Woodland Heritage 2014

88 pages of topical articles about forestry, woodworking, research and education

SPECIAL ANNIVERSARY EDITION

Patron HRH The Prince of Wales

Our vision: To maximise the economic and environmental value of trees and promote wood as a renewable natural resource.

We are 20 Years Old !

At the age of 20 I think we are right to take stock and to celebrate with our members any achievements made and milestones reached. We have tried positively to influence the way trees are planted and managed in this country. We have looked forward by supporting improvements to the seed provenance of our important native broadleaves. In recent years we have invested heavily in research into tree diseases, in particular into the threat of AOD (Acute Oak Decline) in partnership with a wonderful team at the FC Forest Research led by Dr Sandra Denman. Please do read an account of the team's progress on pages 20 to 23.

However, as well as investing adequately in research to combat diseases attacking so many of our tree species, as a country we also need to take measures to stop the importation of further diseases. We should tightly control plants and soil entering the country, as other nations legitimately and prudently do. Otherwise, it's akin to complaining about burglary and then leaving all your doors open. As an island we have inherent advantages and we should be making the most of this. Let's control our own plant health, as far as is possible?

Most importantly in the complex woodland mix, we have also invested in training and educating the next generation of Woodland Heritage Champions. We have sent explorers quite literally across the world to study forestry best practice and to bring the knowledge home to share *(our Garthwaite Bursaries)*.

Further, our *'From Woodland to Workshop'* course (W2W) is unique in uniting the tree grower with the wood user, linking up the wood chain. Introducing the forester to the cabinet maker ... how do you select the species mix? What spacing for planting? How do you dry timber properly? What wood carves well? How do we hand woodland knowledge, particularly in relation to growing quality broadleaf trees, down to the next generation? Well, a very good start would be to turn to page 12 and start to read about the work and philosophy of the late Talis Kalnars MBE, as it is for me truly inspirational. I'd like to think it's pure Woodland Heritage.

I believe that of all the work we have done over the last 20 years, the greatest legacy and hope for the future rests with our younger folk, the Woodland Heritage Champions and others, who must guard and shepherd the future. So far, over 160 individuals have passed through the W2W courses we've run since 2008. Interestingly, on the last course and for the first time, the chaps were outnumbered by the fairer sex!

Some of you know that I'm fond of quoting an ancient Greek proverb, *"A society grows great when old men plant trees whose shade they know they shall never sit in"*.

Well, looking at the participants on our last W2W course (see pages 62 to 63) it's not just going to be old men doing the planting. Thankfully!

Lewis Scott

HRH The Prince of Wales presents his trophy to Nina Williams, the top student from our 2013 W2W courses.

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Our 2014 Field Weekend

PERTHSHIRE

Having spent our 2006 weekend in the Scottish Borders,
we now return to admire "The Big Tree Country" for which this area is famed.

Friday 13th June – a.m.

The Hermitage and Craigvinean Forest near Dunkeld

We will be led by Charlie Taylor, the Forest District Manager, and will see some spectacular trees and discuss their Continuous Cover Forestry programme.

Friday 13th June – p.m.

The Big Tree Trail on the Dunkeld Hilton Estate

We will be led by Tom Christian from the Royal Botanic Gardens, Edinburgh, to see many "champion" and specimen trees beside the River Tay in the restored grounds between the Cathedral and the hotel.

Saturday 14th June

The Bolfracks Estate, near Aberfeldy

By kind permission of Athel & Annie Price.

We will witness fascinating forestry on a difficult terrain, which has been rewarded by winning the prestigious Hunter Blair trophy "for silvicultural excellence". We will finish by having tea in their acclaimed gardens.

Sunday 15th June – a.m. only

Murthly Castle

By kind permission of Mr Thomas Fotheringham.

A two-hour "Grand Finale" – seeing one of Scotland's finest landscapes. Towering trees in a perfect setting beside the River Tay, leading up to the castle and chapel.

Members and their guests will be very welcome

To book, please contact Woodland Heritage on 01428 652159
or enquiries@woodlandheritage.org.uk

Our 2006 visit to the Scottish Borders.

Felix Dennis

WINNER OF THE 2014 PETER SAVILL AWARD

Felix Dennis is a dedicated planter of trees, as well as one of Britain's most successful entrepreneurs and best loved poets. He has featured in numerous other magazines and newspapers discussing his passion for maintaining British Woodland for years to come.

In 1973 he launched Dennis Publishing and pioneered personal computer magazine publishing in the USA and UK. Today the business is responsible for publishing over 50 magazines, websites and mobile sites. However, it wasn't until 1995 that he planted his first small wood near Dorsington, Warwickshire, and subsequently conceived the idea of establishing a large native forest.

From this, The Forest of Dennis Ltd, a registered charity, was founded in 2003, changing its name to The Heart of England Forest Ltd in 2011. Felix and the charity have worked together ever since on this project with the aim of planting and preserving the largest native broadleaf forest in the heart of England. They are currently planting around 300 acres per year, primarily made up of native trees such as Oak, Ash, Lime and Birch, with smaller quantities of Wild Cherry, Field Maple and Wild Pear, to name but a few.

Felix says, "Successive governments have excelled at talking about tree planting for generations, but their record of achievement as far as native woodland goes is dismal. The British countryside has just about Europe's lowest density of native high tree cover, less than a quarter of that in Italy, France or Germany. We have denuded our countryside of trees over hundreds of years. It is time to put things right, both for our own sake, and the sake of the soil, our rivers and streams, environmental biodiversity and those creatures with which we share the land."

FRIEND OF THE HEART OF ENGLAND FOREST PROJECT
www.heartofenglandforest.com

In September 2013, The Heart of England Forest Project planted its millionth tree – a huge landmark for the project and a true testament to the charity's aims and objectives.

"What men call impossible, very rarely is so."
John Evelyn, the father of British forestry

Felix has subsequently pledged his fortune to achieving a goal, which many have expressed as 'impossible' in an intensely farmed and crowded part of England. He has branded the idea 'The Impossible Dream', which he and the Heart of England charity will ceaselessly strive to achieve.

www.heartofenglandforest.com
info@heartofenglandforest.com

I first met Felix Dennis many years ago when I started out as the Director of the hugely ambitious idea that was to become The National Forest. The site, which now spreads over 200 miles of the Midlands, was selected in 1991 and one of our first jobs was to enlist support. This involved persuading local people that a new forest would bring benefits to their area. As importantly, it meant seeking Government backing for the Forest's creation and to their great credit that is exactly what all subsequent administrations have done. As a result The National Forest is growing impressively and now boasts eight million trees and involves thousands of people in its creation.

We also wanted to involve the private sector (personal and commercial) and it was suggested that Felix might be interested. What fun the subsequent lunch meeting was! I couldn't be sure if Felix was taking the mickey or genuinely interested. As it turned out it resulted in a generous donation but also the beginnings of a fierce rivalry. His own forest was but a twinkle in his eye at the time but soon it was underway and we were put under constant challenge as to whose forest was biggest and best!

That is Felix – his ambition for his Heart of England Forest is unbounded. As an individual's contribution to the country's woodland cover it is impressive. It will bring beauty, joy and the enrichment of our environment. That must be worth celebrating with the giving of this prestigious Woodland Heritage Peter Savill Award.

Susan Bell OBE, WH Trustee

The Peter Savill Award

For a significant contribution to the British Forest Industry

The Prize

Each year Woodland Heritage awards a prize to recognise the contribution of an individual who has significantly benefited British forestry.

Criteria

The contribution to forestry made by the selected individual must be in sympathy with the objectives of Woodland Heritage, and in one of the following areas of forestry: silviculture; research; marketing; wood processing; education.

Normally the prize will focus on a contribution to one of the above with an emphasis on Britain, broadleaves and lowland forestry, although not exclusively so.

The 2013 Winner Miles Barne

Bede Howell (left) presents the trophy to Miles Barne.

A special presentation to Sydney Draper from the Trustees of Woodland Heritage

Joining us in 1998, Sydney Draper has rarely missed coming down from Scotland for our Field Weekends and it is always a close run thing between him and Gavin for our 'Furthest Travelled Award'. Sydney's wise words and generous support for our work has always been much appreciated and as a small token of our esteem he was presented with a fine 'Richard Chapman' turned Ash charger.

Sydney may well correct me on this, but here goes. His forestry career spans some 67 years. It has taken him worldwide working for the Forestry Commission, the Colonial Office and the World Bank. In 1987 he ceased working for others and ever since has been, in his words, *"…endeavouring to renovate the rump of a small estate." "Growing and working with trees gives such a lot of joy and solace; I suppose some of us will do it even if it costs a pound or two."*

My friend, we very much look forward to your company again in June, but due to our Scottish venues, I doubt very much if the bottle of bubbly will have your name on it this year!

Lewis Scott

Welcome to our new Trustee

Dr Hugh Williams, BA, MSc, PhD, FICFor

I was born in Lydney and raised in the Forest of Dean, which could account for my interest in trees and forests.

I studied geography at Exeter University and then, after working in the USA and visiting some of its superb National Parks, lived and taught English in southern Japan. It was here, living on a small and heavily wooded island south of Nagasaki, that my thoughts regarding my career were formed.

I returned to the UK and went to Bangor University where I studied on the Environmental Forestry course. Time was then spent learning the ropes of farm forestry schemes and nursery management for Norfolk County Council.

Subsequently I was fortunate to go to Reading University where I gained a PhD. My research involved the use of satellite data to quantify forest biomass and required extensive fieldwork in Thetford Forest as well as visits to the magnificent Pine forests in Les Landes (Bordeaux) and the tropical forests and rubber plantations in Malaysia.

This work led to participating in a World Bank consultancy project to investigate the extent and availability of woodfuel for N'Djamena, Chad. This was an abrupt lesson in the harsh realities of woodfuel, poverty and survival.

I then established the England office of a forestry consultancy business before joining the ***National Forest Company*** in 1997. I was involved with woodland creation on a landscape scale. The thrill of creating and managing new woodlands remains to this day, as was the privilege of joining such a vibrant team and being part of a project that was, and still is, ground breaking, at times controversial and always exciting.

I am very pleased that The National Forest Wood Fair – I like to think I played a part in its inception – is still going strong. It has made a significant contribution to establishing relationships between woodland contractors, woodland owners and the customers who will both buy products from the woods as well as enjoy walking in them. As an aside, I would thoroughly recommend the Wood Fair – it's on the Bank Holiday at the end of August!

I joined ***Forest Research*** in 2007 and I am now the Head of Centre for Research Services. My team of 55, located around Scotland, England and Wales, provides the essential services and support for Forest Research and its customers. I am responsible for leading and managing teams in communications, business development, running Alice Holt and Northern Research Station facilities, and the technical support teams that establish, manage and record research experiments and work on a number of external contracts – such as gathering data for tree disease monitoring and management.

I am also a member of the ***Forest Research Executive Board***. It's a very different role to my previous work, with considerably less time spent in the forest. However, it has opened my eyes to the clear and present opportunities, and risks, that our trees and woodlands face, as well as being part of an organisation that is the source of much of the evidence that we need to consider and use to effect practical solutions.

I am a Fellow of the Institute of Chartered Foresters, graduated from National School of Government's "Leaders UK" course in 2010 and have a Diploma in Management (Derby Business School).

I am delighted to have been invited to become a Trustee of Woodland Heritage. We are by nature a resilient bunch, who have an ingrained sense, value and appreciation for our trees and woods and are also aware of the risks and opportunities they face. Woodland Heritage has ambition and wants woodlands to be much better – more of them, better managed, more profitable, more enjoyed and more inclusive. I look forward to contributing to that goal.

NINA WILLIAMS

WINNER OF THE 2013 PRINCE OF WALES AWARD

In 2013 Woodland Heritage ran three 'Woodland to Workshop' courses, meaning we had a bigger pool of candidates from which to choose The Prince of Wales Award winner; not that this made the task any easier! The calibre of the attendees on our courses is very high anyway and to single out an individual is difficult. Nevertheless, the W2W tutors were unanimous in the selection of Nina Williams for this prestigious award. Nina showed such enthusiasm for every element of the course programme and we believe she will diligently apply what she learned in her role as Forestry & Woodland Development Officer for the South Downs National Park Authority. Congratulations Nina from all of the W2W tutors!

Geraint Richards

I am relatively new to the forestry sector having recently graduated with a Masters degree in Rural Land Management. Prior to that, I served as an officer in the Royal Engineers for ten years. I now work for the South Downs National Park Authority as their Forestry & Woodland Development Officer. It is a diverse and challenging role, the National Park has over 38,000 ha of woodland, 45% of which is Ancient Semi Natural Woodland. In terms of land use this equates to nearly a quarter of all land within the Park.

I work as part of a wider partnership between the South Downs National Park, Forestry Commission, Woodland Trust and Wildlife Trust. The partnership has been established to bring more woodlands within the National Park into active management. It aims to coordinate the efforts of key organisations and authorities, and work closely with landowners and local forestry enterprises to create new opportunities and to respond to emerging markets. This is a collective landscape-scale approach that will encourage networking for environmental, social and economic gains and champion local timber.

In order to better understand the issues facing the local timber supply chain, a colleague and former student of the course recommended the Woodland Heritage *'From Woodland to Workshop'* course to me. I hoped to improve my knowledge of the broadleaf timber supply chain. This course far exceeded my expectations. It offers a unique training experience and an opportunity to learn from the practical experience of industry professionals. I know of no other course which offers such direct access to experienced professionals.

I have used the experience and knowledge gained from the course in my efforts to map the forestry enterprises and timber supply chain within the National Park. By understanding the state of the woodland resource, and the forestry enterprises that use this resource, I hope to better facilitate the improved management of woodlands and ensure production of timber that can meet the needs of current and emerging markets. I am also exploring ways to improve the number and quality of local forestry enterprises through offering free advertisement forums and encouraging new entrants into the aging forestry sector.

I thoroughly enjoyed the course from start to finish, I know that Woodland Heritage endeavour to fill it with students with a wide range of skills and experience. I learnt a great deal from my peers and the engrossing open discussions that formed around the course content. The friendships and networks that are forged as a result of this course are an invaluable resource and one which I have called upon regularly since last year. I hope that my peers gained as much from this course as I did, and I cannot recommend it highly enough to anyone who wishes to develop an insight to the issues regarding production, processing and sale of broadleaf timber. This course delivers exactly what it says on the tin and so much more. Long may it continue to teach and inspire for years to come.

from woodland to workshop

Sir Bertie Ross

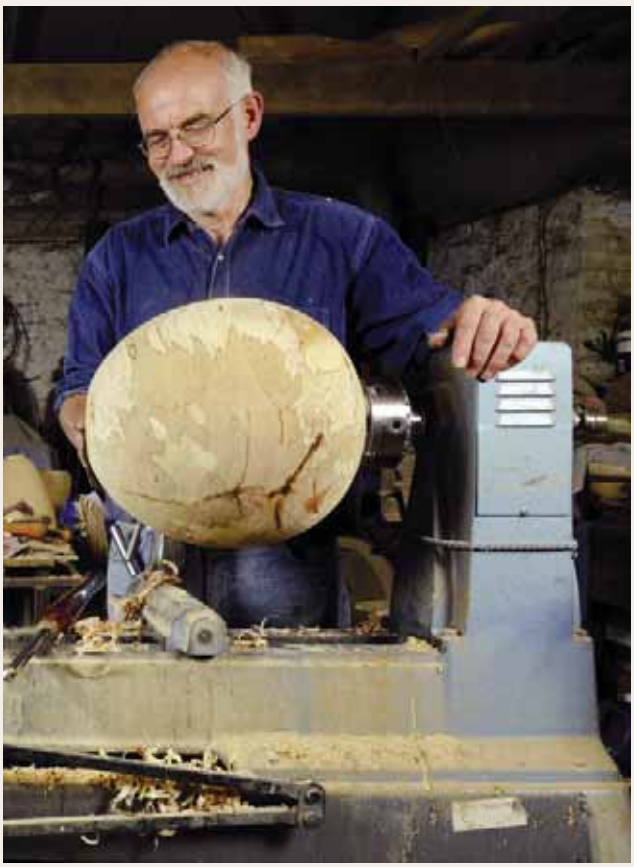
Sir Bertie Ross retired from his position as the Duchy of Cornwall's Secretary and Keeper of the Records in 2013. During his long term in this post he proved to be a great friend to Woodland Heritage, allowing the Duchy's estates and offices to be used as venues for our meetings and supporting attendees on our 'Woodland to Workshop' courses. Whenever we held a Trustees' meeting at 10 Buckingham Gate, Sir Bertie would always 'look in' and the warmth of his personality would be felt by all present. In recognition of the ally that Sir Bertie has been to Woodland Heritage, the Trustees felt it appropriate to make him an honorary life member and to present him with a superb bowl, as a mark of our sincere thanks. Thank you, Sir Bertie and our very best wishes to you for the future.

Geraint Richards

Sir Bertie's vessel is made from the Monkey Puzzle Tree – Latin name Araucaria. Richard Chapman, Woodland Heritage's ace craftsman, selected a piece with knots evenly spread around the circumference. He knew that he could leave the heart in the centre and use the knots to huge effect because the species is a very stable wood.

Now to the British association: "Whitby Jet" is the fossilised remains of Araucaria which can only be found in the cliffs and surrounding area of Whitby in North Yorkshire. It dates back to Jurassic times and was used extensively by Queen Victoria during her mourning period because it is literally jet black. It is still sold as jewellery today .

Richard therefore "ebonised" the main body of the vessel, giving it a striking jet black colour, but he emphasised the natural colours of Monkey Puzzle timber around the neck and base – and in particular, the golden knots which display so dramatically. ***www.rmchapman.co.uk***



Let's draw a line on badly planted trees…

by Mike Glover, Managing Director, Barcham Trees Plc

This wet and windy spell of weather has made it all too easy to see which trees have been planted too deep over recent years. I saw a Lime gently rocking in the soil yesterday, its trunk leaving an ever increasing hollow in the soil line, signifying that its root system is buried way below the correct level. It is widely recognised that planting trees too deep is a major cause for premature decline.

Tree roots need oxygen and water blended in measure so inevitably grow within the top metre of the soil. We tell clients buying a Barcham Tree to plant the container an inch proud of the soil line to allow it to settle back over time into the disturbance caused by digging the hole. Better to plant too proud than too deep!

Root balled trees present a real challenge. Cultivation and root balling in the field heave soil up the stem so that they sit several inches too deep to start with. Nurseries who containerise root balled trees heap compost on top of them and then landscapers use root anchors to stabilize them at planting. I reckon most root balled trees are planted at least five inches too deep and this is the chief reason for failure further on down the line.

Planting pit design is another area of concern. I speak to landscape architects who specify a standard 1.2 metre square pit, but why make it so deep? The tree will only settle into the disturbed soil, especially if dragged down by the force of a root anchor, with the roots ending up in a compacted soil profile with no oxygen to fuel them. Width rather than depth is what a tree needs.

