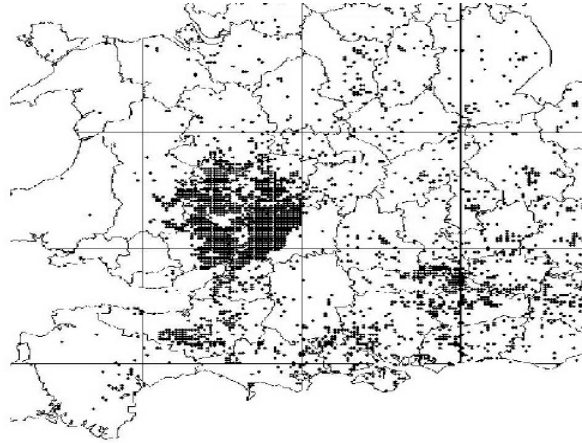


The need for better mistletoe management in orchards

Background information

Mistletoe, hemi-parasitic on trees, is rare in most of Britain. But in the Three Counties – Herefordshire, Worcestershire and Gloucestershire, plus parts of Somerset, it is surprisingly common.

It grows best in open 'parkland' habitats, and its favourite host is apple – so most British mistletoe occurs in orchards and gardens, where there is a tradition of seasonal harvesting for Christmas use.



Orchards are common throughout the 3 counties area - so what is the problem?

- Loss of traditional orchards = reduction in mistletoe habitat
- Neglect of mistletoe plants on remaining trees = significant risk to health of both tree and mistletoe – and eventual loss. [This neglect is sometimes a misplaced benign neglect that assumes that no management is good management – this is not the case]
- Preferential cropping, at Christmas, of only the berried female plants, leaving the 'valueless' non-berried male plants to gradually dominate the tree. [This is another form of neglect, which results, long-term, in even less management, as the berried plants become proportionately fewer]
- Relatively few 'new' traditional orchard schemes actively including mistletoe in their management aims.

Why bother?

- Key part of cultural heritage of orchards
- Potential source of seasonal income at Christmas
- Biodiversity value – mistletoe supports 6 specialist insects and provides berries/shelter for particular birds

More background in the paper overleaf...



Mistletoe – an Ancient Specialist of Orchards and Groves

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Abstract

Mistletoe, *Viscum album*, is Britain’s sole representative of a large family of tree parasites. Steeped in folklore since ancient times, and with myriad uses (it’s not just for Christmas!), it is also a distinctive species of orchards, avenues and woodland margins.

Despite occurring sporadically across the whole of southern Britain, most of the UK population is concentrated in the south-west midlands and has a very unusual host and habitat pattern. The favourite host tree, by far, is cultivated apple in orchards and gardens, followed by poplars, limes, willows and many rosaceous shrubs in similarly open habitats – hedges, watersides, parkland etc. Despite being strongly associated with trees, this is not a species of woodland.

European distribution and habitats are similar – with a peculiar distribution across northern Europe, and the same pattern of host preferences. The ‘natural’ (i.e. pre man-made landscape change) distribution of mistletoe is not known, but it would probably have been restricted to scrubby cliff-edge vegetation and river corridors.

The plant has had huge cultural significance since ancient times – helped by its distinctive forked-branching, spherical growth habit, evergreen foliage and white berries (it is our only native white-berried species). Such a plant, growing as an evergreen on otherwise deciduous hosts, would clearly attract attention!

There are Norse, Greek and Roman mistletoe traditions, but the most relevant to these Proceedings is the Druidic link – which includes mid-winter worship and harvesting of mistletoe from oaks (a rare host for mistletoe, and especially valued by druids) in druidic Sacred Groves. This tradition, though largely lost in

time and reinvented in the eighteenth century, would seem to confirm both ancient use of mistletoe and contemporary occurrence in ‘groves’.

The species has remained closely associated with the mid-winter solstice ever since – its use developing into a kissing custom in Britain at Christmas, and as a symbol of peace and good luck in Europe at New Year. There are many other uses and traditions – including ongoing development in medicine and an unusual period as a major symbol in European art nouveau. New traditions, and re-inventions of old ones, occur regularly. Recent examples include the Tenbury Wells Mistletoe Queen, and National Mistletoe Day on the first of December, both established in the last five years.

