



Arboriculture Research Note

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THE NATIVE AND EXOTIC TREES IN BRITAIN, by A.F. Mitchell

Abstract

The combined effect of the last ice age and the formation of the English Channel have lead to Britain having a poor native tree flora of 33 species only, Man was responsible for the introduction of many additional species, over 30 by the year 1600 and several dating back to Roman times. The great influx of park and garden trees began after 1600. Lists are given of the natives and the introductions in the approximate order of their arrival - there are some surprises.

History

1. When the last ice-sheet was retreating from Britain 9-10,000 years ago it left a land devoid of trees. Trees could migrate into the country at its southeastern corner from continental Europe and from land south and west of Cornwall which acted as a refuge. The land connection with the continent eroded away about 5000 years ago and the southwestern refuge areas were inundated at about the same time due to the rise in sea-levels from the melted ice.
2. There was a period, then, of only about five thousand years during which trees could extend their ranges to what is now Britain and this limited severely the number of species which were able to do so. Only those species with populations which had attained what is now northeastern France, Belgium and the Netherlands, in time to migrate across the last connecting land before that was breached, could be truly native.
3. At this period, early tribes of man were also recolonising Great Britain and might possibly have brought some trees with them. A people moving into a land they knew to be tree-less might be expected to bring some easily propagated, hardy species to plant for shelter and fodder. Some of these would be the hardy pioneer species which were colonising the area naturally; as such they would not be separable now into wild and planted areas, but that is of little significance as the tree would be a true native anyway. Other species might have been eminently suitable trees for the climate of Britain at that time but they were not colonising independently because their natural range in Europe had not extended to the approaches to Britain. It might be possible to distinguish these species from the true natives by a distribution today which centres around populated areas but does not include remote woods and wild places. The two species most fitting this category are the useful pioneers, White and Grey poplar.
4. Somewhat later, the settlers coming to a well-wooded country would not need to bring trees for shelter or timber but might wish to bring the fruit-trees to which they were accustomed in their more southerly regions. Hence the Wild pear and the medlar would have been brought. After generations of searching by botanists the English elm has not been found anywhere along the Channel coast of the continent and so it is very unlikely to be a native tree (it is not acceptable botanically that the entire population could migrate across the bridge without leaving a parent population). This and the Smooth-leaved elms were of great value on the continent as fodder for cattle and would be likely to be brought here while the suckering growth of the English elm was used for establishing boundaries. It is believed that the English elm was brought by Iron Age tribes, starting in the Vale of Berkeley region while other tribes from other areas brought

their Smooth-leaved elms to Cornwall, west Devon, the eastern end of Kent and to much of East Anglia.

Native Species

5. The trees generally accepted to be truly native are, in an approximate order of arrival here:

Common juniper	<i>(Juniperus communis)</i>
Downy birch	<i>(Betula pubescens)</i>
Silver birch	<i>(Betula pendula)</i>
Aspen	<i>(Populus tremula)</i>
Scots pine	<i>(Pinus sylvestris)</i>
Bay willow	<i>(Salix pentandra)</i>
Common alder	<i>(Alnus glutinosa)</i>
Hazel	<i>(Corylus avellana)</i>
Small-leaved lime	<i>(Tilia cordata)</i>
Bird cherry	<i>(Prunus padus)</i>
Goat willow	<i>(Salix caprea)</i>
Wych elm	<i>(Ulmus glabra)</i>
Rowan	<i>(Sorbus aucuparia)</i>
Sessile oak	<i>(Quercus petraea)</i>
Ash	<i>(Fraxinus excelsior)</i>
Holly	<i>(Ilex aquifolium)</i>
Common oak	<i>(Quercus robur)</i>
Hawthorn	<i>(Crataegus monogyna)</i>
Crack willow	<i>(Salix fragilis)</i>
Black poplar	<i>(Populus nigra v. betulifolia)</i>
Yew	<i>(Taxus baccata)</i>
Whitebeam	<i>(Sorbus aria)</i>
Midland thorn	<i>(Crataegus laevigata)</i>
Crab-apple	<i>(Malus sylvestris)</i>
Wild cherry	<i>(Prunus avium)</i>
Strawberry-tree	<i>(Arbutus unedo)</i>
White willow	<i>(Salix alba)</i>
Field maple	<i>(Acer campestre)</i>
Wild service tree	<i>(Sorbus torminalis)</i>
Large-leaved lime	<i>(Tilia platyphyllos)</i>
Beech	<i>(Fagus sylvatica)</i>
Hornbeam	<i>(Carpinus betulus)</i>
Box	<i>(Buxus sempervirens)</i>

Introductions Pre 1600

6. The earliest introductions were unrecorded and can only be inferred from other evidence. The first attempt to list trees growing here was published in 1548 and until 1650 there are few introductions with precise dates.