A mature Oak with its wide root system on the surface as nature intended.

We are not alone in this. Professor Gary Watson, researching this problem in the USA, has coined the term ***'Root Shank'*** for the tubular stem of the tree below ground before the root system starts. Imagine a sumptuous red wine glass with a delicate stem, flat base and wide cup. This is a good way to picture a tree and how it stands firm. If its base isn't wide it blows over easily and if it is planted too far up the stem it rocks about in the soil.

The Barcham Line on a 12-14cm Alnus Cordata in a 45lt Light Pot. Note that the top of the first root is visible.

When we lift our trees from the field and containerise them, the top of the first root is no more than a centimetre under the compost level and for customers who specify, we then dab a paint line at the point the root flare leaves the compost. For the customer, if they can't see this paint line after planting, they know it is planted too deep! We call this ***'The Barcham Line'*** and hopefully it will become an invaluable aid to countering the annoying and self-destructing practice of deep planting.

Barcham Trees Plc,
Ely, Cambridgeshire
01353 720 748
www.barcham.co.uk
www.buythetreeyousee.com

Barcham
The Tree Specialists

John Make

Britain's renowned furniture designer

If the public likes trees and woodlands in the landscape, then we need to encourage appreciation of our wonderful range of indigenous timbers. Those who manage broadleaved woodlands in the UK are widely dispersed and lack the collaborative muscle to promote effectively the superior properties of their produce. Those of us who love both our trees and indigenous woods avoid the inferior character of imported alternatives.

It has been part of my mission to celebrate the properties of home-grown timbers through inventive design and fine craftsmanship and this article shows some of the woods we have chosen for a variety of commissions.

Our normal practice is to buy selected butts in the round and to oversee the conversion before air-drying in our own seasoning sheds. At any one time, we hold stock of about 100 trees providing a wide choice to offer clients. When designing any piece, it is likely that we will know which trees will be used, and any individual piece is made from a single tree, ensuring that the grain and colour are consistent. I like the idea of conserving the integrity of the tree in its new form.

The illustrations show pieces in Ripple Sycamore and Ash, Cherry, Holly, Oak, Elm and Bog Oak.

Cushions

'Cushions' is one of an edition of three chests with carved and hinged 'cushions' made from a single tree of Ripple Sycamore. The ends are constructed of end grain like a butcher's block so that the whole piece moves in harmony with changes in humidity. The base is Lebanon Cedar. The sculpting of the Ripple Sycamore creates a surface akin to a moiré fabric.

Flow

Of course, the chest of drawers is derived originally from a tree trunk and then the medieval chest. It has often struck me that we appreciate the idea of solid timber, but rarely give expression to it. By sculpting the surface, the whole piece is transformed. Unusually for a chest of drawers, the Ripple Ash runs horizontally around the four faces, matching at each corner.

Within the chest other indigenous woods are chosen for their best properties: Cedar drawer linings for its scent, Holly drawer sides for its pale colour and hard surfaces and runners of Hornbeam as it is self-lubricating.

Cabinets, chairs and tables each have distinct derivations and structural requirements. Cabinets protect and store things we value. Chairs need to reflect the body and provide support in the right places, but are most subject to stress and possible abuse. In contrast, tables provide a surface elevated from the floor.

peace OBE

shows us more of his latest creations

Herald

'Herald' was commissioned by the senior partner of an international property company. The recently granted coat of arms was carved in Holly, set into the grid of latitude and longitude lines of a Mercator globe framed by the Cherry-wood chair; all the curved components were built up of layers for greater strength.

Knot

An American client commissioned four 'Knot' chairs for his guesthouse. The requisite strength comes from the laminated Oak legs and arms. The 'cushions' and 'knots' are Burr Elm. The whole chair was bleached and washed producing a rugged texture on the Oak and in contrast to the silky smooth Elm.

Quadrofoil

The 'Quadrofoil' table was designed for a client in Texas. Made of 5,000 year old Bog Oak from the Fens with legs of cast and patinated bronze, it is an interesting reminder that parts of England had magnificent high forest, wrecked by devastating storms. These trees are discovered when farmers are ploughing, now some four metres below sea level. Totally saturated, the timber has been dried very slowly to minimise degrade.

Vault

Finally, 'Vault' was designed for a home in Cyprus. The top, three metres long, and 1.5 metres wide, is supported on legs that arch from end to end leaving uninterrupted space along both sides The cantilevered construction tapers to a slim edge making it more comfortable to sit at. The Oak was planted at Longleat in the 1740 and harvested in 1980, the 80th birthday of the late Lord Bath, who offered us the pick of the crop from a stand being felled to release an under-storey of Ash, as payment for a table we made for the Green Library.

www.johnmakepeacefurniture.com

An inspirational forester

"The productive capital of a forest is the forest itself. Clear fell the forest and you are destroying your own infrastructure that you have worked so hard to build up. Yes, you realise some money from the timber, but it's a one-off. And then you have to rebuild your capital from scratch. That's expensive and difficult because clearfelling has created a hostile environment for trees".

The speaker was Talis Kalnars MBE in an interview with Oliver Tickell in 1999. His wise words are worth recalling for young foresters today.

Talis was one of Britain's most experienced and successful "Continuous Cover" foresters, following a career as an independent forester in mid-Wales that started in 1959 with a close-knit circle of private and corporate clients. These included a dozen or so estates, many of whose woodlands he looked after for decades on end. *"I believe," he said to Oliver, "we should maintain the standing forest as productive capital and treat only the increment as income. Plantation forestry based on planting and clear-felling successive pioneer crops is unprofitable because it destroys its own capital. Clear-cut, as it is practised in Britain must be one of the least economic of all forestry systems."*

Following the "retirement" upon his 70th birthday, he looked after six estates as well as his own mixed woodland of 24ha over the border in England – and another, Ridges, a tenth of the size, that belonged to his wife which won the Forestry Commission's Merit Award in 1998 for "Imaginative forest management". He described this to Oliver as "a very mixed, uneven-aged and uneven-structured woodland", packing 13 conifer and 14 broadleaf species into its few acres.

For Talis, forest economics had to come first. "Of course my clients care about the environment, but they also need a positive rate of return from their woodlands. If they can improve the environment at the same time, so much the better. But the most important thing about my methods is that they are profitable. All my forests make money – they have to, or I would lose my job."

To demonstrate his methods, Talis took Oliver to a woodland that he had been managing for over 20 years, on a south-facing slope in the Dinam Estate in mid-Wales. Oliver was immediately struck by the sheer profusion of natural regeneration taking place throughout the wood. Broadleaf and conifer together – Norway Spruce, European and Japanese Larch, Birch, Rowan, Beech, Ash and Hazel – and how every age was represented from the youngest sapling through to mature forest giants. The contrast with other woodlands was stark. Most of Wales's commercial conifer plantations are dark, lifeless places, while in the typical Welsh oakwood hardly a single young tree can survive the combination of shade and sheep-grazing. But Talis's wood is positively exuberant. The visual effect, with the summer sun streaming through the canopy, was simply..... beautiful.

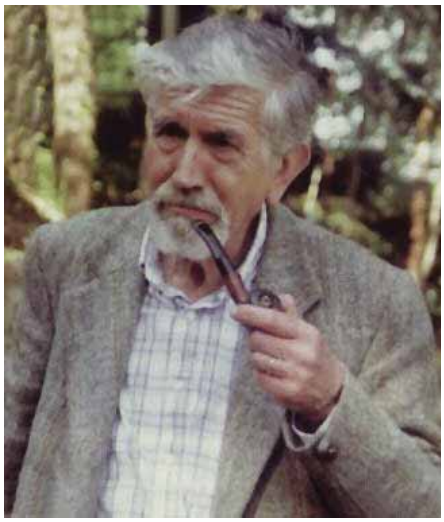
"Forestry is an art," Talis said. "Of course the art has to be informed by science – but science should never be allowed to prescribe. How you manage a forest comes down to personal judgement, based on your appreciation of the site and the trees that are growing there. Talis didn't like terms like 'block' and 'compartment', because they sounded so regimental and military – whereas you have to manage a wood holistically as everything in the forest has an impact somewhere else."

Part of the problem for forest science is that it cannot cope with the complexity of interactions in a multi-generational, multi-species woodland. *Talis was convinced that Birch assisted the regeneration of other species. "This idea is not supported by scientific trials, but my experience is that where there is Birch there is more natural regeneration of other trees, rather than of brambles and bracken. Maybe it's the dappled shade, or some chemical effect, or the mycorrhizal fungi around the roots, or some other reason I don't know...."*

Talis was a great supporter of mixed forestry in

general, as opposed to growing conifers and broadleaves separately. *"Conifers and broadleaves help one another. In winter, conifers maintain shelter, for example, and they help to keep temperatures up in the autumn so that the leaves stay on the broadleaves later in the year and photosynthesis goes on for longer. Then you get birds nesting in the conifers early in the spring, so they are there to eat the caterpillars when the broadleaves come into leaf. You get better sanitary protection as the spread of insects and disease is limited. And the diverse needs of conifers and broadleaves make for better use of soil nutrients and leaf litter. Broadleaves in particular help to maintain soil fertility and seem to stabilise conifers, helping them to reach greater age and size. Norway Spruce and European Oak work especially well together".*

Backing up his experience, he recalled Professor Lahde's research in Finland, which showed that 15% Birch in Norway Spruce leaves the Spruce yield unchanged. "You get 100% of your Spruce and you get the extra 15% of Birch as well. This is obviously a winning strategy. But we have been indoctrinated into the plantation mentality – for example, you get a set annual increment for an area, irrespective of the silvicultural system. This is only true in an even-aged monoculture. Factors such as light, temperature and moisture all affect productivity – and you can use all three in a mixed forest. Using its three-dimensional structure you can block off cooling winds, increase the effective area of sunlight, and increase the moisture in the air by recycling it through the leaves.



Another effect of a complex, mixed age forest structure is greater resilience against the wind. I have had one even-aged hectare plot completely demolished in a gale, when uneven-aged woods nearby were virtually unaffected. What it comes down to is that you have to see the forest as a community, complete with community support. That's why Spruce lives for 400 years in a natural forest, but only 120 or 150 years in a plantation, because it benefits from the support of the forest as a whole.

Talis warned Oliver that self-seeded trees performed better than transplants because they were "at home" in a way that planted trees never can be. "Transplants are like orphans, deprived of family support – a forest should work like a community, not an orphanage, nor an army." Nonetheless he accepted that there is a place for "clear planting" in order to establish a forest ecosystem in the first place.

He showed Oliver an area of 20-year-old Douglas Fir, planted in monoculture to suppress a thick growth of bramble and bracken scrub. "Now it is ready to go through conversion to a mixed age, mixed species forest. The trees are already marked for thinning and soon we will have other trees seeding in from the forest around". He pointed with pleasure to some Larch seedlings on the perimeter, hybrids between Japanese and European Larch, growing at different altitudes on the hill. "These are our very own hybrids and I am looking forward to seeing how they perform."

Selection of which trees to cut is always critical in guiding the long term future of the forest. One of Talis's principles was not to thin for its own sake or to "free up" good trees, but to remove stems that have poor form and which will never yield good timber. Then he would allow the well-formed trees to grow on until they have reached their target diameter – even then, he said that it was important not to take out too many trees at a time for fear of shocking the woodland system or exposing the trees to windthrow.

He pointed to an area across the valley, whose canopy was dominated by Larch. "When we thin this Larch we will remove no more than 20% by volume of the standing wood. And no more than 60% of the target dimension timber (in this case 38cm dbh) so as not to over-expose the wood. We will not cut out trees just because they are small, because to do so runs up high costs and gives no financial return".

"You could say that I am driven by greed and meanness. I am so greedy that I only harvest the trees that will make me money, and I am so mean that I do not want spend any money on planting trees, so I let them seed themselves. I have got two things to worry about: cost and revenue. I maximise revenues by cutting trees when they are at their most valuable, and minimise cost by using natural regeneration instead of planting, followed by years of weeding and beating up. Put these two together and net returns can be staggeringly different."

Further savings could be made by cutting down on other inputs. Talis never used herbicides or other chemicals, but the there was little use for herbicide under a continuous cover approach, in which weeds were controlled by keeping light levels too low for them to flourish. Nor did he use rodenticide to kill grey squirrels. Instead, he tolerated some untidy scraps of Sycamore, whose bark made "good squirrel fodder" which is preferred by the greys above that of

other species such as Beech and Ash. Add to that, the predations of Pine martens which flourished in his wildlife-rich woods and squirrels were not a problem.

Talis admitted that exceptions must sometimes be made to his approach – for example when existing trees are of the wrong species for the site. "Sometimes you have to change species. I had to remove all the Sitka Spruce because it was not wet enough for it – and it was not wind firm. We also took out all the Grand Fir because it produced poor quality timber. This was annoying because we had to replant at high cost and weed for four years to get the new trees established. But we really had no choice."

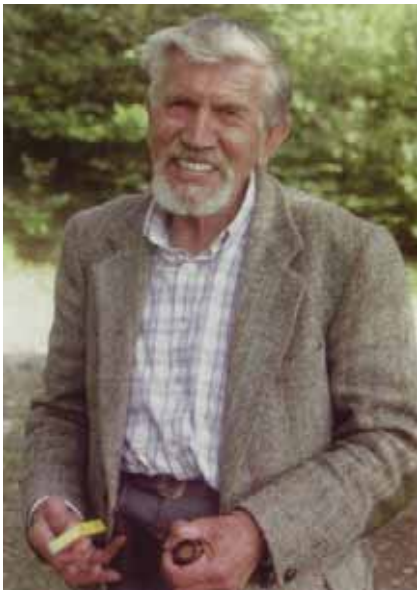
Talis then took Oliver to another woodland on the Dinam estate. When he began managing it 20 years ago, it comprised even-aged monocultures of European Larch and Douglas Fir, with a narrow strip of Scots Pine across the slope. He began by transforming the Larch over to his uneven system and now there was a rich, mixed species understorey in which the Pine, Larch and Fir had been seeding prolifically along with Oak, Ash, Beech, Hazel and Sycamore. Only now was work beginning on the Douglas Fir, undergoing conversion to a mixed woodland. Once again, trees were selected for felling either on the basis of poor form, or if they reached a target diameter – but ensuring that plenty of standing wood remained. *"I never select for thinning by size, but by quality," said Talis. "I take care to leave uneven sizes to prepare for future phases of target diameter felling. And I prefer not to take out too much at once. My motto is to make haste slowly, making steady improvements year by year. There is no point in being in a hurry to get the job done because you will only cause needless disruption and the job is never finished anyway."*

Oliver's curiosity about this lively engaging – and for his advanced years, an impressively fit man – grew. He pieced together some of his life story – beginning in 1945, when he left his native Latvia after being wounded on active wartime service at the age of 17, to study forestry at The Baltic University in Hamburg. "I suppose I've always been something of a rebel, even at university," he recalled. "One thing I could never accept was the principle of discounted revenue applied to forest economics, based on the idea that you made your investment and then reaped your return in one fell swoop. I knew something was lacking and thought that there had to be a system of forest economics based on securing the forest in perpetuity – not always starting and stopping. The problem was that the formulas can only be applied to even-aged monocultures and they break down as soon as you mix species or rotation periods. They cannot account for how different species affect one another. I maintained instead that a forest should be seen as a production capital, and only the increment was the product. I am happy to say that they were very tolerant. I remember the professor saying: "You are free to have your own thoughts but you also have to know that we are teaching you."

Much of Talis's knowledge of continuous cover methods came, not from his formal education, but from work experience – in particular, working during his university vacations for the North German Timber Control in the Harz mountains, where timber was being secured for export to Britain for war reparations. In 1949 Talis was offered a "temporary assignment" by the Forestry Commission at its Kielder Forest Office acquisitions department. Here, his main task was to prepare plans for new acquisitions, assessing whether forestry was a viable option for a site and developing preliminary planting patterns, road design etc. At first,

he had no disagreement with the FC's plantation-based approach. "I thought, in my youthful exuberance and ignorance, that these pioneer crops we were planting would eventually be turned into forestry proper.

But then I was disillusioned when I started to see the large clearfells. They disturbed me greatly – and still do. Partly, it is the sight of something devastated, that until that time had been working for you. It just seemed wrong and self-destructive".



As a small cog in a very large machine, he could have no influence on the FC's forest management. So, instead he looked for more congenial opportunities in the private sector. Still in his late twenties, he took employment with Baring Industries, a small independent firm that worked on the Crown Estate in Windsor. Thus it was that the young Kalnars became Head Forester at Windsor Great Park where he put his experience from the Harz mountains into practice, implementing plans for selected thinning, natural regeneration and shelterwood systems.

After a trip to see the forests of Wales – which immediately struck him as "a fine country" – he was invited to manage a Welsh woodland owners co-operative, which he did from 1959 until it was wound up in 1966 because of disagreements amongst members. Thereafter, he worked as an independent consultant forester, keeping many of the same clients from the co-op who were more than satisfied with his work. After friends set up the Shotton Pulp Mill, he was taken on as a consultant and retained the same role in Shotton Forest Management which he helped set up.

Talis was delighted that interest in his methods and Continuous Cover Forestry in general, was on the rise. He was surprised to find himself as one of the chief exponents of the art in Britain, leading to the high accolade bestowed upon him by The Forest Stewardship Council when they visited his woodlands in 1999 and discussed how his methods could be more widely applied.

Talis was honoured with an MBE for his services to Welsh forestry and was invited to Highgrove to contribute to discussions on forestry and land management. Talis took great pride at the end of his life in returning to his home country Latvia. Every year from 2001 he went back to teach forestry at the Forest Faculty at Jelgava, part of the University of Latvia. Last year his wife Martha and two of their daughters joined him in visiting the country from which he came. The trip was unfortunately blighted by an illness Talis developed there, which marred the experience and from which he possibly did not truly recover.

Talis Kalnars, the foresters' forester, passed away in 2005. He was a colossus in the world of forestry and he is missed, and will continue to be missed, for a long time to come.

Tribute to Talis Kalnars

Talis was a great friend, an exceptional forester and had a major influence on the development of my professional career. I was always impressed by his remarkable life story that for me came to symbolise how the best ideas within the different forestry cultures in Europe could be shared. This was clearly demonstrated by his approach to managing ecosystems long before this was to be universally accepted.

Managing nature or 'close to nature forestry' had to be economic and his driver for this was quality timber production, always making use of the benefits of biological automation to optimise returns at minimum costs.

Talis will be best remembered for his thinning pattern 'Graduated Density' used in the initial stages of stand transformation which is now enshrined in the best practice guide of every continuous cover forester in Britain and Ireland. It is a fantastic adaptation to a windswept island but also provides a simple and direct route to transformation to irregular high forest. This integrated approach where commercial, environmental and social benefits grow out of an adaptive and ever changing growing stock is the legacy of a great forester who, fortunately for us, made Britain his home.

