas Road Junction, near Coventry Station, Coventry; Solihull: several in Brueton Park and at least one in Elmdon Park; Hampton Wood near Sherbourne (several planted within a woodland setting).
Largest local specimens: the largest ones in Stratford are about 1.60m GBH/2006.

Several DED-resistant varieties of elms can be found in Warwickshire. Sapporo-autumn Gold (left) is a broad-crowned variety that gives fine autumn colour. This is one of several in the Stratford Rec, across the river from the RSC theatre. The narrower tree nearby outside the Moat Hotel (right) appears to be a 'Plantjin'.

***Ulmus* x *vegeta* – the old name for *Ulmus* x *hollandica* 'Vegeta' (Huntingdon Elm)**

***Umbellularia californica* – Californian Laurel**
Source: California & Oregon. Introduced to Britain in 1829.
Distribution: Only a single site known locally.
Further Notes: A large, broad-leaved evergreen tree able to attain a height of 30 metres and often with multiple stems arising from the base. The leaves are relatively narrow and resemble those of some willows or eucalyptus. The flowers are small and inconspicuous and give rise to fruit that look like black olives. The tree is so strongly aromatic that it also called the 'Headache Tree'.
Key locations for seeing some: Keresley House, Coventry (several small trunks arising from what may have been a large former trunk of Victorian origin).

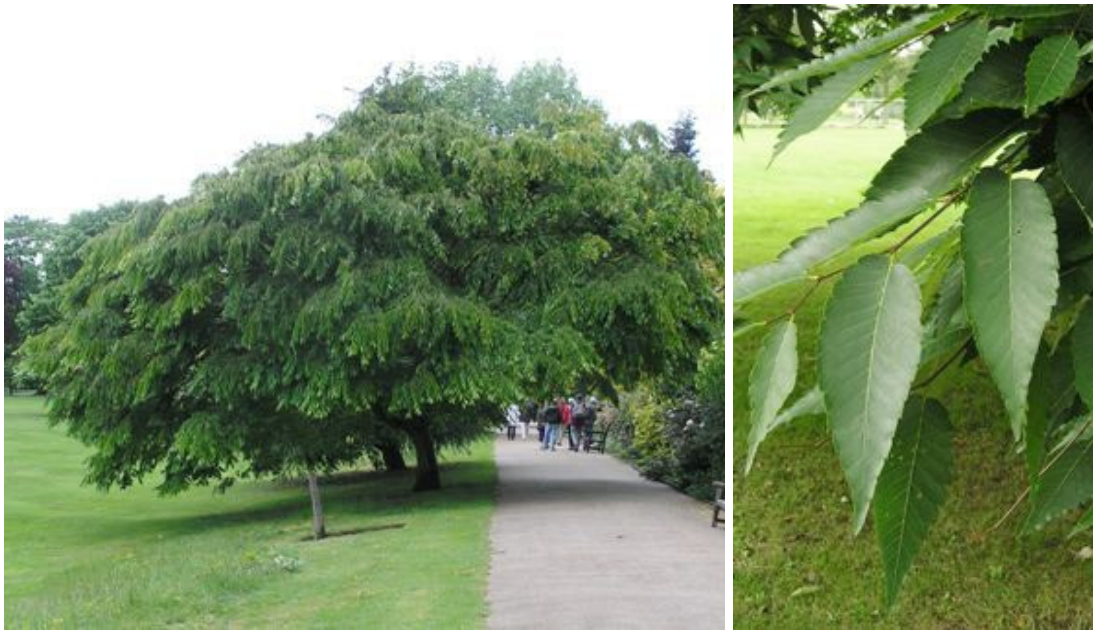
***Xanthoceras sorbifolium* – Yellowhorn (Chinese Flowering Chestnut)**
Source: Northern China. Introduced to Britain some time after 1866.
Distribution: Rare locally.
Further Notes: Once a fashionable tree, now rare. It has pinnate leaves that resemble rowans (hence the name '*sorbifolium*'). But the flowers are very different to any rowan, large and bell-shaped in upright clumps, white or pink coloured with yellow centres, typically in May. These produce curious, nut-like fruit.
Key locations for seeing some: Rock Mill Arboretum, Milverton (young planting by D. Howells).

***Zanthoxylum simulans* – Szechuan Pepper (Chinese or Flatspine Prickly-ash)**
Source: Eastern China and Taiwan.

Distribution: Only a single local site known.
Further Notes: A large spiny shrub or small tree with pinnate leaves. In China, the berry shells are dried and used as a condiment and have a pepper flavour that is an ingredient of the famous Chinese 'five spice' mixture.
Key locations for seeing some: Keresley House, Coventry (on owner's 2007 plant list, but not seen by the author).

***Zelkova* – Zelkova Elms**
Six species of medium-sized to large trees found from Cyprus through to Japan. They are closely related to true elms *Ulmus*, but their leaves have symmetrical bases unlike *Ulmus*, and are more likely to be confused with certain southern beeches *Nothofagus*, though the fruit are very different. The two locally found species differ in from one another in leaf shape and mature into very different-shaped trees. Zelkovas are susceptible to Dutch elm disease, but local specimens appear healthy.

***Zelkova carpinifolia* – Caucasian Elm**
Source: Iran, Georgia, Armenia & E Turkey. Introduced to Britain in 1760.
Distribution: Rare locally.
Further Notes: A mature Caucasian Elm is a magnificent and distinctive tree, with a natural upright habit and multiple stems forming the canopy (like a giant fastigiate Hornbeam) – you could easily think it had been pollarded. Younger specimens are easily confused with *Z. serrata* but the leaves are typically shorter, with larger more rounded lobes that are less forward-pointing.
Key locations for seeing some: Brueton Park, Solihull (a medium-sized tree, 1.72m GBH/2006 not far from the Parkridge Centre that has yet to gain the full character of the species), also some smaller ones in the adjacent Malvern Park alongside *Z. serrata*).



A Keaki at Jephson Gardens showing the low broad crown (left), foliage of another fine specimen at St Nicholas Park, Warwick (right).

***Zelkova serrata* – Keaki (Japanese Water Elm)**
Source: Japan (where a valuable timber tree), Taiwan, Korea & NE China. Introduced to Britain in 1862.
Distribution: Occasional in local public parks and gardens, with several recently planted specimens in Coventry parks.
Further Notes: Typically an attractive low broad tree with rather longer leaves than Z. *carpinifolia*. But older trees can be more upright. Keaki can produce fine autumn colour with deep purples.
Key locations for seeing some: Jephson Gardens, Leamington Spa (a nice one near NE Corner (1.14m @ 1m/2007); Warwick: St. Nicholas Park, (several fine ones, the largest one 1.30m GBH/2006 near the boat house) and Priory Park (a young one); Castle Farm Recreation Centre, Kenilworth (one by car park); Brueton and Malvern Parks, Solihull (several with some *Z. carpinifolia* to compare against, the largest measured 1.22m GBH/2006); Riversley Park, Nuneaton (south end); Coventry: Whitmore Park and Allesley Park (recent municipal planting at both sites), Keresley House (a young specimen of a very small leaved form); Rock Mill Arboretum, Milverton (young planting by D. Howells); Newnham Paddox (a large leaning specimen representing an upright variety, in the pinetum near the bonfire area); Barton House, Barton on the Heath (a young specimen with small leaves); Eathorpe Hall (a medium-sized one in rear garden).
Largest local specimen: Newnham Paddox (1.63m GBH/2007, adjusted for lean).