A layman's life-changing adventure with arbs and some views on arboriculture

A Ted rant

Ted Green, Fungi First

ANCIENT TREE FORUM

This article is provided by the Ancient Tree Forum, which champions the biological, cultural and heritage value of Britain's ancient and veteran trees, and gives advice on their management at www.ancienttreeforum.co.uk.

My adventure with the tree world started in 1942/43 as a small boy burning lop and top, using a small hand-axe and getting in the way of British tree-cutters too old to go to war and young Canadian lumberjacks over here to help the war effort. In a time of rationing I feasted on grey squirrel cooked 'à la Canadien'.

The Brits used a very wide crosscut saw and the Canadians a much narrower one. This was the only difference in how they felled a maiden oak, and both saws made a wonderful singing noise. After trimming off buttress roots using axes sharp enough to shave with, they knelt down and started cutting with a beautiful steady rhythm. At the first crack they stood up and in went two wedges. Then they began sawing again. At the second crack they stood up again and banged the wedges in. Then the third crack and the tree went over. Today we need ear defenders so no tree worker will ever hear the third crack – which was perhaps my first tree observation! Is it an observation that could be used in modern arboriculture and forestry now hand tools are becoming popular?

Fungi first

In the mid-1980s, having gained a healthy respect for fungi and their associated micro- organisms in the living world and also very aware of the work of Alan Rayner and Lynne Boddy, I got quite a shock when I found out how unaware arbs were of the real, and many would say positive, roles of fungi and their associates in relation to trees. Many now consider this a co-evolutionary relationship. After all, Rayner and Boddy had published landmark scientific publications on fungi and the biology of decay. Also explaining Shigo's wall four in 1982. So it frightens me 30 years later to find people are still unaware of this explanation and it's incredible that it's not being taught even today.

Round about the same time, I met Jack Kenyon and James Boyd, lecturers from Merrist Wood. James shouted at me, 'The trouble is, you haven't talked to arbs, Ted!' For my part this was an incredible and life-changing experience. My first one-to-one meeting with David Lonsdale finished with him saying, 'I hope you don't think this has been a one-way discussion.' What a statement to spur me on! Of course there are others who now rank amongst my best friends who have all played their part in my learning curve and my adventure with arbs.

Around this time (the mid-1980s), after surveying 7,000 mature and ancient oaks for their biological importance and looking at hundreds of other trees of various species, I developed a layman's view of the biology of hollowing as a perfectly natural process that could be a simple strategy for survival. This view was strengthened by the 1987 hurricane. In a survey at Windsor of 900 fallen trees over 60cm dbh and with limbs over 20cm there was not one hollow tree or a hollow limb on

A 'must see tree' for arbs. An Eiffel Tower oak tree, standing on its buttress roots and completely hollow. Open grown for many centuries with a 35m crown spread and subject throughout its long life to a multitude of hurricanes and high winds. Debate!

the ground. Discussing this with groups of arbs was encouraging: nobody laughed! They all listened and considered it from their own point of view. At this point arbs gained my deep respect – and still have it. I should add that I would now include in this group other people in the tree world, especially several foresters.

My adventure in the tree world continues unabated – to quote Alex Shigo, I continue to 'Go out and look.' Indeed the basis of science should start with observation, and of course science doesn't stand still. The Ancient Tree Forum (ATF) has at its core a group of tree people from several walks of life – including several thinking arbs – and as its name implies it is a debating society. A good example of this was when at one meeting a lady asked the question 'What is a tree?' I'm not sure she got a satisfactory answer, but it made the group think and remains unanswered to this day. As I pointed out, in debates with arbs, nobody laughs: opinions are expressed, information and experiences considered. We have moved on some aspects of arboriculture, especially when it comes to observing ancient, veteran and over mature trees where the natural ageing processes are allowed. My words 'Growing downwards' can describe this process and are often now applied in their management. As a pressure group in the tree world, the ATF is recognised as punching far above its weight.