Phil Morgan,
President Pro Silva

Continuous Cover Forestry Course

by Ken Hume

"For human character to reveal truly exceptional qualities, one must have the good fortune to be able to observe its performance over many years ... and that, if in addition, it has left its visible mark upon the earth, then there can be no mistake."

The Man Who Planted Trees – Jean Giono, 1954

My own woodland in The Chiltern Hills was previously owned by Kenneth Rankin – founder of the Economic Forestry Group. Rankin had applied a philosophy of planting vacant spots with quick growing conifers and in my case with Douglas Fir, European Larch and Western Red Cedar to supplement what was thought to be primarily a Beech woodland. In reality, I have found 23 different types of trees growing in our woodland including the wild service tree on the woodland boundary margins.

When our conifers were relatively small they posed no great management challenges but now aged 55 years old and some over 100 feet tall it is now no mean task to fell and extract some of these trees without causing major damage. That aside, the quandary faced by every owner is which trees should be selected for the chop and how should these be removed to allow the remaining trees to grow on and hopefully also start natural regeneration.

In September 2013 I had the good fortune to be supported by Woodland Heritage to attend one of the Continuous Cover Forestry courses run by Andy Poore and David Pengelly of SelectFor at Stourhead.

In 1889 Lord Kelvin stated (abbreviated) that:

"unless you can express what you are dealing with in numbers then you might well know something about it but it's hardly the beginning of science"

There is no doubt in my mind that both Pengelly and Poore subscribe to Kelvin's approach and have developed an existing continental quantified approach to CCF to a point where information gathered in English woodlands can now be used to aid informed decision making about harvesting.

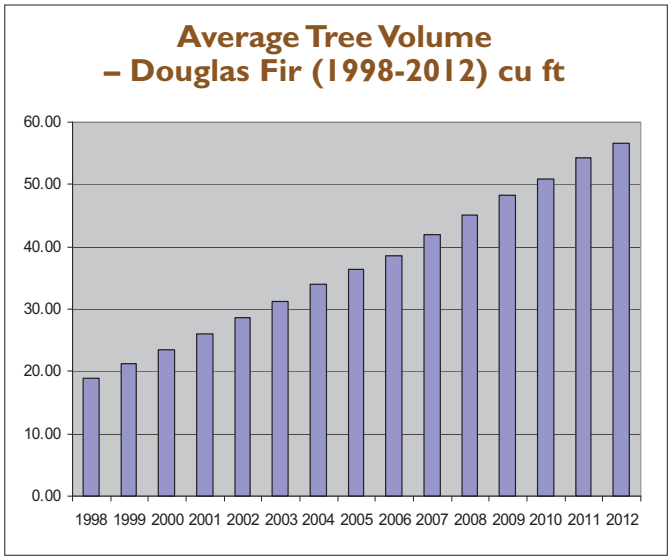
During the summer of 2012 Hume & Russell undertook a detailed survey of Rankin's woodland to count, measure, estimate age and identify the species of each and every tree growing in the woodland and then to map these on an Ordnance Survey map. Without realising it at the time we had established the very expression in numbers of the data needed to implement a CCF approach to woodland management (and keep Lord Kelvin happy).

The CCF approach relies very much on establishing the basal area of trees present in a defined area of woodland [Marteloscope] and for each tree species a target optimal basal area has been established. When I ran the numbers on our Larch woodland I found that we were at least six times overstocked. The problem then remained as to how best to reduce the numbers of standing trees whilst endeavouring to maintain the standing volume of timber present in the woodland.

Andy Poore (left) and David Pengelly.
Oxfordshire Woodland Group Sept 2013

A sustainable approach to forestry was famously practised and developed by Merve Wilkinson over the period 1938-99 in his coastal woodlot in British Columbia. Over a 60 year period, Wilkinson demonstrated that he was able to take out 25% more timber volume than was originally standing in 1938, and yet still preside over a 10% increase in standing volume. He was of the opinion that to cut any 50-60 year old Douglas Fir trees was lunacy as over the period between 50 to 75 years the tree will treble or quadruple in volume and also that a 180 years old tree will have a value 1,300 times that of a 60 year old tree. Merve concluded: ***"The essential ingredient in effective woodlot management is time"*** *(Wilkinson, 1996).*

Wilkinson's statistics are quite dramatic and so I put these to the test and plotted the actual increase in standing volume of 20 Douglas Fir trees growing in our woodland measured annually over the past 15 years and found that the standing volume had trebled.



Knowing that Rankin's Larch woodland was grossly overstocked I set about preparing a plan with Nick Keighley of Face North Forestry to determine which trees we should take down. We decided that the first trees to be felled should create a long access track running along one side of our Larch wood so that subsequent fellings could be then felled diagonally

Nick Keighley and a Ferrari alpine tractor.
Oxfordshire Woodland Group Sept 2014

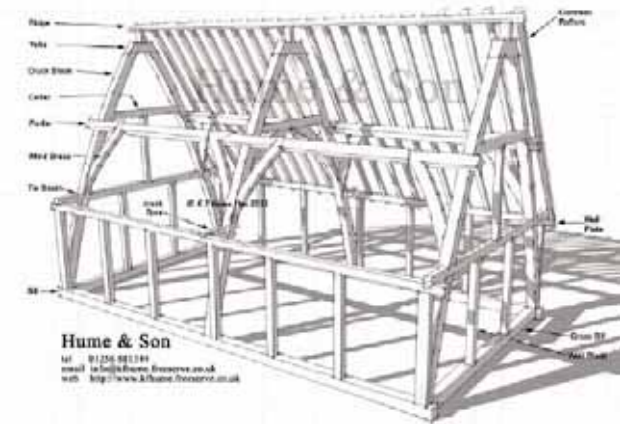
across the woodland and extracted using a Ferrari alpine tractor fitted with a rear mounted winch. This tractor proved to be the cat's whiskers, especially when operating in the tightly stocked woodland doing no damage to the trees or ground.

Forestry Commission regulations permit an owner to take down five cubic metres per quarter without the need to obtain a felling licence and so if this work is done at the end of one quarter and the beginning of the next then the allowance can effectively be doubled making for a more cost efficient approach to felling.

We took down about 20 Larch trees yielding very useable timber now destined to be converted to form all of the parts needed to make a two bay

10 cu m Larch logs.
Oxfordshire Woodland Group Oct 2014

cruck timber-framed building *(see below)*. About eight cubic metres of timber are needed to construct the main frame.



Rankin's three hectare woodland is capable of producing sufficient volume of useable timber, on a fully sustainable basis, to produce one four bay (or two x two bay) timber framed buildings per year, *ad infinitum* and so the question remains:

Why do our small woodlands stand idle?

Refs. HUME, K.F. & Russell H.L., 2012. *Uses of Timber other than Oak in Timber-Framed Building Design & Construction. Unpublished Research Paper (M.Sc.).* Bournemouth University.
WILKINSON, M., 1996. Silvicultural Systems Programme - Notes to the Field. *British Columbia,* Vol 3 - July.

Hume & Son – Masters in Timber Building Design, Engineering and Conservation
Ken Hume BSc. MSc. P.Eng. C.Eng. M.I.Mech.E. – senior partner
James Hume MSc. (Oxon) – partner
contact tel 01256 881344
email enquiries@kfhume.freeserve.co.uk
web http://www.kfhume.freeserve.co.uk

COURSES IN CONTINUOUS COVER FOREST MANAGEMENT

IRREGULAR SILVICULTURE IN THE LOWLANDS: TRANSFORMATION IN PRACTICE

Marking is a difficult skill to learn, particularly within an unfamiliar discipline such as Irregular Silviculture.

These Courses provide an in-depth introduction to the theory and practical application of irregular silviculture in coniferous and broadleaved stands with the emphasis on lowland forests.

The Courses incorporate a marking exercise in which the trainees, in groups of two, undertake the marking decision process for themselves within a one hectare stand under transformation and interact with two experienced practitioners. On the completion of the marking exercise, the trees selected for removal by each group are inputted into a spreadsheet which provides a detailed summary of the silvicultural and economic consequences of each marking. These data can be compared between the groups and with the marking of the local manager.

The two day course incorporates site visits in irregular coniferous and broadleaved stands and looks at the silviculture of transformation in more detail.

The Courses are based on the Stourhead (Western) Estate, Stourton, near Mere, and the Rushmore Estate on the Wiltshire/Dorset border. The Courses are designed for 14 trainees and will be led by Andy Poore and David Pengelly, both leading exponents of Continuous Cover Forest Management.

Woodland Heritage will be offering some bursaries on a case-by-case basis.

For further information see the Courses section on www.selectfor.com
or contact Andy Poore at andy@selectfor.com

www.selectfor.com

Other Continuous Cover Forestry Group Events in 2014

Site Visit: Blengdale Forest and Miterdale Forest, West Cumbria
Date: 5th June 2014

Site Visit: Faskally and Atholl Estates, Perthshire
Date: 27th Aug or 24th Sept – t.b.c.

Site Visit: Llandinam Estate Nr. Newtown, Mid Wales
Date: Oct 2014 – t.b.c.

CCF Courses for Foresters

With field visits, practical exercises and indoor sessions. The Forestry Commission have kindly opened their two-day courses to CCFG members and other foresters

Cost: £200 FC course ref. 3.48b

Lyndhurst (New Forest) – 1st to 2nd May, 2014 - Broadleaved tree species
Ruthin (Denbighshire) – 10th to 11th June 2014 - Spruce and shade tolerant conifers
Aboyne (Aberdeenshire) – October 2014 t.b.a. - Pine and Larch

For more information about any of these events please visit: **www.ccfg.org.uk**
Or contact: **administrator@ccfg.org.uk**
Non-members are most welcome to all our events

Grown in Britain

Grown in Britain is a Government backed industry led umbrella organisation which was launched in October 2013. It brings together a broad diversity of forest, woodland, social, manufacturing and end user interests – everyone who values our forests, woods and trees and the products we can make from the wood they produce. It is an incredibly positive movement which has the following aims:

- *To create a new and stronger market pull for products from sustainably managed UK woodlands and forests*
- *To attract new, private funding to plant woodland and bring unmanaged woodland into long term sustainable management*
- *To support long-term sustainable management through harnessing the positive energy and feelings towards our woodlands and forests that many in our society share, to create a strong wood culture*

This dynamic and fast moving campaign started only last year and yet has engaged directly with over eight million people through events and an array of traditional and social media.

Some of what Grown in Britain is doing is not new, indeed Woodland Heritage has certainly 'got the T-shirt' for promoting wood as a fantastic material, protecting and enhancing woodworking skills and of course the vital need to grow the right trees in the right way and in the right place, all of which we try our best to support.

However, some of what Grown in Britain is doing is new, including the astounding achievement to get 18 of the UK's major contractors, with £24.5bn annual buying power, to back the campaign for using more UK wood. This group of major businesses also made it clear that it needs public procurement to show the way and so Grown in Britain has also been working tirelessly behind the scenes and with significant success to change these complex but vital policies.

The campaign continues on all fronts and no stone will be left unturned in our objective to create a sustainable future for our woods and forests. In 2014, this ambition will also see an option for producers of UK wood based products to obtain a Grown in Britain licence to 'brand' their products. If you are interested in such an opportunity then please contact helen@growninbritain.org. Rest assured that we are doing all we can to secure significant demand commitments from retailers, merchants and other buyers for Grown in Britain products.

If you would like to become involved, please have a look at our website www.growninbritain.org. To show your support or publicise your event on our web pages please send in your logo. You might wish to consider supporting Grown in Britain Week, which starts on 13th October 2014, by running an event.

Grown in Britain launches with Travis Perkins. Front left Andrew Harrison COO Travis Perkins and front right Dougal Driver CEO Grown in Britain with other members of the Grown in Britain and Travis Perkins teams.

Dougal Driver, Chief Executive
dougal@growninbritain.org

Bangor Forestry Students Association

BFSA was founded by Martin Price and James Walmsley, two former forestry students from Bangor University, to benefit students, graduates, distant learning students and staff.

Members include undergraduates and postgraduates, and we are proud to count amongst our members a number of international exchange students of forestry and related subjects. The Society is made up of a mix of students of forestry and students of environmental science and conservation. As such we try to represent the needs of our diverse membership in the events and opportunities that we organise.

We host a regular series of talks by guest speakers as diverse as apple tree growers, chartered foresters and environmental research bodies, held each month in the department.

For further information, please e-mail: forestry@bangorstudents.com

www.facebook.com/groups/2223783770/

Acute Oak Decline – Research report No. I

An overview of all the facets of our research work

by Dr Sandra Denman

Last year, at about this time Peter Goodwin was pressing me for a written update on AOD research for the WH journal, and we were anxiously waiting to hear who had won the Defra Th0108 contract. This year, when Peter is again at the door, there has been a significant change in the situation. One of the key changes is that we have won the Defra AOD contract and research has been underway for almost a year. This has meant that Defra injected a very welcome £1.1 million into AOD research, spread over three years.

Under my direction, three major themes on AOD are researched by scientists from six different organisations. This is a remarkable achievement and is the beginning of integrated, collaborative, multidisciplinary research within the framework of a systems approach to the problem, which I very much hope will have the opportunity to be fully developed.

In just one year the research has delivered great things. In this edition (page 22) you can read about the success Katy Reed has had with rearing *Agrilus biguttatus* in the laboratory. The chemical ecologists from Rothamsted Research have identified volatiles given off from Oak leaves and they find a wider diversity of these gaseous chemicals in healthy trees than in AOD diseased trees. The ecologists were able to apply tiny electrodes to the antennae of the beetles (that Katy supplied) and then passed vapours of each chemical past the antennae. Strong electrophysiological responses were delivered from the antennae of both female and male *A. biguttatus* beetles to various volatile components of leaf extracts. The reason for carrying out this study is to find out how the two-spotted Oak buprestid, *Agrilus biguttatus*, selects a tree for feeding, or to lay eggs upon, by characterising the olfactory stimuli that govern interactions (attraction or repulsion) between Oak trees and the beetle. ***The results are so exciting and offer great promise to understanding 'what makes an Oak tree attractive and susceptible to attack by** A. biguttatus' **although much more testing must be done.***

A detached Agrilus biguttatus antenna (the twisted wire-like object) placed between two electrodes. The round spots in the background are light sources.

In my laboratory at Alice Holt the team has also had a really significant success. We have developed a non-destructive, rapid diagnostic tool to test for the AOD bacteria – *Gibbsiella quercinecans* and *Brenneria goodwinii*. Taking a sample is easy and can be done by anyone. Essentially, we post a swab *(below)* (which looks like a giant cottonwool-

earbud in a plastic test-tube), which is placed in the weeping patches on the tree stem, and wiggled about to get as much fluid as possible on the cottonwool head from all parts of the wound. The swab is returned to the plastic tube; site and tree details, GPS position, the date and contact person recorded on the tube, then it is posted back to us in a Jiffy 'bubble' envelope.

At Alice Holt the details are recorded on the database before the swabs are prepared for molecular testing. Although the preparation process is quite time consuming, the actual lab test is carried out in a matter of hours.

The team involved includes: Rory Vereker who co-ordinates sending and receiving swabs, and updates the data base and, with me, informs clients of the results; Sarah Plummer and Dr Glyn Barrett do the testing in the lab. Glyn joined us in November and is on a three year post-doctoral research assistantship administrated by Bangor University, but funded by *Woodland Heritage*. We can attribute the success of the test to Glyn who, with Sarah, optimised the process by introducing a 'washing' step in the preparation of the swab fluid. Well done to them both. The method was finalised in December 2013 and since then we have processed nearly 100 samples from 66 sites.

Dr Glyn Barrett and Sarah Plummer.

Worryingly almost all these samples have tested positive for the AOD bacteria. The information is also used to give us an idea of the distribution of AOD and new maps on our website reflect the known extent of AOD in Britain.

Another really great advancement towards understanding the causes of AOD was made through the work of *Woodland Heritage* and the Rufford Foundation who funded PhD student, James Doonan *(right)*. Under the leadership of Dr James McDonald (Bangor) and me, James Doonan managed to sequence the genomes of both *Gibbsiella* and *Brenneria*.

In annotating these genomes James has discovered a raft of pathogenicity genes that could explain how tissue necrosis occurs. In the coming year he will try to determine which of these are active and in so doing will be helping us to determine the role of the bacteria in causing the breakdown of the inner bark.

In addition to the work on *Agrilus* and the bacteria, Susan Kirk, Glyn and I have also made some exciting new discoveries about the root attacking fungus – *Armillaria*, known to many people as the honey fungus. We anticipate that this fungus has a key role in weakening or predisposing Oak trees to attack from *Agrilus*. More about this in the next edition of the *Woodland Heritage* journal, by which time we hope to have a PhD student in place working on this.

All in all we have had a very productive year in advancing knowledge on many aspects of AOD but we have also developed and implemented a service to the tree community through the AOD swab testing facility. We submitted four scientific peer-reviewed papers last year, and although the articles are still in peer-review, we are hopeful that they will reach publication later this year. So be on the lookout in the journal 'Forestry' for these articles and in the International Journal of Systematic and Applied Microbiology where Dr Carrie Brady formally identifies three new bacterial species associated with Oak. One of these species was isolated from Native American black Oak with symptoms of AOD in California.

At the beginning of this article I commented on the changes that have occurred this year, but one thing that has not changed is the short-term nature of the help I have in my team membership and we keep working very hard to overcome this. I am very grateful to Dr James McDonald and Bangor University for their partnership in helping to build a stable, talented team of Oak researchers.

James Doonan sequencing genome of Gibbsiella_2013.

Without the help of *Woodland Heritage* and the very gracious and generous charities that contribute funding to the AOD initiative – and to ***Lady Victoria Getty*** in particular, for her enthusiastic backing – we would not be able to progress as far or as fast as we are. So we are very appreciative to everyone for the support we receive and are sure we will bring more exciting news updates next year.

Acute Oak Decline – Research report No.2

Investigating the role of *Agrilus biguttatus* – how does this elusive native beetle fit in?

by Katy Reed, PhD Student, Forest Research and Harper Adams University

I have been awarded a PhD studentship, as part of the Defra AOD contract, to study the role the Two-Spotted Oak Buprestid (TSOB) *(Agrilus biguttatus)* ***plays in the AOD syndrome. I started the project last April, and am writing to give you an update on my exciting first year of study under the supervision of: Dr Daegan Inward (FR); Prof Simon Leather (Harper Adams) and Dr Sandra Denman (FR).***

Typical symptoms of AOD include vertical cracks in the bark of the stem, from which black fluid exudes. Necrotic lesions are present in the tissues beneath the bark cracks, and the galleries of beetle larvae are also usually present in adjacent live tissues. Causes of AOD are likely to include multiple living and non-living agents, including bacteria. The D-shaped exit holes produced by adult TSOB when they emerge from tree bark are also frequently found on trees that are affected by, or have died from AOD. TSOB is visually attractive – it is an iridescent blue or bronze-green beetle, with tiny white spots on its wing-cases. It is part of the group of "jewel" beetles, so-called because of their bright, metallic colours. TSOB is part of a huge genus, *Agrilus*. There are around 3,000 described species worldwide, and six species in the UK.