True Service tree	<i>(Sorbus domestica)</i>	Very early
White poplar	<i>(Populus alba)</i>	“ “
Grey poplar	<i>(Populus canescens)</i>	“ “
Medlar	<i>(Mespilus germanica)</i>	“ “
Wild pear	<i>(Pyrus communis)</i>	“ “
Almond	<i>(Prunus dulcis)</i>	“ “
Myrobalan Plum	<i>(Prunus cerasifera)</i>	“ “
Peach	<i>(Prunus persica)</i>	“ “

English Elm	(<i>Ulmus procera</i>)	Pre Roman
Smooth-leafed elm	(<i>Ulmus carpinifolia</i>)	“ “
Cornish elm	(<i>Ulmus carpinifolia</i> 'Cornubiensis')	Pre Roman
Plot's elm	(<i>Ulmus carpinifolia</i> 'Plotii')	“ “
Walnut	(<i>Juglans regia</i>) ?	Pre Roman
Sweet chestnut	(<i>Castanea sativa</i>)	Roman
Swedish whitebeam	(<i>Sorbus intermedia</i>)	
Sycamore	(<i>Acer pseudoplatanus</i>)	
Holm oak	(<i>Quercus ilex</i>)	ca 1500
Maritime pine	(<i>Pinus pinaster</i>)	“ “
Stone pine	(<i>Pinus pinea</i>)	“ “
Mulberry	(<i>Morus nigra</i>)	“ “
Norway spruce	(<i>Picea abies</i>)	“ “
Italian cypress	(<i>Cupressus sempervirens</i>)	ca 1500
Oriental plane	(<i>Platanus orientalis</i>)	“ “
Common laburnum	(<i>Laburnum anagyroides</i>)	1560
Bay	(<i>Laurus nobilis</i>)	1562
Cherry laurel	(<i>Prunus laurocerasus</i>)	1576
Turkish hazel	(<i>Corylus colurna</i>)	1582
Eastern Balsam poplar	(<i>Populus balsamifera</i>) ?	1859
Scotch laburnum	(<i>Laburnum alpinum</i>)	1596
White mulberry	(<i>Morus alba</i>)	1596
Oleaster	(<i>Phillyrea latifolia</i>)	1597
Judas tree	(<i>Cercis siliquastrum</i>)	pre 1600

Introductions Since 1600

7. After 1600 the great number of trees introduced included a flood of the immensely varied species from the eastern USA as the Allegheny Mountains were explored. Most of the introductions from this time on have been attributed to precise dates. Some of the important trees of north America, the Mediterranean and far east that arrived between 1600 and 1800 are: -

Common lime	(<i>Tilia x europaea</i>)	ca 1600?
Common Silver fir	(<i>Abies alba</i>)	1603
Horse chestnut	(<i>Aesculus hippocastanum</i>)	1616
European larch	(<i>Larix decidua</i>)	c 1625
Locust-tree	(<i>Robinia pseudoacacia</i>)	1636
Cedar of Lebanon	(<i>Cedrus libani</i>)	1639
Swamp cypress	(<i>Taxodium distichum</i>)	1640
Tulip-tree	(<i>Liriodendron tulipifera</i>)	1650 or later
Red maple	(<i>Acer rubrum</i>)	1656
Sweetgum	(<i>Liquidambar styraciflua</i>)	1681
Norway maple	(<i>Acer platanoides</i>)	pre 1683
London plane	(<i>Platanus x acerifolia</i>)	c 1685
Scarlet oak	(<i>Quercus coccinea</i>)	1691
Cork oak	(<i>Quercus suber</i>)	1699 or before
Red oak	(<i>Quercus rubra</i>)	1724
Bull Bay	(<i>Magnolia grandiflora</i>)	1734
Turkey oak	(<i>Quercus cerris</i>)	1735
*Tree of Heaven	(<i>Ailanthus altissima</i>)	1751
*Pagoda tree	(<i>Sophora japonica</i>)	1753
*Ginkgo	(<i>Ginkgo biloba</i>)	1754
Lombardy poplar	(<i>Populus nigra</i> 'Italica')	1758
Corsican pine	(<i>Pinus nigra</i> v. <i>maritima</i>)	1759
Zelkova	(<i>Zelkova carpinifolia</i>)	1760

Grey alder	(<i>Alnus incana</i>)	1780
*Chinese privet	(<i>Ligustrum lucidum</i>)	1796
Monkey-puzzle	(<i>Araucaria a araucana</i>)	1797

8. The first of the Western American conifers were sent in 1827. Sugar pine (*Pinus lambertiana*), Western Yellow pine (*Pinus ponderosa*) and Douglas fir (*Pseudotsuga menziesii*) ; followed in 1831-1833 by Grand fir (*Abies grandis*), Noble fir (*Abies procera*), Sitka spruce (*Picea sitchensis*), Monterey pine (*Pinus radiata*), Digger pine (*Pinus sabiniana*) and Big-cone pine (*Pinus coulteri*), all up to this point sent by David Douglas. Seeds of the Monterey cypress (*Cupressus macrocarpa*) appeared on a desk at Kew in 1838. The coast redwood (*Sequoia sempervirens*) was received via Russia in 1843. During the period 1851-1855 nearly all the conifers of the western slopes were sent by John Jeffery and William Lobb. The Giant sequoia (*Sequoiadendron giganteum*) was brought first in August 1853 by John Matthew.
9. The first major influx of plants from Japan arrived in 1861 with a second wave, from the interior mountains, between 1878 and 1890. Four trees came from China before 1800 (See * in the table on page 3) and a few in 1850-1854 from treaty ports, while some from the interior were sent by Henry in 1888. The vast additions from Central and Western China came after 1900 through Ernest Wilson 1901, 1907-8: George Forrest and Joseph Rock particularly, 1910-1935. The Dawn redwood (*Metasequoia glyptostroboides*) discovered in Central China in 1941 was received in January 1948.

Conclusion

10. In contrast to the restricted native tree flora the number of introduced tree species is very large. The term 'native' can only refer to those trees that found their way to Britain unaided by man's efforts and it should only be used in this context.

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