Looking to the positive

Obviously fungi are often central to my adventure and debate, and changing ingrained negative attitudes is an unending struggle. Alan Rayner said, 'We are all looking for black and white answers to grey questions.' How can we at least partially respond to this? We could start by changing the vocabulary we use to describe the actions between some organisms and trees. A good example might be to stop using the words 'disease' or 'pathogen' for the action of fungi and other micro-organisms decaying down non-living (dead) wood inside and on the living tree. Understanding that most of these actions are perfectly natural at some stage in a tree's life and replacing a negative word such as 'infect' with a positive one like 'colonise' might help the change last century's entrenched, outdated views.

Perhaps an even more negative approach is describing fungi etc. decaying down non-living wood as 'infecting' and 'attacking' dead wood. How can a living organism be a disease of dead matter? Wake up, tree world! There's some flat-earth believers still out there! And this is still being taught in colleges and seminars, which is perhaps even worse.

However, on a positive note, as a layman watching the arb and tree world I know many no longer see the tree in isolation, like some great living organism capable of growing for perhaps a thousand years independent of other organisms. Today thinking arbs would say it reached a great age solely because of other organisms and to manage a tree in perceived good health requires us to manage the other organisms.

One of my phrases is: 'A tree is merely a unique dynamic individual support system for fungi and other micro-organisms.'

This is not, of course, to detract from the work of the great communicators Alex Shigo and Claus Mattheck. In fact the tree world is blessed with several people capable of explaining information in simple, non-scientific, interesting ways. Alex Shigo's work lives on and Claus Mattheck's biomechanical studies never cease to increase our knowledge and understanding. But what about Rayner and Boddy's work on latent fungi and wood decay; and Read and Merryweather on mycorrhizal fungi? Why aren't their names up there with Shigo and Mattheck? The time has long past to ignore their works. Why not have a whole year of raising the importance of their work? 'A Fungi-First Year'.

Saving the soil

Neville Fay of Treework Environmental Practice has already held seminars on the world of the soil, trying to raise the profile of the fundamental importance of our soils and micro-organisms to trees. The AA Conference this year also featured presentations on the rooting environment. After all, some might say, half the tree is underground anyway and staring into the crown in most cases is telling you what's going on underneath.

The importance of trees to the environment is widely recognised, so raising awareness of the vital part trees and their associates play in the soil is adding another string to their bow. For example, society and the media talk of flood water and show pictures of people sweeping mud from their houses. Change the words 'flood water' to 'flood mud' and you have a farming problem not an engineering one. Tackling it would lead eventually to positive sustainable systems and prevent agricultural soil fertilising the sea. Add trees and woodlands and we would be conserving the nation's soil. Wherever possible a photo should be used of the

Ancient beech covered in fungal brackets.

River Wye in full flood, its water the colour and consistency of a mug of hot chocolate, illustrating soil and wasted fertiliser on its way to fertilise the sea. Then the public and politicians might take notice.

Our soils are fundamental to our nation's survival and we do very little to prevent their loss and degradation. The tree world should be a big player in shaping our nation's future.

Raising awareness of the plight of our soils is not confined to the conference centre. John Deakin, Head Forester of the Crown Estates at Windsor, has declared a 19ha area of woodland as the first forest and soil nature reserve in the hope that others will follow. Designated sites could be used for research and offer a baseline, which is obviously drastically needed. The detail, definitions and many other aspects of management (with perhaps grading values) are yet to be decided, but many would agree this work is long overdue. It lays down a marker, it helps to recognise the state and the fundamental importance of our soils, and it comes from the tree world and not other great users like agriculture.