Oaks with lesions.

Most species within the genus only develop on weakened, dying trees, and therefore don't cause much damage, but some are major pests. One species, the Emerald Ash Borer *(A. planipennis)*, was accidentally introduced to the United States in the 1990s, and has since killed millions of native American Ash trees. The Emerald Ash Borer is alien to the native Ash trees, and so these trees have no natural resistance to the beetle, which, unchecked, becomes a damaging pest.

In the UK, TSOB is a native species, and was not formerly thought to cause significant damage to Oak trees. In fact, in the past, it was thought to be so rare that it was classified as "vulnerable" and placed on the Red Data list. The beetle now seems much more widespread and numerous. It will be important to examine this seeming population increase, and establish whether it will have any negative effects on trees, forests, and ecosystems.

TSOB is of great concern in the UK because of its association with declining Oak woodlands, particularly those affected by AOD. In our research into AOD, we hope to answer some important questions about the beetle, including: what is its distribution, and is it restricted to certain parts of the UK, or could it spread to further areas? How will its lifecycle and distribution be affected by climate change, and what are the implications of these effects for native Oaks? At what point does an Oak tree become susceptible to attack by TSOB?

The breeding programme

To help answer these questions, it is necessary to breed the beetle in the laboratory, so that it can be studied under controlled conditions. This species had never before been kept in a laboratory, so we ran a pilot study to develop methods last summer, using

Emergence cage.

Mating.

novel techniques and refining methods developed for the Emerald Ash Borer in the United States. We first developed a procedure to collect adult beetles. We built a large emergence cage, and filled it with bark material from infested trees sourced from sites across England. We expected the adult beetles to emerge from the bark in the summer, and the first new adults did start to appear, on warm, sunny days in early June. We collected the emerged beetles by hand, and housed them in cages. We then paired male and female beetles, and, for what we believe is the first time, a number of TSOB mated, and females laid eggs in the laboratory.

Hatching eggs.

The pilot study gave us an unprecedented opportunity to study TSOB's lifecycle and behaviour. We determined the adults' feeding preferences, and were able to observe mating behaviour, as well as the females' egg-laying preferences and the number of eggs laid. We also gained initial information about the effect of temperature on egg and larval development.

Temperature is very influential in an insect's lifecycle, and by measuring how long a larva takes to develop at constant temperatures in the laboratory, we plan to predict the length of development time in fluctuating field conditions. We plan to use the laboratory developmental data to investigate whether low temperatures may limit the beetle's development in different areas of the UK.

Another goal of keeping TSOB in the laboratory is to provide adults and larvae for use in other essential experiments. It is important to discover whether the beetle is involved in producing the exudates that are the main symptom of AOD, and whether it kills trees, or simply takes advantage of hosts that would, most likely, die anyway. If the beetle is shown to attack healthy trees that might otherwise recover, it may be important to look into methods to control its population.

It is also important to understand how the beetle may interact with the AOD bacteria, for example, whether it assists the spread of bacteria within trees. Last summer, we provided adults for initial studies into how TSOB are attracted to AOD-affected Oak trees, and we will provide more beetles this summer. Eggs and larvae will also be used to look into whether the beetle is involved in bleed formation.

Our initial success in rearing the TSOB in the laboratory is an important first step towards answering some of the important questions about the beetle's role in AOD. We are now starting a much larger laboratory trial, and are currently sourcing bark material from a number of sites across England. In order to study them effectively, we must devise techniques to keep them alive throughout their development.

Along with the laboratory work on the beetle's lifecycle and development, we are also planning a set of field experiments that will examine what makes an Oak tree susceptible to attack by the beetle. We have made excellent progress in studying the role of TSOB in the AOD syndrome, and look forward to another productive year!

"The times they are a-changing...."

by Arwyn Morgan

The well known former Royal Forestry Society president, the venerable Bede Howell, has a most memorable comment: "All foresters, in their training, should spend some time at the sawbench," which is probably the truest saying. Unfortunately, it is not being carried out. We have a whole host of foresters who don't have a clue as to what they are growing, and what the trees contain inside.

Today forestry is at a crossroads. I'm not talking about the "politically correct" or fashionable conservation industry woodlands, which have limited potential to grow into high forests of grandeur and beauty without continual grant aid. I'm talking about woodlands grown on a commercial basis that could potentially introduce dramatic and beautiful features to the countryside, and give a vast array of financial and environmental features.

But Britain's forests have enemies waiting at the borders. It seems that the Larch tree is heading in the same direction as the dodo, with Ash following fast behind. Might Oak be next? No use worrying – better to start planting alternative species that will bring variety to our forests, as well as supplying markets. If we don't, what will happen if our Oaks and Spruce go?

What species would I grow? Some of the so-called alternative species have processing requirements that are different to those of the more common species. Many of them are more durable during processing, but tend to produce weaker wood. Some are heavier due to water content, but quite light once seasoned. The practice in this country, to mill one day, preservative treat the next, let the treated wood cure, and then ship it out as soon as possible, is not too clever.

Stand of Abies procera (Noble fir) growing in Oregon.

With some species, especially **Grand Fir**, when the wood dries, it attains a very light colour, and doesn't look as if it has been treated. Other species have stringy bark that causes problems, but while it is fresh, this can be easily removed by both cambio-shear and rosser-head type debarkers. However, if the logs are allowed to stand around the yard for some time, the stringy bark tends to come off in large plates, which often clog up conveyors.

Some of these alternative species are extremely fragile when first milled. Currently, the drop sorter system is the most common way of sorting sawn timber on UK sawmills' green chains; but this causes considerable degradation to species such as **Californian Redwood**. In California, most mills avoid this by tray sorting. Some alternative species need to be air dried prior to kilning, to avoid further degradation during seasoning. Often it is the smaller, mills that process home-grown timber deal with alternative species. Unless they are handled and processed properly, a bad reputation can easily be developed, all because the mill handled them in the same way as they would process more common species.

Looking at some of the species that might be planted on a wider scale, we have quite a few conifer species, while broadleaf options are more limited. Over the years we have worked with quite a few of them, so we will note some of their characteristics and possibilities:

Japanese Cedar, Western Red Cedar, Wellingtonia, California Redwood, and Swamp Cypress all produce semi-durable or durable timbers, but they tend to be weaker in strength. All have a long record of use, and, apart from Western Red Cedar, tend to grow very fast.

Considering that **Western Red Cedar** grows well in the muskegs in Canada, one wonders whether it could be more widely planted on upland sites. As a timber, it is popular for cladding and exterior work. Much of the imported timber is fine-grained old growth wood, but as this supply diminishes, second growth wood is becoming more common in shipments. *Our home-grown wood, in its general size and age, is very similar to this imported, second growth wood, and soon a point will be reached where the home-grown will be as good as, if not better, than that imported.*

Japanese Cedar is the most popular forestry tree in Japan, where foresters high-prune them to considerable heights to produce high quality, durable timber. The Japanese Cedar that we have planted have grown like rockets, often gaining a metre or more per year.

Pseudotsuga menziesii (Douglas Fir). Sometimes referred to as the Oregon Pine, it is pictured in its native western North America.

Wellingtonia is hated by some, loved by others. There are not too many wooded areas planted with pure Wellingtonia; often they were planted as specimen trees, and although large, they are often not of true forest form. We have processed both open-grown and forest-grown Wellingtonia. Those open grown are often struck by lightning and can have considerable shake around their hearts. Ingrown bark can be an issue in the first five or six feet. Although easy to mill and very stable, the bright colours don't last, and the wood is very weak. The forest form trees we have milled were far less wasteful. As a transplant, Wellingtonia needs full sunlight, as even if it has some shade or cover, its growth is severely retarded until it reaches five or six feet. Then it shoots up.

Californian Redwood

This is a favourite of mine. Several years back I started to market it as a species, but as the Phytophthora epidemic hit home, our initiative has been put on hold while I handle clients' Larch. ***A forester from a large forestry company once told me, "Only an idiot would plant Redwood!" I beg to differ.*** In its homeland, Redwood is one of the highest priced commercial woods. In the US it is in strong demand, and several companies are now planting vast areas of the species in New Zealand.

Although considered a very healthy species, Redwood does have its problems. It does not like peat soils, and although it likes water, it does not like waterlogged ground. It grows well in the UK, both in the wet west and the dryer east, although growth will be limited in the east according to the ground moisture available. ***(Editor: see page 61)***.

Currently there are issues with regard to seed provenance. Upon asking any nursery of their Redwood provenance, the reply is "California". According to US seed zone classification, California is broken up into various seed zones, but any British reference only mentions the whole state as one zone. Southern provenances are to be avoided, as, although they might grow here, eventually they will prove to be too sensitive to our climate.

The suggested provenance by Californian foresters for the UK is from Fort Bragg northwards, and not going too far inland, where the Redwoods tend to produce a greater percentage of ramicorn shoots. It is very sensitive to salt winds, and so not to be planted in the path of prevailing sea winds and salt spray.

Caution must be exercised as to the use of home-grown seed, as inbreeding can be a severe problem. This is unrecognisable in the nursery, but under stressful forest conditions, mortality can be very high.

Much Redwood growth in the UK is of seedling origin, but a sizeable percentage is of cutting origin, and thus of limited genetic variety. Redwood can be extremely durable, but a small percentage is of limited durability. (This is common with most species.) If a stand is of cutting origin and those cuttings were taken from non-durable trees, the resulting woodland might comprise mostly non-durable Redwoods.

A stem of Tsuga heterophylla (Western Hemlock).

Several years ago we were offered a stand of Redwood. I was somewhat suspicious as to their durability, and only purchased two loads of sawlogs – a wise move as they turned out to be non-durable.

Redwood is also difficult to burn. Hence, after the earthquake and fire which hit San Francisco in the early 1900s, only Redwood timber was allowed in the reconstruction of the city. If correct seed provenance or cultivars of known durability are used, it can offer a viable option in the wetter and milder areas.

Whereas all the species so far mentioned have darker or reddish woods, there are various species of white wood such as **Grand/Noble Fir, Western Hemlock, Lawson's Cypress and Macrocarpa**. The first three are marketed in the US under the Hem/Fir label. Tending to be weaker than Spruce, they can nevertheless be easily processed. Problems have occurred where, due to soil and growth conditions, Grand/Noble Fir can be full of tension and literally explode whilst being milled, but with wise planting and different processing methods, they can produce large volumes of good timber.

Western Hemlock was at one time considered a cull tree in the Pacific Northwest, but it is now a mainstay of the industry. There are considerable areas with trees of poor form, but I suspect that this is genetic, having seen continuous cover systems where the rubbish has been removed and well formed Hemlocks are now producing seedlings of better form. Also, it seems that Hemlock growing up through a canopy often is of better form.

Lawson's Cypress is a semi-durable white wood, often planted in the past of poor provenance.

Cupressus Macrocarpa is another semi-durable timber, often of very poor form, but once again, if selected well, it produces a fine wood. No doubt all the forestry students at Bangor University, at one time or other, have visited the forest at Newborough Sands with their lecturers and seen the very poor formed Macrocarpa, but some are of exceptional form. That is the type they try to grow in New Zealand. Perhaps we should try to emulate that?

Alternative broadleaves include English and Black Walnut, the two South American Nothofagus, False Acacia, Sweet Chestnut and even Wych Elm in areas clear of any diseased Elm. All of these species produce timbers of value, some of which are durable, others being beautiful as well, and some providing good bee and insect habitat.

We already know much about these and other species, and although many have been planted, we haven't a policy for their improvement. In New Zealand they have continually tried to identify cultivars with positive attributes, so the next generation of forest trees are of better form and have better timber characteristics. That is why, here in the UK, certain species are of poor form, while in New Zealand the same species are far better. If we keep reproducing cultivars of unknown timber quality, we will possibly be growing non-durable, weak, or quality deficient wood.

Sequoiadendron giganteum (Giant Redwood).

Some time back I was in a beautiful registered seed stand of Western Red Cedar, but a third of the trees contained quite a bit of ingrown bark. Should we be collecting seed from such trees? Not really. Thin out the rubbish and breed from the best – it isn't rocket science. Cattle breeders have been doing that for years. That's why Britain is a world leader in cattle genetics.

It was encouraging to see that some of the nurseries present at the recent Confor show at Longleat are already growing and marketing so-called alternative species. They need support in their efforts and perhaps we need to forget "politically correct" nonsense and become world leaders in multifaceted forestry and timber use.

This article has been reproduced by kind permission of Mark Andrews, editor of Forestry Journal. Arwyn Morgan has kindly allowed us to reduce his original article in FJ issue February 2014.

Oxfordshire Woodland Group

Trees for today and tomorrow

The Oxfordshire Woodland Project closed on 17th January 2014 after having visited and advised over 500 small woodland owners in Oxfordshire on how to bring these woods back into active management. The Woodland Project succumbed to the inevitable following cuts made in the level of funding provided by some of the original contributing local authority partners.

The Trustees of the Oxfordshire Woodland Group would like to thank the Oxfordshire Woodland Project manager, David Rees, for all the important work that he and his predecessor Ken Broad have undertaken in the county over the past 30 years.

On 16th January 2014 a who's who in the Oxfordshire Woodland scene gathered in Eynsham, Oxfordshire to say thank you and farewell to David Rees.

Nick Mottram, Manager of the Wytchwood Woodland Project, presented David with a copy of Peter Savill's recently revised book, *Silviculture of Trees used in British Forestry,* in recognition of his services to woodland and the community.

Dr. Robin Buxton, founder of the Oxfordshire Woodland Group charity, provided the assembled body with an overview of The Woodland Project's achievements made over nearly 30 years together with an outline of the work still remaining to be undertaken by the Group.

The Oxfordshire Woodland Group will continue to pursue its charitable aims and will now be focusing on employing new low cost, efficient and effective ways of promoting the active management of woodlands in the county and beyond. We would welcome approaches from individuals, organisations, local authorities and companies who would like to support our work. We are also now seeking to appoint new trustees to help take the Group forward. If you can help then please contact us via our website:

www.oxfordshirewoodlandgroup.co.uk/contact/

Ken Hume Executive Trustee Oxfordshire Woodland Group

Continuous Cover Forestry Group National Conference

'Delivering Sustainable and Resilient Woodlands in Britain'

3rd to 5th June 2014

Keswick and the Lake District National Park

CCFG thanks Woodland Heritage for its generous support

This conference will bring together the forestry profession and the wider community to showcase the science, ecology and practice of Continuous Cover Forestry (CCF) as an important approach to woodland management in Britain for the 21st century.

The programme will include presentations from leading academics and practitioners, and opportunities for discussion and debate. There will be visits to champion woodlands and forests, which demonstrate the potential of CCF systems to deliver viable futures in terms of timber, recreation and other ecosystem services.

Further Information and Registration visit: **www.ccfg.org.uk**

Partnering and sponsorship opportunities contact Sharon Rodhouse: **sharon.rodhouse@sylvatic.co.uk**

Programme and general enquiries contact: Ted Wilson: **ted.wilson@silviculture.org.uk**

National forestry policies compared

The French perspective by Bede Howell OBE BSc(For) MICFor, Chartered Forester

In 2006, after showing French foresters the destruction caused by grey squirrels, a truly magnificent book on Fontainebleau was given to me – far too heavy to take by plane to France for the RFS trip, but here are some snippets therefrom.

History appears to start with a reference to management in 1209; thereafter the forest was steadily reduced by felling and not restocking, by clearance for farming and owners who were exploiting it. Louis XIV's minister, Jean-Baptiste Colbert (1619-1683), drew up an Ordonnance in 1669 with rules for forest management, some of which remain to this day. Coppice with standards, using rotations suited to the local conditions, was widely prescribed. It also included setting the forest officers on a firm footing to check that exploitation paid its fair share to the Crown (a rise from 169,000 livres in 1663 to 1,029,000 livres in 1683). Nonetheless, by 1716 when the reformer La Faluère, Grand Master of Forests, had an assessment made, about half the forest was empty glades so he set in train a planting of Oak across 3,000 hectares.

At the time of the Revolution the rights of the Crown, the landowners and of the Church were extinguished and in a short free-for-all massive over exploitation, of wood and especially of game, occurred – until the Republic restored order by taking the whole lot into its own jurisdiction. Increasing industrialisation in France so raised the demand for timber and firewood that by the early 19th Century France's forests were at their lowest – about eight million hectares. In 1827 forest laws were re-inforced leading to much good work and another big restocking exercise.

Forest composition (Figures are rather approximate). In 1861 it was recorded that 7,000 ha were coppice, mostly Oak; 5,000 ha were high forest, again mostly Oak and with 50% of it in age classes of over 50 years; 4,800 ha were conifer mostly 15-20 years old and 1,100 ha of "Reserves artistiques" – say retained landscapes.

By 1904 the forest authorities, aware that much was getting too old, started a programme of shorter rotations; the plans were scuppered by the 1914-18 war, then by lack of funds, then the 1939-45 war so that it was 1972 before a new Management Plan was ready. This definitely incorporated works to encourage public access along with timber production, mostly now high forest (15,500 ha) of which 9,200 ha was getting seriously old (only 30 years to felling) so massive clear falls and restockings were started aiming at 7,100 ha in 30 years. These clear fellings led to public unease so a new plan was brought out calling for only 4,810 ha by 1987 – still not to public approval so in 1989 an early revision was made, adjusted to take account of modern research work on special habitats. However, the spell of "heavy handed" work did allow some much needed re-alignment of the age classes to be achieved.

Bede Howell

The British perspective by Dr Peter Savill BSc MSc PhD MA FICFor

It is evident, even from this brief history, that French forestry has not suffered from anything like the amount of political interference that has afflicted British forestry.

The British have seen increasing interference and changes in policy at least since the 'Broadleaves Policy' was introduced in 1985. There has been an increasing emphasis on multipurpose management of forests, and a growing pressure to diversify even-aged monocultures in terms of both species composition and structure. Foresters have been required increasingly to act as ecosystem managers rather than simply as growers of wood. This can be difficult in the many cases where the forests were established with the single objective of producing wood because now they are required to deliver wider benefits.

