

# Horse Chestnuts in Battersea Park

## Brian Livingstone and Clive Freedman

Horse chestnuts are plentiful in the Park. Both white and red flowered species will be familiar to visitors and we illustrate some of those. The ones that grow here are the European horse chestnut with its white flower 'candles' and some North American species, which are mostly red flowered but may also be yellow and white. You can find some of them described in Tom Maxwell's Tree Guide section of the Battersea Park website<sup>1</sup>. The European horse chestnut (white flowered) is the westernmost species in Eurasia, with others found all the way across to Japan. The Indian species (white flowered but with rather different shaped leaves) is planted in some London parks (and in Buckingham Palace gardens) but we do not believe there are any here in Battersea Park.

The white flowered European species is native to the Balkans, where the first Englishman to describe it growing there was John Hawkins in a book on Greek flowers in 1806. By then, the first specimens had already been planted here, in the early 17th century, in the parks of country estates. There are numerous explanations of the English name. 'Chestnut' obviously refers to its similarity to edible chestnuts (from an unrelated species of tree) but the 'horse' is less obvious. It is said to have been used as a medicine for treating horses, in the Turkish Empire. Also, it is said that the name's origin is from the horseshoe shaped scar left by a fallen leaf<sup>2</sup>. The former sounds more convincing. The nuts contain aescin, which is a herbal remedy for swollen legs and you can buy tablets containing that, for humans. But don't try eating horse chestnuts yourself .... they also contain the poisonous aesculin. The name must date from horse chestnuts' 17th century appearance in cultivation in Central and Western Europe, because, already, by the mid-18th century, Linnaeus, the great biologist and species classifier, was calling it *Aesculus hippocastanum*, the second word meaning 'horse chestnut'<sup>3</sup>. It is also called 'horse chestnut' in many European languages.

In the USA, the trees are called 'buck-eyes', describing the brown seed peeking through the open capsules. Maxwell notes that the first English settlers in North America at the beginning of the 17th century would have seen these red flowered trees before the white ones had ever been brought to England, so 'buck-eye' pre-dates 'horse chestnut'.

Not all the flowers can form seeds because while some of the flowers in the candles have both male and female components, many are male only. This is perhaps just as well when you see the huge numbers of conkers lying under the trees in autumn. A conker is so big because it contains a lot of nutrients to help the seedling make a good start in the forest where the trees grow naturally. Acorns contain similar large food reserves but, even with that, young oak trees will not survive without plenty of light. If kept moist and covered quickly, conkers will germinate quite easily but very few horse chestnuts become naturalized in this country. In parks and streets they will be weeded out or mown over. Similarly, in the ornamental meadows of country houses they will be mown over as they are potentially toxic to livestock.

The major issue with the trees at present is the leaf miner infestation. This is the caterpillar of a moth that lays its eggs on the leaves and, as they grow and moult, they burrow into the space between the upper and lower leaf surfaces. Interestingly, specimens of the infestation have been found, unrecognized, in herbarium specimens from the 19th century but it was only formally described, in specimens from North Macedonia, in the 1980s. It has since spread out through Europe arriving in London by the beginning of the present century and spreading through England since then. The moth has several generations each year, so you see various phases of the infestation at the same time on one leaf. They range from early small pale patches, through dead brown patches to completely dead leaves. One generation

hibernates through winter to re-infect in spring. Although the caterpillars are eaten by birds and affected by parasitic wasps, their numbers are huge. The European species seems to be more susceptible and most of those trees in Battersea Park have almost totally brown leaves by August. While they seem to start off well again, in spring, flowering and fruiting the next year, they must be somewhat weakened after ten or twenty years.

It may be coincidental, but the trees seem also to have become more susceptible both to bacterial and fungal infections (bleeding canker) which can damage the wood enough to bring them down (most recently in the subtropical garden) and kill them.

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<sup>1</sup> [batterseapark.org/trees-2](http://batterseapark.org/trees-2)

<sup>2</sup> The so-called doctrine of signatures, by which herbs show their medicinal function by means of a sign incorporated in their anatomy.

<sup>3</sup> Aesculus to the Latin speaking Romans was actually the Durmast or Sessile Oak...one of the two English native oaks ... 'Sessile' because its acorns sit with the base of the cup directly on the twigs, with no stalk. Linnaeus was prone to appropriate names used by Greek and Roman naturalists for quite different species.

**Figure 1, opposite** European Horse Chestnut, *Aesculus hippocastanum*:

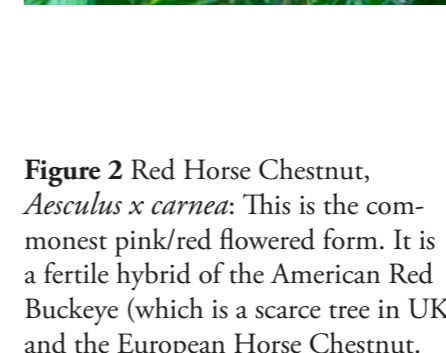
**1a** Leaf usually has seven leaflets in 'palmate' shape (but here eight!)

**1b** Flower panicle or 'candle'

**1c** Leaf miner damage showing various ages of damage from early white patches to dead leaf sections. This European species is noted for its sticky buds. In most American species they are much less, if at all, sticky.



**2a** The leaflets are 'crinkled' compared to Fig 1a and the toothed leaflet edges extend around the whole margin. Also, there are usually only five leaflets.



**Figure 2** Red Horse Chestnut, *Aesculus x carnea*: This is the commonest pink/red flowered form. It is a fertile hybrid of the American Red Buckeye (which is a scarce tree in UK) and the European Horse Chestnut. A number of these trees can be seen along the riverside walk.



**2b** The seed capsules are hardly spiny at all compared to *A. hippocastanum*.

**Figure 3** Yellow Buckeye, *Aesculus flava*: This species is originally from Eastern USA. There are number of these trees to the east of the pagoda.



**3a** The flowers are more tubular with fused petals compared to 1b.



**3b** The leaflets are long and tapering to a point.



**3c** This species does not do very well from seed so specimens in the Park are grafted onto European White Horse Chestnut stocks. Contrast the leaves on this lower trunk with 3b.

**Figure 4** Californian Buckeye, *Aesculus californica*

A pale flowered American species which can be seen just north of the cricket pavilion. It is not common in the UK. The leaflets are small and glossy and the flowers, which do not appear until May, are fragrant. Do note that the leaflets are on definite stalks (circled); a feature shared with the Indian species but not with the others shown here. It is unusual for a Buckeye in having sticky buds like *A. hippocastanum*.