But what of the plant in biodiversity terms? Is it ‘just’ a parasite that adversely affects the host? Actually each growth can be considered a miniature ecosystem, with several obligate mistletoe insects, ranging from sap-suckers to beetles, and including one bug that specialises in feeding on a mistletoe sap-sucker. A moth, the Mistletoe Marble Moth, is now a UK BAP Priority species. Further mistletoe insects occur on continental mistletoe – and more of these may be recorded in Britain in due course. The species is also of significance for birds – particularly the Mistle Thrush, a specialist mistletoe feeder, and one of the few birds that ‘recognise’ white berries as edible. Another is Blackcap, whose over-wintering populations are key mistletoe vectors on the continent. Increasing numbers of over-wintering blackcaps in Britain have the potential to alter mistletoe distribution here.

The orchard connection, and the recent significant loss of traditional orchards, has led to fears that mistletoe may also be declining. A national public participation survey in the 1990s

enabled a reappraisal of distribution and hosts, discovering more occurrences in gardens but confirming, at least anecdotally, loss in orchards. The species itself is probably not in danger but the harvestable populations (in orchards) may be significantly threatened.

The implications of this are difficult to assess, but the 1990s work has led to several other new initiatives. These include biodiversity-led projects – such as the London Mistletoe SAP to establish new mistletoe populations around London. This has similarities to projects in some other European cities (e.g. Hamburg and Brussels) where, like London, mistletoe is outside its core range but has been encouraged historically into urban parks and trees. Other spin-offs include new regional surveys such as the winter 07/08 Norfolk Mistletoe Survey, and a reassessment of the 1990s survey data is planned for winter 08/09.

Some mistletoe initiatives also aim to assess distribution of the obligate insects. These are not yet well developed but may grow following the 2007 adoption of the Mistletoe Marble Moth in the UK BAP.

A growing and urgent need is to gain better understanding of how and where the plant grows, especially in the orchard context, where more sustainable husbandry and harvesting is needed. The problem is two-fold: 1) a continuing decline in numbers of traditional orchards supporting mistletoe, and 2) poor management of remaining supplies in surviving orchards. It is difficult to assess the extent of either problem, but both seem very real, and a threat to long-term supplies, both in Britain and abroad.

Tackling the first issue – the loss of suitable orchards – must involve developing closer links to the conservation orchard movement and encouraging active planting and tolerance of mistletoe in new and replacement orchards. Not all are suitable of course – half-standard trees are less viable than full standard trees, and the small bush orchards have no value at all. Projects within the core distribution area (Herefordshire, Worcestershire, Gloucestershire,

North Somerset) are likely to be more successful than those outside (e.g. Kent, Cumbria).

For the second issue – poor management of remaining stock – we firstly need to acknowledge that mistletoe is a parasite and will affect fruit yield. The traditional harvest for Christmas was, effectively, also the mistletoe control process – taking enough off the trees to limit tree damage but enabling enough to survive to ensure another Christmas crop next season. There is no documentation of this technique, but it appears to have been largely lost, even in core mistletoe harvesting areas like Tenbury Wells.

Current harvesting practice seems, in the main, to be limited to old and somewhat neglected traditional orchards. As much berried mistletoe as possible is pulled down, even to the extent of detaching whole host boughs, but leaving any berry-free material behind. The net effect of this, over a few years, is that male (berry-free) mistletoe plants remained uncropped, and grow unchecked to a point where they dominate the apple tree and accelerate senescence and death. This simply accelerates the loss of both orchards and mistletoe, especially if the orchard is already suffering neglect. It sometimes, even before that point is reached, leads to dismissal of both mistletoe crop and apple trees as having no remaining economic value – as the mistletoe no longer bears berries and the trees bear few apples. (There is also some evidence that some (non-farming) orchard owners see their mistletoe as a curiosity and a rarity, and they don't want it touched – leading to a similar dominance-overgrowth-senescence effect but with male and female plants.)

A new, sustainable harvesting technique needs to be developed to ensure that both male and female plants are cropped/pruned appropriately each year. This would be a long-term project – significant remedial management of mistletoe-dominated orchards would be needed as well as communication of a sustainable technique. Hard data on the cropping value of mistletoe would also help.

There is no formal action on this front yet, though I am working up ideas with contacts in Tenbury Wells, the centre of the UK mistletoe harvest and trade, as well as with orchard owners further south in Herefordshire and Gloucestershire.

**Contact information
overleaf**

Contact information:

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- Conservation & Control
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(currently working, in 09/10, with Tenbury English Mistletoe Enterprise – TEME – who are seeking to build long-term relationships with orchard owners with a view to better, and sustainable, mistletoe management.

TEME harvest and manage mistletoe during the winter months, aiming to reduce overgrowth and restore a balance of male and female plants for the orchard owner and to take a mistletoe crop for TEME's use in the Christmas season)