The effects of the removal in 1988 of the generous tax allowances that had driven most of the afforestation, and which had resulted in a more than

Garthwaite Travel Bursaries

Since 1994 through the inspiration of our late Patron, Peter Garthwaite OBE, we have supported foresters of all ages to travel to many countries to study aspects of forestry, or wood processing outside the UK. Some twenty years on many of these individuals remain in touch and are still putting their experiences to good use. Previous countries include the USA, Holland, Germany, Switzerland, Finland, Sweden, France, Croatia, Ireland, Latvia, Czech Republic, Greece, Denmark, Italy, Austria and Canada.

The Trustees of Woodland Heritage continue to invite applications for bursaries to study an aspect of forestry or wood processing outside the UK.

Eligibility

Applicants must either be forestry practitioners in the UK, or intending to become so after completing a forestry education. Preference will be given to those whose interests are in the production of high quality timber. Applications for support on compulsory tours (e.g. as part of a University group) will not be considered, nor will retrospective applications.

Applications

Should be sent to Lewis Scott and should contain details of the proposed travel including costs and a brief (one page maximum) CV. Applicants should also ask one independent referee to write separately and in confidence to Lewis Scott in support of their application.

Successful applicants will be expected to produce a short article/report with photographs on their travel for publication in the Woodland Heritage Journal and/or website.

Woodland Heritage, PO Box 168, Haslemere, Surrey. GU27 1NE
Tel: 01428 652159 enquiries@woodlandheritage.org.uk

doubling of the area of forest in Great Britain during the 20th century, became evident in the following decades. Afforestation rates plummeted from almost 30,000 ha in 1988 to 16,300 ha in 1998 and 7000 ha in 2008. Lowland British woodlands suffered from an antipathy towards exotics in the 1990s, when attempts were made to remove exotic conifers (or, as many environmentalists refer to them, 'alien' conifers). The millions of pounds of public money that were spent on removing them before maturity probably exceeded the millions that had been spent on establishing them in the first place. The subsequent 'restoration to broadleaves' sometimes meant clearing the coniferous crop and then abandoning the site to regenerate naturally. More often than not the restored areas became covered with unproductive 'scrub' rather than woodland.

Forestry became dominated by social scientists whose aim was to promote public participation. They achieved a great measure of success, and the Forestry Commission's public image improved enormously.

Profitability of forestry The restoration to broadleaves was popular with politicians and officials who declared that sustainable forest management, under their guidance, was progressing from one triumph to the next. The most recent pronouncements were made in a press release in January from the Director of the Forestry Commission, England. It refers to "further great achievements being made towards securing a more resilient future for our woods and forests and the forestry industry." Key points noted are:

1) the establishment of a risk register,
2) £30 million has been dedicated to tree planting over the next two years (equivalent to 1,000 ha a year),
3) support of the "Grown in Britain" initiative.

The reality, according to the LINK report of 2009, was that English forests, at least, were undermanaged and deteriorating. Thinning and pest control had been ignored and consequently the very wildlife values that were being so loudly proclaimed were becoming seriously impoverished. Woodland plants, butterflies and birds had all declined significantly in variety and number. The reason for this has been graphically illustrated by a Cambridge academic, Dr Derek Nicholls, in 2006. He had conducted a series of surveys of the profitability of forestry between 1963 and 2005, and concluded that: "There has been a deterioration of the financial performance of many woodlands since the 1960s to the point where management has been reduced or even suspended."

Peter Savill

From Forest to Finished Product within the Welsh Timber Supply Chain

by Tabitha Binding

I can't believe how fast last year has disappeared. One minute the trees were in bud – the next the leaves had fallen and then it was Christmas.

2013 was tough! The RDP EU funding for the 'Supply Chain Project' was ending and Coed Cymru, the Welsh Woodland charity, like a lot of organisations was also under threat. Thankfully the project has now been extended until January 2015 and Coed Cymru, although reduced in numbers, is safe for another year. So I am now delighted to report that I can continue with the vital work that is needed to ***build and expand links within the Welsh timber supply chain – from forest to finished product.***

Some of the highlights in 2013 were:

- *Attending the WH field day at Blenheim where it was great to meet old, and make new, friends.*
- *Introducing Welsh wood to a local college and supporting their team all the way to the Welsh Young Enterprise finals.*
- *Understanding how a small 'heat + vent kiln' works, making the information accessible and helping Harper Adams University dry their own timber to create the shaft of a new ceremonial mace for the Installation of HRH The Princess Royal as the University's first Chancellor.*
- *Forging links with Bangor and Cardiff Universities.*
- *Enabling more businesses to create and market new and existing products using a Laser machine – which is still available.*
- *Linking a greater number of buyers and sellers.*
- *Attending a number of shows and events to promote Welsh timber and our work, culminating in the 'Timber Expo' trade show which was held at the NEC, for the first time.*

Coed Cymru's hand built Welsh wood stand at 'Timber Expo' September 2013.

For me, a new year and a new start offers fresh enthusiasm, optimism and opportunities. I thoroughly enjoy my role and relish the challenges in 2014 to:

- *Demystify the Welsh Timber building components that are 'Ty Unnos'.*
- *Collect further energy efficiency data on Ty Unnos houses built three years ago and which are outperforming expectations.*
- *Explore the heat treatment of Larch for joinery purposes.*
- *And to continue building and expanding links within the Welsh timber supply chain.*

If you have any questions or queries, or wish to source Welsh timber, please do get in touch with me.

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The Supply Chain Project has received funding through the Rural Development Plan for Wales 2007-2013 from the Welsh Government and the European Agricultural Fund for Rural Development.

OBITUARY

Colin Saville Milburn

1974 - 2014

We are sad to report the loss of a dear friend

Colin first joined the 'Woodland Heritage family' in 2000 when he approached us for training support. We knew that this young man had the potential and dedication to take his place in the forestry chain. Having completed his apprenticeship at Clissett Wood Trust, under the guidance of Mike Abbott, Gudrun Leitz and others, Colin went on to grasp every opportunity to increase his knowledge and skills in green woodwork, furniture making, timber framing, woodland management and horse logging.

From the very start Colin had shown an absolute commitment to using local resources and crafts people, employing traditional techniques and involving the community. Some of his finest work has been for memorial benches, lych gates and projects where he was able to work in a way that enabled him to do justice to the natural beauty of trees and their wood

In 2002 he worked alongside Mike Abbott and Ben Orford, our first apprentice, to construct our Garthwaite Memorial Cruck at Castle Howard Arboretum. This project brought together a variety of craftsmen and women from all over the UK.

Later that year, and with the support of Beatrix, Colin set up on his own in Cornwall. The romance of green woodwork had rapidly evolved into a reality and with the arrival of their two children; he was faced with having to make a living by doing what he loved most.

Colin finishing off the memorial cruck.

In 2003 he undertook a study tour to Northern Spain to research woodland management and traditional carpentry skills. In 2005, with help from Woodland Heritage, he went to Finland to study their management and practices in order to apply this to his work.

In May 2010 we were joined by Colin and his children at our Field Weekend in Cornwall. Shortly after this he won the "Best Stand in the Forestry Section" at the Royal Cornwall Show where he also had the pleasure of meeting HRH The Prince of Wales.

Towards the end of 2010 he and Beatrix made a life changing decision to move from their Duchy smallholding in Cornwall to the Hebrides. It was here that they were featured on 'BBC's Countryfile' at Christmas, just as they were settling in. Having secured a croft and with plans to make new contacts and re-establish his business over the winter months they settled into their new life.

However, in 2011 at the still tender age of 37, Colin suffered a stroke and underwent major heart surgery, which was to be a long-term and life-changing challenge for him and his family. Colin returned to his roots in Cornwall, a place which was very dear to him, but sadly after endless battles and several setbacks, Colin passed away in February 2014.

Norfolk Oaks for a Suffolk building restoration project

Lunar phase felling techniques and traditional tools

by Sir William Cubitt, Axel Weller, Jack Wheeler

A conservation project of a mediaeval moated site at Honing Hall, Norfolk, necessitated the felling of mature Oaks in 2012 from the earthworks to prevent damage to the site. This operation coincided with a request from Jack Wheeler, a local green Oak carpenter, to buy two standing mature Oaks to convert into timber for a restoration project in Sudbourne in Suffolk. The restoration owner, architect Howard Nash, wanted only traditional tools to be used. Jack had met Axel Weller, an East German-born expert on traditional carpentry, in 2011 and worked together in Normandy as part of an international carpentry workshop carrying out repairs to an early medieval monastic barn. Axel and his partner, Hanna, undertook the work at Honing and in Sudbourne with Jack Wheeler in 2012.

Axel and Jack using a cross-cut saw to fell an Oak at Honing.

Jack Wheeler describes the techniques

Tree felling by moon phases is something that Axel has practiced quite a bit. I believe that it is a tradition that still continues in some parts of Europe including France, Romania and possibly also Germany too. I'm pretty sure that I recently read of it also having been practiced in Japan. From what I gather, there seems to be very little written evidence of its use and merits. I guess it has always existed as a tacit knowledge passed on from one generation to the next.

The Oak felled; as smooth as with a chainsaw.

Axel rough hewing with a Breton long-handled axe.

The essence of the idea is that during certain phases of the moon (Axel refered to it as the Black Moon which I believe to be the few days preceeding a new moon) the water and sap content in trees is reduced.

By felling trees at this time the risk of shrinkage checks and splitting can be minimised. It also stands to reason that if the sap content is reduced there are less starches in the sapwood and the timber is consequently less prone to insect attack. In addition to the moon felling the Honing Oaks were also left with their crowns on after felling as they were just coming into leaf. The precept being that the leaves continue to draw water from the tree, contributing the same benefits as above to the quality of the timber.

Axel finishing with a broad axe.

Jack Wheeler

Jack Wheeler is a carpenter based in Norfolk who specialises in the design, construction and repair of timber-framed structures and buildings. Having worked on a variety of projects, he has experience of heavy structural jointed carpentry, historic building conservation, joinery, furniture and sculpture. Jack has a particular interest in utilising locally-grown trees and a preference for working with traditional hand tools. *www.jack-wheeler.co.uk*

The Tools

Axel and Jack sawing in tandem with Japanese Maebiki Oga saws.

The timber awaiting collection; entirely prepared by hand.

A collar in production.

The trees were felled using felling axes, a two-man crosscut saw and Hornbeam wedges.

The conversion was done with a variety of axes: Heavy felling axes for the rough hewing (Axel used an interesting axe from Brittany – historically used for

Axel saws two collars from one tree with a Maebiki Oga saw.

Hanna splitting out peg blanks.

the same purpose). The axes used to create the finished hewn surface are known as broad axes. Axel worked with a Germanic style broad axe while mine was Hungarian. And finally the large Japanese Ripping saws used are known as Maebiki Oga. They are the Japanese equivalent to the English Pit saw and are believed to have been used in Japan from the late 1500s right up to the industrial revolution. They were particularly advantageous for converting the larger of the Honing Oaks as they did not necessitate moving the tree. There were also numerous other tools involved in the conversion process, particularly for marking out."

A scarf joint.

The roof structure repairs in progress

Howard Nash of Church Farm House, Sudbourne, Suffolk is the owner of the house where the timbers were used – so he was his own architect.

Axel saw the project through to completion.

The builder – Wayne Snowling of Snowling and Race, the owner – Howard Nash, the carpenter – Axel Weller.

Axel Weller
Carpenter from Saxony

Axel Weller was born in Hoyerswerda (former East Germany) in 1968 in an underprivileged environment. He became an apprentice maintenance carpenter within the framework of a state-owned coal Kombinat: the Braun Kohle Kombinat Schwarze Pumpe. Thanks to an instructor who was opposed to the prevailing professional practices under the East German regime, Axel discovered the pleasure of working in wood, and the art of building curved staircases. In this grey and industrial setting, he developed a taste for working by hand, for direct contact with one's materials and for the environment. He became active in a banned ecological movement, he became a deserter and barely escaped capture several times by the Stasi. Both access to compagnonnage and travel outside the country were completely off-limits to him.

He taught himself the trade, through contact with older workers and by personal experimentation.

After the fall of the Berlin Wall, Axel finally achieved his goal – to wear the uniform of a Wandergeselle, an itinerant companion in carpentry.

For nine years, he travelled around both Germany and Europe, and then decided to continue his apprenticeship on a much wider scale.

He travelled to the Himalayas, working with master carpenters in Bhutan, Nepal, India, Ladakh and Kashmir.

With the help of colleagues, he organised three international conferences in Germany and the Czech Republic involving Japanese master carpenters. Since 2005, he has worked on the architectural heritage in Normandy. In 2008, accompanied by a Norman colleague Fabien Marécal and under the leadership of Régis Martin, senior architect for Historic Monuments, he carried out the exemplary restoration of a 16th-century manor in Hautot-Mesnil (Seine-Maritime). In this structure, he achieved an unparalleled degree of perfection in grafting timber-frame structures onto corbelled buildings.

A tireless traveller, in 2009 Axel decided to travel overland from Germany to Japan, but without using a car. The goal of his journey will be to live in Japan for a year, perfecting his knowledge of Japanese woodworking techniques.

www.axelweller.com

Lunar phase felling

I try always to cut trees just before the black moon. So when I have to cut trees, which is not so often in the year, I try to choose these special phases and I have had good experience with the results: the wood is more durable and there is less movement and less cracks. I understand that there is no scientific proof for this, however.

As most of my work is quite urgent I prefer to have material which I can use immediately. When I'm felling the trees with the leaves on (like in summer to autumn) and I leave them like this for up to six weeks, a big part of the water in the tree is then gone. The leaves are draining the tree, so it is still just possible to axe and to saw, because of less water.

There has been always been a big discussion about what is the better wood: the one which is cut in summer or the winter felled wood. In 1793 there was a ship built in England, called "Hawke", with half summer cut wood and half winter cut wood, to discover which one is the better wood. 22 years later (in 1815) they built another ship in England, called "Fissgard", in the same manner. They could not find any difference between the wood on either ship!

From my experience: it is a bit more difficult to fell trees in summertime, because it can split easily when felling with a hand saw. But with the chain saw it is not a big problem, but I have no experience in this.

Today there are discussions about the best time for felling. You have to take more care with summer felled wood: it has to be transported out of the forest quite soon (after six weeks) and stored in a place with good air circulation.

As I always try to experiment with different techniques, I use different types of saws and axes. For felling I take a crosscut saw, a felling axe and wooden wedges. For hewing I take a German type of carpenter axe (in the photographs I have used a Breton long handle axe) and a broad axe for the finishing. For the sawing, normally I use a pit saw or a framed pit saw (in the photos I used a Japanese rip saw, mainly because the tree was too heavy to manipulate). For marking the timber normally I use a chalk line, but here I am using a Japanese ink line, because the lines are more fine.

Axel Weller

The Italian experience

Aged 83, Lorenzo Pellegrini combs a forest for the Stradivarius tree – perfect for top quality violins. To get the warmest, fullest notes, he considers its age, the weather ***and even the position of the moon****. Then he waits for the perfect autumn day to fell it –* ***when the sap has sunk and the moon is at its lowest, the furthest from Earth, making it harder for it to tug up the sap****.*

A Basic Guide to Felling, Presentation and Grading of Hardwood Timber

by Gavin Munro

The correct felling of hardwood (broadleaf) timber and good presentation are essential in order to maximise prices and markets for woodland owners. 'Grading' of the timber will determine the categories and prices into which logs will be placed.

Examination

Always examine the planted area – take time to look at the surrounding trees. The condition of standing trees may give an indication of possible defects such as shake in Oak or Chestnut. Sites containing gravel, sand, nettles and bracken may carry a higher risk of shake. Star shake can radiate to the tree surface in winter and split the bark of Oak. It is also thought that shake is associated with the presence of large early wood vessels in Oak. And shake-prone trees may flush later than normal in the season. Beware of heavy suckering emanating from the base of mature trees. It often indicates rot, or heavy colouring in white woods.

Prepare the Site for Sale

Give prospective buyers as much help as possible.

- *Access should be made easy.*
- *Remove obstructions such as scrub/brambles and provide a means to cross ditches/drains etc..*
- *A map of the plantation showing boundaries, environmentally sensitive areas (SSSI's), extraction routes, loading areas, lorry access routes, weight limits and the location of any electric cables is vital.*
- *At this stage any woodland owner will have demonstrated a genuine intention of sale by having a felling licence in place for inspection.*
- *Trees for sale must be clearly identified, marked, measured by a competent person and recorded on the sales schedule.*
- *To maximise markets, potential buyers should be circulated in good time with details of the timber for sale. As should advertising through local and national newspapers, local magazines, mailing lists, or via the internet.*

Fell or Sell Standing?

Some woodland owners may choose to sell 'standing' hardwood timber. In this scenario, it is the buyer who carries all the risk. Defects such as rot, shake etc… may not be apparent until after felling.

Selling trees 'at stump' (in other words following extraction to roadside) can yield a higher price, but felling will reveal any hidden defects. Selling at stump avoids potential damage from extraction by a third party.

Logs sold at roadside should be kept as clean as possible, out of the mud and laid out individually. They should also be kept off the ground to facilitate measurement by buyers.

Star and Ring shake.

When to Fell?

The felling operation is time critical for broadleaf species (hardwoods). Get to know your market and only fell when a buyer has been secured. In most situations, winter felling is recommended. Pale timbers such as Sycamore can be subject to colour taint if felled when sap levels are high and Ash will often split if felled during the summer months.

If deciding to fell their own timber, it is important for owners not to put in the wrong cuts in the logs. Cuts may be inserted at obvious bends and deformities in the log, but to maximise general prices allow the buyers to make cross-cutting decisions. Logs with obvious bends are suited to traditional timber framing. Don't be tempted to tidy up a log or remove a defect – this will arouse suspicion. Mark the defect clearly and make a note on the sales schedule.

A potential 'cruck' or timber framing beam.

Grading of Hardwoods

First Grade lengths of species such as Oak, Ash, Sycamore, Cherry and Sweet Chestnut are classed as veneer or planking butts. These should be in excess of 2.7 m in length, 45 cm at the mid-diameter and be clean, with even grain, free of defects such as knots, or shake. Typical prices quoted for first grade Oak are at present £222 - £415 per m^3 (or roughly per tonne) roadside.

Oak is further graded into ***Beam Logs*** which include poorer formed trees and second lengths. Such lengths should be in excess of 2.5 m and at least 30 cm mid-diameter. Some defects can be tolerated in the case of heavy beams as only three sides of the beams will be visible. Typical prices for Oak beam logs would be £5 per m^3 roadside. Oak is further graded into ***Fencing Quality*** attracting prices in the region of £72 per m^3 roadside.

Second lengths or poorer grades of Ash, Sycamore, Beech or Norway Maple are classed as ***Second Quality Planking***. These are used in frames for upholstered furniture such as three piece suites and bed frames where the wood is not visible. This category is currently making in the region of £36 per m^3.