The other initiative taken by the Crown Estates forestry department is creating an organic tree nursery. The plot is situated on a clear-fell site of commercial red cedar and has four remaining mature oaks, a sweet chestnut and a lime on its edges, the reasoning being that any mycorrhizal partners still present in the soil – especially on the oaks – will be able to readily colonise the saplings. Therefore when they are transplanted the saplings will not be literally bare rooted, but all their fine root hairs will have nice fat fingers of their mycorrhizal

partners, ready to combat the hostile soils they will spend the rest of their lives in. There is speculation that many new root diseases on our trees began after plants were infected in nurseries which use non-organic soil full of manmade chemicals devoid of any mycorrhizae or other soil-inhabiting micro-organisms. Mycorrhizae are seen as the tree root's first line of defence against pathogens, its biological control; the use of industrially manufactured fertiliser and perhaps herbicides, especially in commercial nurseries, is considered to deter mycorrhizal colonisation. In fact James Merryweather actually says 'Fertilisers kill trees!', meaning that for reasons still uncertain most mycorrhizae and other micro-organisms decline with the application of manmade fertilizers, pesticides and herbicides – presumably including fallout from aerial pollution. Today the tree world might be the first significant body to really point the finger at the aerial fallout of nitrogen or acidification of the land and sea. Why is it yet to be recognised that on land literally the root cause of all our trees being under stress through the effects of the decrease in their mycorrhizal partners is the result of increasing pollution of the soil? In other words should the plight of our trees be recognised as a warning, like the canaries were to miners? Stress obviously usually means that pests and diseases follow, and although we may have to treat every tree species differently we must consider any form of pollution as bad news.

Our great adventure

To me what is exciting about the tree world is you can say it's a great sisterhood and brotherhood of people sharing and explaining ideas and experience. Obviously when groups of arbs meet, health and safety will always be in the discussions, often with another 'chestnut', Meripilus! How many times have you heard an arb who does not share that outdated notion that you have to fell a tree because it has Meripilus fruit bodies around its base say 'I've watched that tree for several years and it still has a healthy crown in spite of Meripilus around its base'? It might be that Meripilus is just decaying down the non-living wood. After all, trees as they age develop non-living wood in their crowns and especially in their centres and presumably in their roots. Limbs die so why not roots?

It is people going out looking, forming their own opinions, debating and asking questions who continue to make the arb world an interesting place. In my adventure it soon became clear that – above all – arbs care, and I have watched arboriculture come of age: a true profession in its own right.

Science has never stood still and we must sweep away the old entrenched views and dogma of the last century. We don't know the answers, but the very nature of the arb world means we can all participate in the great adventure. When asked whether we are going to write a book, the reply is, 'Yes we are, but we are still only designing the dust cover. There's so much to discover.'

In correspondence with Claus I end saying 'Stay seven years old. Asking questions.' Alex said, 'Go out and look.' And I say, 'Seeing should not necessarily mean believing.' Especially fungi.

News update

Join us in the spring

The ATF's next field visit will be to the Burghley Estate in Lincolnshire, on 10 March 2016, and bookings are now being taken. The gardens and parkland at Burghley were largely designed by Capability Brown in the 18th century, and there will be an opportunity to explore his legacy during this 300th centenary year. Amongst the technical topics we are likely to discuss will be best practice for managing ancient and other veteran trees in high-use areas or during events, and we will consider the use of treatments to relieve compaction and of root radar exploration. Go to the events page of our website for more information and details of how to book.

Watendlath, Cumbria.

Local ATF groups

A number of new local and regional ATF groups have formed around the UK, the most recent being Ancient Tree Forum East Anglia. This group had its inaugural meeting in October, at Captain's Wood, near Sudbourne in Suffolk. The event was incredibly popular, with 54 people coming along to the woodland, a remnant of medieval wood pasture that once covered many hundreds of acres and has a treed history dating back over 1,000 years. ATF groups in Cornwall, Devon and Wales are all actively organising field events, and following our field trip to the Lake District, an ATF Cumbria group is now forming. Go to the ATF website to find out how to get involved in a local group.

Poetry and pollards in the Lakes

In early October, the ATF's autumn event was held at Borrowdale and Watendlath (pictured) in the Lake District, where highlights included the ancient yews made famous by William Wordsworth. Much of the discussion focused on management of the many ash pollards in the area, and their potential devastation by Chalara ash dieback. Read more in our latest blog.

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