Firewood

For the first time in many, many years all hardwoods are now sought after for the home-grown firewood market. Even after working costs have been deducted, firewood at roadside in lengths can be sold at a price that will leave a realistic margin. The price of seasoned firewood currently equates to that of second quality planking.

An exercise on measuring and grading timber at the 'From Woodland to Workshop' courses.

Learning for the Future

The felling, presentation and grading of hardwood timber requires both skill and experience. There is limited expertise available by a limited number within the industry. There is a real necessity for forest growers and managers to cultivate the knowledge required to produce high quality plantations for specific end uses.

OUR FIELD WEEKEND 2013

OXFORDSHIRE

Day 1: Blenheim Estate

Those who had flippered their way through last year's wet meetings had some misgivings on arrival at Blenheim, but gradually the day improved to give a delightful afternoon.

Members gather in the park with Blenheim Palace in the distance.

Once shepherded into tumbrils pulled by giant tractors we were whisked through a clearly well-kept parkland, on through an intriguing area of wood pasture and then into the Park proper, across the lake to discuss a large group of Blue Atlas Cedars *(Cedrus atlantica Glauca)* and this tree's possible future prospects as a timber tree in Britain as the climate changes. These trees, planted by the ninth Duke in about 1900 are now starting to look thin in the top and having been planted for ornamental effect rather than for timber, they were unpruned and rather coarse. The writer pointed out that, as with most desirable timber species, the wild populations would have been plundered of their best stems in their native habitats long before seed was imported to Britain and what will have been available for introductions may well be the offspring of poor stock. As this tree thrives in the more southern parts of France, and on calcareous soils, it may yet have a place for future use. What of the sawmillers? Simple, if other main conifer species do become scarce, the mills will soon adapt to what is reliably available. Opinions remained very varied on the growth and potential over here of these beautiful trees which yield useful, scented timber.

The Cedar discussion arrived in due time at Deodar (Himalayan) Cedars *(Cedrus deodara).* ***Woodland Heritage always has star turns and Sydney Draper recounted how when he was working in the Kashmir foothills, wandering tribesmen would come with their camels to take logs down hill – one eight-foot length either side of the camel and of sufficient diameter for cutting railway sleepers.***

Paul Orsi, the Rural Enterprises manager, is an Edinburgh forestry graduate. He has responsibility for a bewildering array of responsibilities – events from the CLA Game Fair and all other events downward from that; grass-mowing which includes a flock of 1,500 sheep (plus their two shepherds); the forestry staff of three men, nine miles of Estate wall and other items – including a visit from Woodland Heritage!

His abilities showed through very clearly and he explained to us that out of the 12,000 acres there was scarcely a one not designated for something, starting with the designation of World Heritage Site, SSSI, AONB, green belt etc. and that, due to the unusual history of the Estate's acquisition and continued single ownership, they were until recently unable to tap into those public grant funds which keep other organisations afloat – but now, under Higher Level Stewardship, help is forthcoming for repairs to the Ha-ha and even at times for the Estate wall.

Visitors are the main source of income (over 600,000 persons per year) which brings a need to

The massive King Oak.

Paul Orsi, Blenheim's Rural Enterprises manager.

manage sales facilities and tearooms etc. This was all put over clearly but humorously so that when we entered the 100-hectare area of wood pasture we had a living picture of the interaction between the various Designating Bodies, the Estate staff and, of course, the Duke.

In this woodland there towered the King Oak (left) – a Royal Gentleman of a girth suited to his dignity (9 metres!) from which Gavin Munro estimated an age of about 900 years. This tree was about 600 years old when Blenheim was given to John Churchill!

Acute Oak Decline

Unusually, and partly due to the plantings by the 9th Duke, there is a good range of tree ages but one of the younger ones was recently diagnosed to be suffering from Acute Oak Decline. This was felled, partly de-barked and thoroughly inspected by ***Dr. Sandra Denman of Forest Research***. The Timber Men evaluated it and spoke of the current Oak pricing tendencies. England does not produce enough veneers for making up loads to the Continent so the best goes into fine planking, and as beam Oak is now in such demand its price has risen to the former planking levels.

Woodland Heritage has pushed Government for funds with which to promote further study of Oak diseases and itself shows good example, having raised nearly half a million pounds to fund Dr. Denman and her team – meanwhile there is all this fuss about Ash which has never had the iconic status of our National Tree. A recent, new fund has been mooted to study that important, hidden part of trees, their roots.

Members examine Blenheim's first AOD affected Oak.

After the tumbril rides back to our vehicles for lunch, and then re-tumbrilising, we went part way along the hallowed turf of the Great Avenue and stopped a respectful distance short of the pillar with its statue of John Churchill. Here we discussed landscaping on the large scale, the influences of London & Wise, of Lancelot Brown, of the 9th Duke, Elm disease and finally Colvin & Moggeridge who advised changing the avenue from Elm to small-leaf Lime *(Tilia cordata)*.

Discussion ranged over the seed sources of small-leaf Lime as offered by the nurserymen before we got down to our major session on Ash Dieback. Hugh Williams from Forest Research spoke of their active work in planting an important trial for observation and Peter Goodwin told us about British Ash Exports Limited to find overseas markets for the vast amount of quality Ash which is soon to become diseased. ***Graham Taylor, however, put the matter into context. The recent FC tree survey puts the number of Ash trees at 127,000, with a mean volume of 0.3 cubic metres (about 10 cu.ft.H) so if 20% of this is of millable size that gives (127,000 x 0.3) x 20% which is well over six million cubic metres. Currently we mill 5,000 cu m. per year, so we will take 1,200 years to cut it up. And that's without the cordwood!***

Our return to the yard was followed by the WH presentation of the annual bottle of champagne to the farthest-travelled member (Gavin Munro), and a beautifully-turned bowl to Sydney Draper and of course to Paul Orsi; the 'The Prince of Wales Award 2012' shield was presented to Tabitha Binding. Ron Keay was another star turn. Ron attended the local school, after coming to the Estate at about 13 years of age – his father was Keeper. He turned 15 and then, when school had finished on a Friday afternoon, on Saturday morning Ron started work at Blenheim, sixty-one years ago and is still at it! What a wonderful record.

Bede Howell

Day 2: Shelswell Park Estate

Affability, an excellent line in mocking humour and self-effacement all belie the brilliance of the forestry knowledge and practice embodied in our host for the second day, Baron von Maltzahn. His arrival in 1976 at the splendid Shelswell Park Estate, which had been in his wife's family's ownership since 1782, coincided with the devastation of Dutch Elm Disease. This determined the Baron to look at a diversity of species whilst working out future planting and maintenance throughout the Estate where the woodlands were in need of some serious attention. That decision now looks particularly prescient in the face of climate change and the seemingly ever-increasing plethora of pests and diseases threatening our trees and woodlands.

However, on his arrival, the Baron *(above)* told us, he had no knowledge of or training in forestry. He first looked for advice to the Forestry Commission's Local Conservator but was not convinced by the response. ***Instead, a cousin in Germany sent his forester over who, despite suffering from frost-bitten toes from his time on the Russian Front during the War, nearly walked his 'pupil' off his feet. Telling the Baron not to bother taking notes, he then produced a comprehensive report – a document on which the Baron claims to have based his entire forestry knowledge and activity ever since.***

Shelswell Park is a traditional country estate comprising arable farmland, mature parkland and some 450 acres of mixed woodlands actively managed for high quality sawn timber, fuel-grade woodchips, and firewood. It has its own small sawmill. Over time the woods have suffered a variety of damaging incursions. The Bicester Hunt took out wood to mend fences; the 1987 hurricane had taken its toll; the original Oak woods, on ridge and furrow land, had been taken for the navy; and before the real menace of the grey squirrel had been realised, they were a devastating problem.

Our first stop was at a stand of Ash, Oak and Cherry replanted following the 1987 hurricane which had taken 30% of the trees out. Sadly the Ash, planted and self-sown, was likely to die as a result of the *Chalara fraxinia* outbreak in the not too distant future and the Corsican Pine planted in the early 1980s also looked sick as a result of Red Needle Blight, although there were some signs of recovery. "If you can see through a Corsican Pine, it is not healthy," said the Baron ruefully. The Oak was being thinned and there was still a lot to do but the Baron observed that, fortunately, "the firewood business was good".

Esmond Harris advised against over-thinning the Oak to avoid an excess of epicormic growth. Oak trees prefer growing "in a fur coat" in their early years. He commended heavy thinning in general but not around Oak until they were at least 30 years of age.

Highlights of the remainder of the morning were a stunning plot of self-set Sycamore and some valuable Sweet Chestnut *(below)*. The latter won the admiration of those who knew the value of this versatile, relatively fast-growing as well as beautiful tree. The

Esmond Harris discusses mature Sweet Chestnut.

Sycamore evinced the comment from Peter Goodwin that far from being the non-native menace it is claimed to be by some conservationists, Sycamore was commercially the most valuable tree in Britain after Walnut – as long as squirrel control is rigorous. The high-end users were musical instrument makers, based mainly in Prague or Germany as long as they can take a full load. ***Andrew Falcon added that the Danes warned against over-thinning as Sycamore is very sensitive to thinning and tends to shock if overdone. Also Sooty Bark stain is a problem if the tree is exposed.***

The surprise we came across was a small number of London Plane originally planted in an effort to diversify the species on the Estate. Although they were struggling somewhat, they won the congratulations of Bede Howell who described the beautiful lace wood the trees produce – used in the railway carriages of yore and, added another guest, in pianos.

All this concluded our morning, together with lively debates on the use of tree guards, rippled timber, spotting a valuable burr, leaving standing dead trees (or "providing a hotel for woodpeckers living in a style to which they have become accustomed!" as the Baron put it), spacing, the desirability or not of an under-storey and the genetics of Larch.

At lunch Peter Savill's absence was even more acutely felt as his eponymous Award was presented to Miles Barne; Peter's own nomination. The Peter Savill Award was described by Chairman, Peter Goodwin, as Woodland Heritage's most prestigious and he asked Bede Howell, Past President of the Royal Forestry Society, to present it. Bede described Miles as "not your average Brit. Brits complain but do nothing while Miles sets to and tackles problems". In particular he cited his founding of the European Squirrel Initiative in June 2002, his participation in the Future Trees Trust and the British Hardwood Improvement Programme and much else as well, of course, as the exemplary management of his own woodlands. Receiving the Award, Miles said he loved being a member of Woodland Heritage and was honoured to have been nominated.

A brief visit to the Estate sawmill *(below)* followed where the Baron described his cricket bat Willow enterprise and a new venture into Ash flooring which produced a lovely honey-coloured floor which we were assured was of "ballroom quality". All useable timber was milled for construction on and off-site.

Andrew Falcon waxes lyrical about the stand of pure Oak.

The assembled guests were lost in admiration of a magnificent stand of pure Oak in an FWGS scheme comprising 4,000 Oaks in pots, and 7,500 bare-rooted and dipped in Irish seaweed. Also included were 500 Red Oak planted in 1991. Thinning had been carried out three years ago producing 100 tons of firewood, paying for itself. Following universal congratulations, advice followed on a pruning regime concentrating on the 'real winners'. ***The best trees probably won't become obvious until 25 years of age but pruning effort is wasted on those that are clearly never going to make it. So do not select only those for taking out but rather look to those that should be kept.*** Time and effort should be spent on choosing winners and then, as a separate exercise, those that should be taken out. Bede Howell added that it is not just the obvious rubbish that should be taken out, some may be needed to keep shade on the trunks of the better trees to prevent epicormic growth.

In the mature Diggins Wood, the discussion centred on the good quality Ash there and the threat of *Chalara* which it is unlikely to escape. The Baron was inclined to get it into the market soon while it was 'clean'. Peter Goodwin reported on a new company that had been formed by Edward Brun entitled British Ash Exports which was now operating to take good quality Ash to the Far East via Denmark. He urged those with good Ash to move soon to pre-empt the damage to the timber by *Chalara* and the predictable fall in market prices.

We could not have had a more informative, varied and entertaining day and the thanks were heartfelt as the Baron and his wife were presented with a fine Richard Chapman wood turning as an expression of our gratitude for their hospitality.

***Susan Bell* OBE**

Day 3: Thenford House

The third day of the Woodland Heritage Summer Meeting 2013 provided a wonderful opportunity to visit the gardens of Thenford House, the home of Lord and Lady Heseltine since 1976. We gathered in front of the beautiful 18th century house and were treated to a short introductory talk and then a personal tour by Lord Heseltine of the 70 acres of gardens and arboretum. Considered as probably the most important private collection in the United Kingdom, the arboretum now contains 3,500 different species of trees, shrubs and rare plants, many of which have been collected in the wild. Over the last 40 years of its development Lord Heseltine has received advice on the plantings from no less than Harold Hillier, Lanning Roper, and more recently Roy Lancaster, who has personally provided some of the wild collected plants.

Lord Heseltine explained how, on his arrival in the seventies, there were still some original 18th century plantings but this had been overlaid with Ash which had been planted in the 1920s at nine-yard intervals and by then had become what he described as "Ash beanpoles". One could hardly believe this now as one sees the effects of the planting that has taken place since then.

This garden is truly a monumental achievement for one individual over 40 years. The plantings are largely at random, so one really does not know what one will meet round the next corner. Esmond Harris triumphantly rediscovered a specimen of *Ulmus laevis* which he had donated some years ago. Further on, Lord Heseltine baffled us with an attempted identification of a most bizarre multi-headed Cypress *(top right)* which looked as if it had escaped from a Harry Potter film set! We were not alone in being unable to offer any taxonomic clues to its identification.

There are constant surprises in this arboretum. Around another corner there was a garden consisting of approximately 40 stone troughs, including an ancient Somerset cider press, planted with a variety of miniature trees and shrubs, some of great rarity. After this one comes to one of the highlights of the estate with a group of contemporary sculptures, each set in their own separate room, backed with high, perfectly clipped Yew hedges.

Clearly, the surprise of this garden was the huge sculpture of the head of Lenin, which Lord Heseltine had rescued from a Sussex scrap yard, although it had originally stood on a Latvian public building. It was fascinating to see two great politicians of the 20th century staring at each other!

One then passes the Rill, which is a series of nine formal ponds, each spouting four perfectly balanced fountains and creating a quite spectacular display when viewed along its length. The water exits under a stone bridge into a series of woodland pools leading down to the lake. However, before proceeding down this valley, one is diverted across the bridge to see the old walled kitchen garden. Just outside the walled garden we were treated to a very special example of a very rare Chinese evergreen Oak, *Quercus semecarpifolia*, which is described in Hillier's manual as a small rounded tree, but at Thenford it is a striking large specimen.

The walled kitchen garden was replanted in the late 1990s. It covers two acres and its layout was designed by George Carter in four sections. There is a herb garden, an aviary, a soft fruit garden and a quiet sitting area with a small pool. There is also a vast heated glasshouse range along the south facing side, containing an exotic collection of tropical plants. The centre of the walled garden has a spectacular fountain designed by William Pye.

At this point of the garden tour some may have been suffering from dendrological overload, but Lord Heseltine continued to guide us through the woodland water gardens into an area which contains many trees of Chinese origin and it was interesting to see the two varieties of Davidia, the paper handkerchief tree, namely *involucrata* and *involucrata var. vilmoriniana*, side by side so that one could compare them. We passed 'Heselhenge', Thenford's version of a miniature Stonehenge *(below)* ending up at a spectacular avenue of ancient Yew trees bordering the lake below Thenford House.

At this point Lord Heseltine finished the guided tour and generously left us to ourselves to explore the rest of the gardens. He pointed out the new areas below the lakes where the arboretum continues to expand with new plantings, so that future generations will have even more to see in this extraordinary collection as the new areas develop.

Thenford Arboretum is only open on four days a year by special invitation, but Woodland Heritage, through the auspices of Major David Davenport, was extremely lucky in securing a special visit to this great arboretum.

We are extremely grateful to Lord and Lady Heseltine for their hospitality on the day. Many of us will be talking about our memories of this visit for years to come.

Dr T P Cutler FRCP FLS

The magnificent herbaceous border.

Field Day

◀ *Andrew Falcon and Sydney Draper.*

▲ *Andy Pickup and Martin Price.*

◀ *Jeanette and Esmond Harris.*

◀ *Bede Howell.*

Gavin Munro and Graham Taylor. ▶

Geoff Locke and Mark McCallum. ▶

Michael Brett. ▶

Snapshots

Andrew Williams and Peter Fordham. ▶

▲ A wagon-load of members.

Bede Howell and Esmond Harris. ▶

▲ Miles and Tessa Barne.

Lewis Scott. ▶

◀ Doug Joiner and Gudrun Leitz.

◀ Peter Goodwin presents Ron Keay with his memento.

◀ Hugh Williams.

Woman of the Woods

by Claire Godden

"I went to the woods because I wished to live deliberately..." *Henry David Thoreau, Walden*

I'd been living out of my backpack for nearly two years before I wound up at Prickly Nut Wood, home of woodsman Ben Law. I'd had a rich whirlwind of experiences going from place to amazing place but I was looking forward to staying still for more than five minutes. A year seemed a good amount of time to be somewhere, book-ended by the seasons.

Perhaps I was so used to moving around that I was still seeking motion. The physicality of coppicing and living off grid results in a constant movement of self and logs of various sizes. No staying still, not even for five minutes, moving sticks by day and tending fires by night. I had many a fantasy about how I was going to spend my long winter evenings in the beautiful wooden caravan. I was going to become an accomplished mandolin player and spoon carver. Always a dreamer. By the time the fires were lit, kindling gathered and chopped, food cooked and water carried, my eyes were heavy, bedtime was early and the mandolin gathered dust. But I did enjoy luxuriating in the firelight and candlelight, dinner eaten and work done, precious moments of stillness illuminated in the dark, still woods before my head hit the pillow. Still for five minutes, and a deep peaceful stillness that can only be found by fire, moon and starlight.

There's a heightened clarity that comes from living off grid. Chilly morning air on your cheeks as you're forced out into the world on a winter's morning, wellies and duffle coat on, down the hill to the compost loo, tap frozen, body numbed by cold but brain sharpened by it. Alive to the world, not wrapped in a false centrally-heated bubble, animal senses awake. Life's good when you're on top of the kindling and firewood routine, and when you're not, it feels as if you're fighting against time and elements to get the fire going and the coffee hot in time for work.

Keen-edged cold and sharpened billhooks accompanied us to the coppice, our bodies warmed by the work and the humour and the sparks of the brash fire against winter light. We snedded and sorted our way across the coppice, and as the new year came, with chainsaws in hand we tackled the bigger poles, slowly overcoming my terror of the scary machines and amassing a growing pile of firewood logs and precious straight poles. Later in the year as we were building 'The Roundhouse' at South Harting, I'd proudly look up and know that I'd felled those uprights. By the time the build started at Easter I was muscular from hoiking logs out on my shoulders.

By Easter it was still snowing and the easterly wind through the outdoor kitchen was starting to sap my strength. I'd forgotten that winter doesn't last forever and after five months of moving cold logs, spring was a present of sunshine on skin, daylight after work, bluebells, violets and visitors.

I had the honour of being part of the team building 'The Roundhouse' at South Harting Primary School and it was a joy to work under head builder Dylan Walker and to meet several of Ben's former apprentices. I was nervous about being the only female in the crew, but was relieved to find myself on a very 'pc' building site. My heart smiled when I heard a little girl at the school say "I want to be a builder when I grow up". I liked to think I was setting a good example with my fluorescent safety jacket and power tools. The weather was a blissful contrast to winter. It was a treat fitting shingles on the sun-drenched roof, surrounded by good music and fine company.

A lot of the year I was working at 150 per cent to try atond prove to myself that I was as good a worker

as the lads. I learned that however hard I try I can't always be as strong and as fast as them, but maybe I can offer other things, like problem solving, attention to detail, organisation, ideas and creative thinking.

I want to thank lots of people. I'd like to thank Woodland Heritage for sponsoring my chainsaw tickets and a place on their amazing 'Woodland to Workshop' course. I was living fully immersed in the world of Chestnut coppice and it was great to have my horizons opened up by the course to the world of timber, continuous cover management, sawmills, and Oak.

I now have skills to earn my place in the vehicle of Blackbark, the amazing woodland management co-op I've recently joined in West Yorkshire. I'd like to thank the great staff of the Hollist pub for putting up with me dragging in mud and stealing electricity. Heartfelt thanks also to the Woodrats and their associates for their company and phenomenal parties, and to my friends and family who came to visit me all the way down south. Also to the good people who passed through Prickly Nut Wood this year, and to Ben Law for sharing his home with us, for his surreal humour, venison stews and apple-fuelled antics.

An alien invasive pest with a sting in the tale

by Dr Terry Mabbett

The story of Oak Processionary Moth (OPM) (Thaumetopoea processionea) has a sting in the tale, and in more ways than one. Everybody knows about the urticating (stinging) hairs borne in tens of thousands by larvae from L3 (instar stage 3) onwards, and especially those people in front line control now suffering allergic reaction. Less well appreciated is how the opportunity to stop OPM in its tracks was squandered.

The majority of English Oak trees imported into the UK are traditionally sourced from the Netherlands, Belgium and Germany where OPM was already causing problems well over ten years before it first arrived in the UK. No quarantine measures were in place or contingency plans laid for the inevitable arrival and establishment of OPM. OPM entered the UK as plaques of eggs on 'Cypress' Oaks *(Quercus robur f. fastigiata)* imported from a Dutch nursery in 2005. The trees were subsequently planted on landscape and amenity sites in the London Boroughs of Richmond and Ealing and hatching larvae were identified in the following year.

At this point UK plant health authorities should have done two things:

1. *Pursued a no holds barred eradication policy including tree destruction like that which apparently eradicated the 2012 outbreak of Asian longhorn beetle in Kent. UK health authorities destroyed all trees susceptible to Asian Longhorn beetle (which includes the majority of native species) on an eight hectare site in Paddock Wood. And at the height of the bird nesting season causing nothing short of the avian equivalent of the 'St Valentine's Day Massacre'.*
2. *Slapped an immediate ban on imports of all OPM susceptible Quercus species from EU countries and leaving the EU bureaucrats in Brussels to squawk like those unlucky breeding birds in Kent.*

An OPM control programme was established but it was clearly inadequate to eradicate the pest from its still precarious foothold in Richmond and Ealing. It is not even clear whether the original infested trees from the Netherlands were destroyed.

Instead of a ban, the UK government opted for EU plant passports to accompany all future imports of Oak trees from Europe. The self-certified (by the exporter) status of the EU plant passport is its inherent flaw and EU plant passports relating to OPM have the additional weakness of 'flying in the face' of established adult moth flight patterns.

EU plant passports are designed to assure importers that consignments of Oak trees are nursery grown and sourced from an area where the place of production and its 'immediate vicinity' are free of OPM. 'Immediate vicinity' can mean a distance up to 50 m which sounds reasonable enough until you consider that OPM male and female adults fly distances up to 20 km and 5 km, respectively.

Forestry Commission's head of plant health said in 2007: "We believe we still have a good chance to get rid of OPM while it is confined to this part of the country." OPM was still confined to the western side of London but by 2008 had spread into three neighbouring London Boroughs of Brent, Hounslow and Hammersmith & Fulham.

Forestry Commission (FC) set up a committee (Oak Processionary Moth Outbreak Management Team) but this appears to have been nothing more than an academic club with a sprinkling of municipal desk jockeys thrown in for good measure. Commercial companies doing the hands-on spraying and nest

Larvae at the L3 (third instar) stage onward bear thousands of stinging hairs (Picture courtesy Forestry Commission)

removal work, and with whom the real expertise resided, were purposely excluded from the 'club'. This complete lack of foresight turned out to be yet another fatal flaw in FC thinking (or lack of it) and a core reason why OPM is still very much alive and kicking in England in today.

OPM and how it 'got away'

Much has been made about the lack of uniformity in both interest and cooperation shown by various London Boroughs. The FC's OPM survey reports certainly indicate how some approaches have clearly not helped.

Infestation had been identified in 2006 but 2008 is generally considered to be the year during which OPM 'got away'. UK plant authorities have been carrying out detailed surveys of infested and at risk areas in London since 2007. A snapshot of one particular site survey in 2008* encapsulates in a nutshell why attempts to eradicate OPM failed, and why UK local authorities and landowners are now faced with a multi-million pound control bill into the foreseeable future.

The site in question is simply referred to as '**Richmond – site A**' and described as a mature *Quercus robur* in a private garden. The tree was described as a large and spreading specimen, dominating the garden in which it was growing and the neighbouring garden. A child at the house whose bedroom overlooked the tree had presented an unexplained and unidentifiable rash and it was presumably this which alerted the householder.

He/she subsequently photographed what turned out to be an L6 OPM larva (sixth and final instar stage) and emailed the picture to Richmond Borough Council (RBC). Identification was confirmed via Royal Botanic Gardens Kew and the OPM survey team.

RBC visited the site but failed to find the infestation. The FC survey team re-visited the site on 16th July 2008 and identified one nest with silk strands and feeding damage nearby. "The tree is highly likely to yield several nests and should be climbed", said the report, although apparently this was not carried out.

RBC offered to remove the one nest identified but for reasons described as unclear this was not carried out. RBC's failure to execute removal was reported to the survey team by the householder in September 2008. Comments in the report, which could be construed as excuses, were that the tree had many overlapping branches, making ground inspection difficult, and that the neighbouring garden was not accessible. The tree was protected by a TPO (Tree Preservation Order). The householder had applied to RBC to have the tree removed but "such action could not be justified on phytosanitary grounds," said the report.

*Adult moth stage of **Thaumetopoea processionea** (Oak Processionary Moth – OPM). Egg laden female moths can fly distances of up to 5km (Picture courtesy Forestry Commission).*

In-depth reading of Annual Survey Reports from 2007 onwards shows this kind of situation, and worse, repeated time and time again right across the affected area, making it hardly surprising that attempts to eradicate OPM failed. Only surprise is that OPM is not more widespread and frequent in London than it already is.

Giving up the ghost

Given the lack of central funding and the willpower to get the job done it was abundantly clear from the very start that eradication was not a feasible option, and it did not take long for FC to 'throw in the towel'. In March 2011 FC said it was no longer practicable to eradicate OPM from the 'core outbreak zone' comprising the five contiguous West London Boroughs of Richmond, Ealing, Brent, Hounslow, and Hammersmith & Fulham. FC stopped serving statutory enforcement notices in the 'core zone', leaving local authorities, private landowners and householders to take their own initiative and to continue paying for control.

Instead FC started to serve statutory enforcement notices within a buffer zone of 10 km radius around the 'core zone' and clearly now contemplating containment in lieu of eradication. FC said it would prevent movement of Oak trees, material and debris out of the 'core zone' without actually saying how that would be achieved.

Less than three years later the London OPM infestation covers 12 contiguous boroughs, the five already mentioned plus Kensington & Chelsea, Merton, Kingston, Wandsworth, Sutton, Bromley and Croydon. The Bromley infestation arose from a separate outbreak in the West Wickham area which subsequently spilled over into neighbouring Croydon.

The Bromley/Croydon infestation had festered for at

OPM nest on the underside of a main branch on English Oak (Picture courtesy Forestry Commission).

Spraying chemical insecticide against OPM using a high volume hydraulic sprayer on a golf course in south west London (Picture Dr Terry Mabbett).

least four years before being found and reported by a local resident in 2012. If OPM infestations can go unnoticed for so long in what are essentially suburban areas then it is highly likely that others are present in the UK spreading across less built up areas.

The Richmond infestation leap-frogged the Thames from Hampton on the north side of the River and is now established in the Elmbridge district of Surrey. Some reports suggest that the OPM population in the southernmost part of Richmond (the Hampton area and from where the current Surrey outbreak sprang) started from a separate OPM introduction on Oak trees imported from Europe. FC still claims OPM in London can be contained but that's not what the guys on the ground carrying out control measures say.

Aerial spraying over Berkshire

While this was going on in London a 'satellite' infestation was identified in 2010 at Pangbourne in West Berkshire having been introduced earlier on Oak trees imported from Europe and possibly post-dating requirement for EU plant passports. This was now a completely different ball game with open countryside in Berkshire and beyond beckoning OPM and clearly one infestation that could not be allowed to 'get away'.

The whole area in and around Pangbourne has since been intensively sprayed using ground-based spray application equipment, culminating in May 2013 with a pair of aerial applications of the bacterial insecticide *Bacillus thuringiensis* subsp. *kurstaki* (BTK) over two woodlands on the outskirts of Pangbourne.

Pressed by the media, FC said they were unsure if there was actually any pest infestation in the two woodlands sprayed by helicopter. One was a SSSI (Site of Special Scientific Interest) due to the presence of several rare and protected species of butterfly. This unfortunate comment focussed the attention and wrath of conservation organisations, residents and local politicians and served to downgrade what clearly could have been a sensible move by FC with an eye on future nationwide requirements for the management of OPM.

Be that as it may, the area in and around Pangbourne had been already been sprayed (from the ground) with insecticides which are far more potent and residual than BTK. As such it was not immediately clear why FC aerially sprayed this site in Berkshire.

Presumably not for pest control purposes because how could you possibly measure success when you are unsure about the level of any pest presence and indeed whether the pest is present at all?

Another explanation is that the UK health

*Aerial application of the biological insecticide **Bacillus thuringiensis** subsp. **kurstaki** by helicopter over woodland near Pangbourne, West Berkshire, in May 2013 (picture courtesy Forestry Commission).*

authorities wished to assess any collateral damage to the environment, related to future decisions on the commercial aerial application of insecticides to control OPM. FC announced a five year environmental monitoring programme but assessing any environmental fall out from just one season's sprayings would hardly be relevant. BTK is the most environmentally benign insecticide option but by the same token it is neither potent nor residual in action. In reality BTK would have to be applied in paired sprays every spring over a number of consecutive years for any prospect of OPM eradication.

One on-the-ground private sector source suggested it was a 'kite flying' exercise to gauge reactions of conservation organisations and the public at large. An alternative more jaundiced view claimed UK health authorities were looking to claim credit for eradicating OPM from Berkshire. And none too difficult if OPM was absent from these woodlands in the first place because the private sector had all but wiped the pest in and around Pangbourne out by ground application of insecticide and nest removal.

OPM control at a crossroads

When OPM eventually moves out of London as multiple outbreaks and into the predominantly Oak woodlands of the Home Counties then UK government will have no option but to carry out large scale aerial spraying programmes every year as they do in Germany. What's more, the German authorities actually pay for the service providing the landowner gives his or her permission for aerial application over their property.

For reasons of access and operation ground based spray application equipment is not suitable for OPM control inside forest and woodland, especially within close grown stands. Besides, there are too few ground application resources to cope with multiple OPM outbreaks in the countryside.

Aerial spraying of insecticide at Pangbourne has set a welcome precedent for a nationwide programme that will almost certainly be required in future. Attention has focused on the human health implications but the OPM threat to English Oaks should not be underestimated. OPM is a dangerous tree insect pest in its own right but nobody has really considered what will happen when OPM interfaces with Acute Oak Decline (AOD) now spreading from its East Anglian and Kent/East Sussex strongholds.

Synergistic interaction between these two individually serious problems could prove too much for English Oak to bear. OPM damaged Oak trees in German forests are recorded with large populations of the Oak jewel beetle *(Agrilus biguttatus)*. Oak jewel beetle appears to be a key factor in UK spread of AOD and OPM could further aggravate disease dissemination.

UK deliverance from OPM depended on Defra banning Oak tree imports from Europe when the insect was first recorded in Germany, the Netherlands and Belgium which are the traditional sources for the majority of Oak trees imported into the UK. That opportunity was missed and OPM is now here to stay. Pest control by aerial spraying of insecticide is the order of the day whether we like it or not.

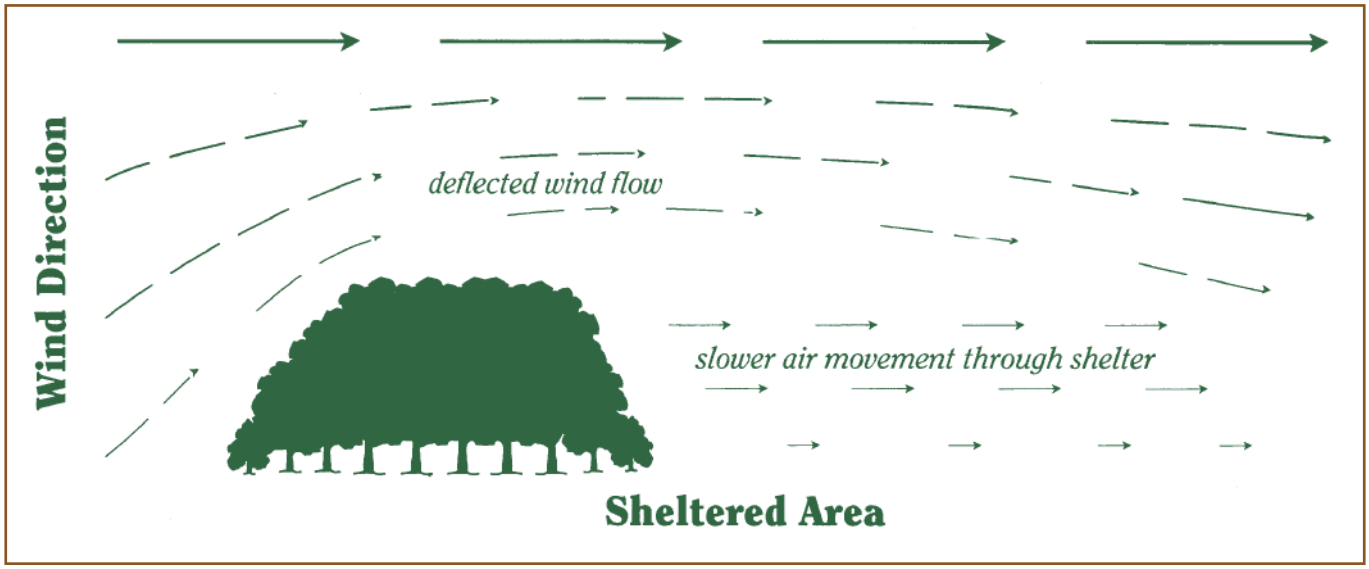
Report on survey and control of Oak processionary moth **Thaumetopoea processionea (Linneaus) (Lepidoptera: Thaumetopoeidae) (OPM) in London in 2008. www.forestry.gov.uk*

CREATING A SHELTERBELT

by John Davis of Tree Shop Ltd

The creation of shelterbelts is one of the most necessary, strategically important and rewarding of any landowner's stewardship of his property. Creating microclimates, linking habitats, conserving water, diminishing flooding, preventing soil erosion, enhancing biodiversity and noise avoidance all rely on a dynamic layout of linking shelterbelts, which then also become 'green lanes' for extending both flora and fauna. Across the world these benefits are being increasingly recognized and quantified. In extreme cases in Africa, crop yields have shown an overall increase of 20% after allowing for land area lost to trees. In fact most crops and stock will show a positive yield response to shelter. Even buildings suffer less heat loss as the wind speed and hence chill effect diminishes.

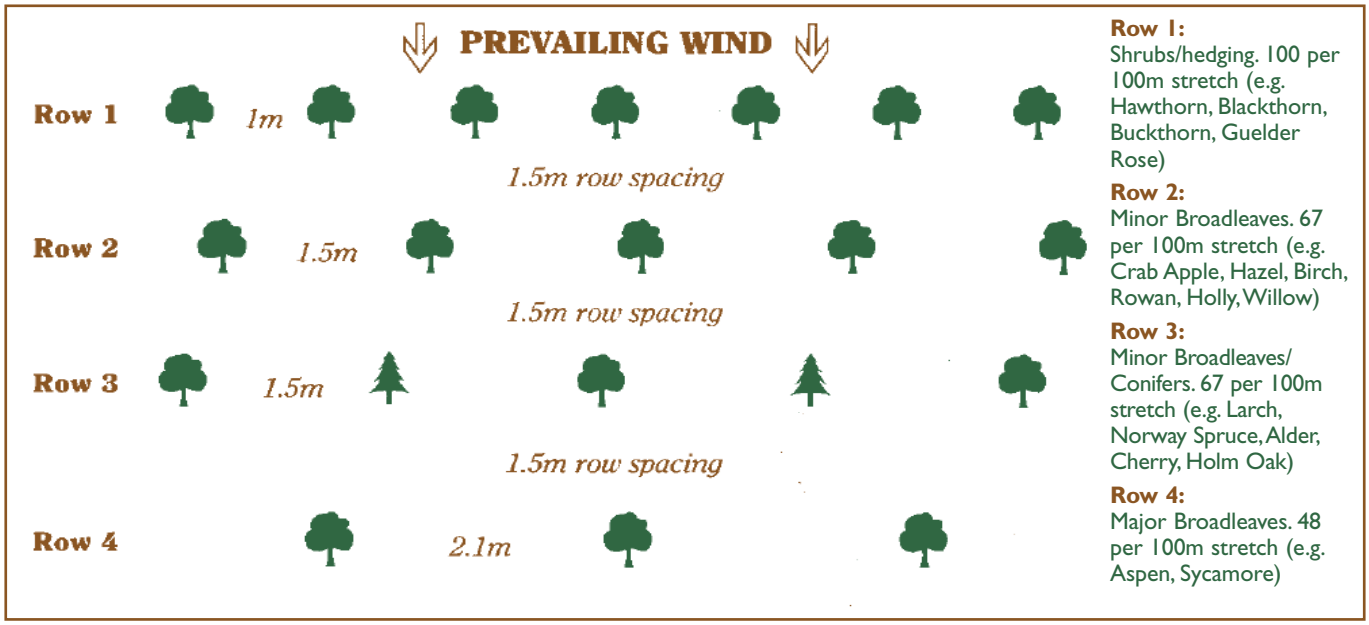
The Shelterbelt at work



A shelterbelt can be little more than an extended hedge. Indeed a small amount of land as little as five metres wide planted with four rows of trees will provide an effective shelterbelt. When creating a shelterbelt a few simple to understand principles can make a dramatic difference to both its effects and results.

These principles can be encapsulated in eight practical rules.

Optimum planting layout for a conservation belt or timberbelt – one side only



Row 1: Shrubs/hedging. 100 per 100m stretch (e.g. Hawthorn, Blackthorn, Buckthorn, Guelder Rose)

Row 2: Minor Broadleaves. 67 per 100m stretch (e.g. Crab Apple, Hazel, Birch, Rowan, Holly, Willow)

Row 3: Minor Broadleaves/ Conifers. 67 per 100m stretch (e.g. Larch, Norway Spruce, Alder, Cherry, Holm Oak)

Row 4: Major Broadleaves. 48 per 100m stretch (e.g. Aspen, Sycamore)

Eight practical rules for shelterbelt planting

1. Width

Plant four rows of closely spaced fast growing trees and shrubs, which will grow to different heights at differing rates as detailed bottom left, carefully observing the spacing between rows and trees. Plant in staggered groups of three, five or seven of each species as preferred.

2. Length

Aim for a minimum length of 25 times the height of the tallest trees. This will ensure the wind does not reduce the sheltered area to a triangle by being forced around the edges.

3. Ends

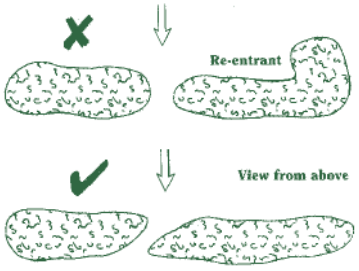
Reduce the planting density towards the ends. Round all corners, and if possible try to accommodate a small leg at each end to increase the effect of edge protection.

4. Permeability

The most effective shelterbelt will incorporate open areas between trees, branches and leaves to a ratio of about 50%. A higher percentage allows too great a windspeed through lower areas, whilst a lesser figure created by dense foliage such as Lawson Cypress, can cause turbulence. Some thinning will be required over time, but no pruning should be undertaken on the outer rows.

5. Gaps

Avoid gaps, openings and re-entrants. If unavoidable, such as in the case of gateways, then it is best to design oblique re-entrants to the prevailing wind, or build an avenue leading to it.



6. Regeneration

Regenerate old and ineffective shelterbelts by planting three new rows of shrubs and smaller trees on the windward edge. Then thin and underplant the old belt, using shade bearing conifer nurse trees such as Western Hemlock.

7. Fencing

Keep stock out with a new stockproof fence at least three metres from the first row. If the fence is rabbit proof, then individual guards will not be required.

8. Maintenance and initial weeding

Weed for half a metre radius around each tree for the first three years. Use glysophate initially for grass control and then add broadshot or a similar product designed to control broadleaved weeds such as thistles, docks and nettles.

Wind stream dynamics

The theory of the sheltered area is simple to understand. High wind speed means high rates of transfer of wind energy, heat, water vapour and noise. This is sometimes called the 'wind chill factor' and the faster the wind, usually the greater the chill.

The well designed shelterbelt deflects the majority of the fast and therefore colder wind upwards, while its 50% porosity allows adequate airflow of the slower and therefore warmer wind. In turn this holds up the faster cold wind, racing over above it. In effect it becomes rather like two plates of wind, the lower plate supporting the upper plate. The warmer, more humid air below tree level is not rapidly mixed with the colder, drier air in the main windstream. Wind turbulence, normally associated with solid, dense structures is also avoided.

How much shelter will result

As a rough rule, and with winds at the right angle to the belt, a significant microclimate will extend about 20 tree heights into the field behind. The longer the shelterbelt, the better the result. Thus the microclimate effect arising from a mature 10 metre high shelterbelt extends 200 metres beyond it. Several acres of land (up to nine acres) will be dramatically transformed and its productive and conservation value enhanced.

Two hundred metres can provide precious additional output to stock and crops. This may mean earlier lambing, less input of food for increased live weight gain in cattle, shelter for horses, better crop yields, and reduced physical damage to crops by wind or windblown soil.

Even a single row of Grey Alder can be effective and is the traditional method used by fruit farmers to diminish the potential damage of spring frosts.

Climate change

Extreme weather events, more intensive rainfall and long periods of drought look likely to become the regular pattern of seasonal activity.

This makes the benefits arising from shelterbelts and microclimates an ever more essential part of a landowner's need to capture better productivity, reduce waste and develop an improved carbon footprint.

A perfect woodland sloping edge.

A Springboard for Common Ash

by Dr Terry Mabbett

The looming crisis for Common Ash at the hands of Chalara Ash dieback disease is putting considerably more pressure on an inherently under-valued and under-exploited native natural timber resource but Ash timber is not under-rated by all. Woodland Heritage paid a visit to a family owned timber business founded in 1991 with a particular aptitude for Ash. Tyler Hardwoods Ltd at Shalbourne on the Wiltshire/Berkshire border has a history in hardwoods and especially native Common Ash. Including the two directors there are 14 members of staff.

Managing director and founder Geoff Tyler's interest in Common Ash springs from his time as a timber technologist. His wife and co-director Jackie is Tyler Hardwood's finance director. Their son and operations manager James joined Tyler Hardwoods in 2007. After discovering a passion for wood machining and furniture, James embarked on a course in Advanced Craft Cabinet Making at Wiltshire College. James has since opened up new dimensions for the company with an integrated approach to utilising Ash involving the whole chain of production, processing, manufacturing and marketing, from forest floor to furniture factory.

Back in 2008 with no Chalara in sight but a recession underway, the 'Ash industry' was beginning to feel the first of many potentially fatal blows with a winding down of traditional Ash users in the furniture industry. "I saw a vital need for promotional opportunities for Ash," he said adding how all the high-end, home-grown Ash trees in the world and premium processed timber is to no avail unless there is a sustainable long-term market for furniture and other finished Ash products. James' worst fears were realised in 2011 when three major Windsor chair manufacturers in various parts of the country went bust.

James Tyler with clean white Ash standing out in the pile.

According to James it is no easy task finding outlets for native hardwoods like Ash at the best of times. Success 'boils down' to specification. "Good understanding and relationships right along the chain from forestry, through us as primary processor to the manufacturers and retailers is essential," says James. "I see my role as searching out innovative ways of using all of our planking (including Ash) in its various grades within the furniture making and other relevant industries."

Integrated Ash timber projects

James went on to describe two flagship projects in which they are currently involved. In January 2013 Tyler Hardwoods obtained a grant from 'South West Timber Development Programme' through 'Silvanus Trust'. The money was used to collaborate with Sitting Firm the Coventry based manufacturer of traditional Ash chairs and farm shops as the retailer element in the equation. Tyler Hardwoods found two well established farm shops for placement of Ash chairs, for own use in farm shop restaurants and for retail sale on site. The two farm shops selected were 'Real Food Store' in Exeter (Devon) and 'Washingpool Farm Shop' in Washingpool near Bridport in Dorset.

As a parallel marketing ploy they told and sold the 'story' behind hand-crafted chairs manufactured from British Ash grown under a system of Continuous Cover Forestry (CCF) to which Tyler Hardwoods is particularly committed. The project subsequently commissioned follow up research to find out how much consumers liked the product, whether they would purchase the products at the asking prices and if not exactly what they would pay. The results are awaited.

You have to commend the reasoning and 'joined up' thinking behind this marketing strategy. The type of customer eating fresh, locally grown food in a farm shop is more likely to appreciate furniture made in Britain from home-grown timber. Sitting down to British roast beef on a traditional Ash chair made in the UK from British grown Ash makes the utmost sense from both an aesthetic and sales point of view.

The second and more all-encompassing project was set up in October 2013 as part of 'Grown in Britain' week. Among the well-known collaborators are the Cranborne Estate in Dorset and forestry consultants Selectfor both well-known for their commitment to

CCF; Benchmark, the manufacturer of hand-crafted contemporary English furniture at Kintbury (Berkshire) and 'right next door' to Tyler Hardwoods; Heal's, the upmarket furniture retailer in Tottenham Court Road in London's West End, and of course 'Grown in Britain' and Tyler Hardwoods itself.

A video made by 'Grown in Britain' captures the story of Ash trees growing on the estate, through felling, sawing and kilning of the timber and finally into Benchmark which has custom designed a range of kitchen/morning room/dining room furniture all in common Ash and including tables, benches and cabinets. The video was launched for public viewing in Heal's West End store during 'Grown in Britain' week.

Ash timber horses for courses

I asked James Tyler about the types and profiles of Ash timber used. "As a company we appreciate and relish Ash for its versatility in tree growth and the resulting qualities of the timber yielded," says James. He went on to distinguish between 'fast grown' Ash which they use for 'steam bending' and the generally larger 'slow grown' Ash trees used for making chair seats and other specific items of furniture.

"What you get is all down to soil and stand structure modified by the nature of 'intervention' within the CCF system whether naturally (mature tree failing to increase soil and air space, soil fertility and light regime) or man-made" said James. He described an example from the Cranborne Estate of two separate stands with trees of equal diameter. The first stand of faster growing Ash had responded to an 'intervention event' while the second with no 'intervention on slower growing trees of the same diameter but 50 years older.

"There is the additional timber colour distinction between 'olive' Ash and 'white' Ash," said James while pointing out how this is not an all or nothing affair. He went to show examples of Ash planks taken from one tree that was uniformly 'olive' except for 100mm of 'white' down each edge, another uniformly 'white' apart from a strip of 'olive' in the centre and a third one that was all white with not a trace of 'olive' coloured wood in sight.

While 'Talking Turkey' on Ash wood colouration I asked James how he thought the arrival of Chalara Ash dieback and particularly the dark discolouration of Ash wood in infected trees might affect marketability. "For white Ash it will clearly be a disaster," said James, but adding how there was 'room to move', when it came to coloured Ash. "Ash is widely stained and painted as a finish for furniture products. The typically 'wide grain' Ash pattern still shows through," he said commenting how the discolouration caused by Chalara (depending on its nature) might actually add to the aesthetics and

Geoff Tyler measuring up a Common Ash log.

attractiveness, in the same way that 'spalting' of Beech wood caused by fungi growing in the wood adds its own value to this British native hardwood. "At the end of the day it may well be a case of finding alternative outlets for Ash timber discoloured by Chalara, provided the wood remains structurally sound," he said.

Ash mechanics at Tyler Hardwoods

I asked James Tyler to give me a run-down on how Ash is transformed from standing trees in the forest to high class furniture. Tyler Hardwoods goes out to source, select and measure up its own Ash logs but they go direct to a 'trade mill' which saws the logs into planks of timber. "We hire out time at the mill so that we can be there to direct and observe the cutting" says James, adding how this is particularly important with Ash given the variation of colouration within a single tree. This leaves Tyler Hardwoods with various sizes of 'through and through' cut planking which is returned to the site at Shalbourne. "We grade the Ash timber according to quality (knot frequency, splits and shakes and grain), by colour and for use, for instance, in stem bending or making chair seats," James told Woodland Heritage.

From here on Ash timber is put into 'stick' for air drying at one year per inch of thickness as a 'general rule of thumb'. "Drying is clearly a long term

Cutting Ash logs at the sawmill.

business" said James, pointing out how it can cause real unforeseen problems for marketing. He explained how they may lay down a lot of timber of particular specification but how the market may no longer be there in several years' time when the drying process is complete. Air-drying is followed by two-three weeks in the kiln. "We can 'play around' to an extent by shortening air drying time and adjusting kiln drying accordingly, but this is not ideal leading to a 'case hardening' defect in Ash as well as bumping up costs," said James.

Staves bent around former.

Once out of the kiln the cured Ash timber is re-graded to become part of the stock to be sold to customers. I asked James how Tyler Hardwoods rated amongst Ash users in the United Kingdom. "There are many other companies that source, cut, dry and sell Ash timber but I think I can safely say that we as a company are unrivalled in both the volume we handle and our commitment to the species," he said.

Properties and profile of Ash timber

We had spent a lot of time talking up Ash and talking about uses and applications but what is it about this sometimes scruffy and non-descript tree that makes the timber so versatile and valuable in such a wide range of uses?

First and foremost Ash (on a per unit basis) sequesters (locks away) more atmospheric carbon dioxide (as solid carbon containing compounds – cellulose, lignin) than any other British native tree. "Ash is good for steam bending and an excellent shock absorber," said James, pointing to its long established use in tool handles, Hurley sticks and coach building. "We are currently working with a manufacturing company to design and make a new 'hybrid' Hurley/Shinty stick that can be used for either sport thus offering a wider appeal and bigger market," said James.

Ash timber machines well and takes screws and nails, while the coarse open-grain wood stains up well. When painted the Ash grain shows through. James says the wood weighs in at an average 670 kg/m^3 although this can vary a lot with fast growing Ash recording less and slow growing Ash correspondingly more.

Ash timber is classed as non-durable for outdoor applications (according to the 'stake test') says James but adds how they are looking at a novel heat treatment process already carried out in the USA and Italy, where heat treated Ash has been successfully used in outdoor applications.

A future for Ash

It's no good appraising the future of Ash without looking Chalara Ash dieback straight in the eye. With fewer than anticipated 'outlying' outbreaks this year Defra is banking on a slower than expected spread. However, the disease has begun to spread out of its Norfolk and Suffolk 'hotbed' into Cambridgeshire and Essex at a speed almost identical to the rate of spread recorded across Northern France (2006-2012) from Alsace/Lorraine in the east to Pas de Calais in the west. At that rate Chalara will engulf Gloucestershire by 2016.

That said mature Ash trees will not die quickly and there will be more than enough timber around for

Lionel Howell, Steam Bending Operator, loading bending staves into steaming vessel.

many years to come. I asked James what he thought about recent moves to export Ash to the Far East but which received a mortal blow even before they started from the incompletely explained ban on European Ash imported into the People's Republic of China (PRC).

"Better than ending up on the bonfire here," says James, "although expanding existing uses of Ash and finding new ones here in Britain would make more sense from the carbon footprint viewpoint as well as helping to bolster and preserve the UK wood processing industry."

He agreed with me that if countries like China had identified appropriate good uses for Ash in building and construction then we could learn from that. Or perhaps more appropriately we could re-learn because many of these applications were probably part and parcel of our forest industry culture, but, like a lot of other things, have been lost to so-called progress. Tyler Hardwoods sells finished Ash timber products as flooring, architrave, skirting and door kits but they are clearly very much in a UK minority.

"As an industry we must develop 'new' uses for Ash timber," says James. In particular by pushing out into the wider building and construction industry with its higher volume uses, and by resurrecting and consolidating our traditional Ash furniture industry making chairs, tables, school desks and utility furniture in general. Creativity and innovative design to use the widest range of Ash timber profile is the key. We can't do this alone and that is why my 'mission' is an integrated one involving all sectors of interested industry from the forest floor upwards working together with a common aim for Ash."

Steam bends ready for dispatch.

English White Ash.

English Olive Ash.

www.tylerhardwoods.com

BOOK REVIEW

THE BRITISH OAK

This book by Archie Miles is beautifully illustrated, mostly with superb colour photographs of ancient trees that he has taken himself, but also with reproductions of postcards, etchings and engravings. He explains that amenity and conservation were not part of the "agenda" during and immediately after the Second World War and this resulted in neglect of many of the ancient Oaks, largely because they were not seen as commercially useful trees. However, recent times have seen a change in attitudes and practices which might prolong their lives. The UK is said to have 80% of all the ancient trees in Europe.

The book is not for people who are looking for information about growing Oaks, and it bears no relation to a 1973 book with the same title edited by MG Morris and FH Perring. It deals mainly with the history and legends surrounding many veteran Oaks and has sections on deer parks, Oak in art and literature, Oak buildings, shipbuilding, Oak crafts and industries and Oak pests and diseases.

Much of the text is taken up with descriptions of historical events that are actually, or are alleged to be associated with various Oak trees. Many relate to Royalty; for example King Charles II is reputed to have hidden from pursuit by Parliamentarians in the Boscobel Oak in Staffordshire and Henry VI is said to have hidden in an Oak at Irton Hall, Cumbria.

Two trees currently hold the joint record for having the biggest girths in Britain, at 42 feet (12.8 m): the Gospel Hall Oak at Grendon Bishop in Herefordshire and the Bowthorpe Oak in Lincolnshire. Until 1755, when it was felled, Damory's Oak near Blandford Forum, Dorset measured 68 feet (20.7 m) around the base, exceeding the current record holders considerably. It was used as an alehouse during the Civil War. Another hollow Oak at Morton-on-Lugg, Herefordshire with a circumference of 62 feet (19 m), was used as a navvys' hut when the railway was being constructed in the 1850s, and later as the stationmaster's residence and ticket office.

There is some fascinating detail in the specialised chapters; for example on ship building; 50 acres of Oak, at 40 trees/acre, were required to build a 74 gun ship. The rise of the East India Company, and their need for ships, created serious competition with the Navy for suitable Oak. The Navy required as many ships as the East India Company. By the end of the 19th century, wooden ship building was in serious decline. One of the last such ships to be constructed was Captain Scott's "Discovery". It was built in Dundee, one of the few remaining ship yards where the necessary skills still existed. The alleged recycling of old ships' timbers into buildings is almost certainly a myth. Most recycled timber came from other buildings.

The author provides sources of some of the information he quotes through the text, but it is a pity there is no comprehensive list of references such as one would find in most scientific and historical papers. However this minor criticism does not detract in any way from this delightful book.

Peter Savill

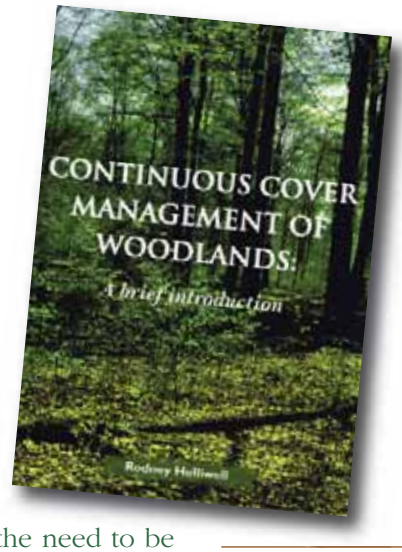
Archie Miles, The British Oak. Constable and Robinson Ltd. Pp 304. 26.7 x 21 cm. Numerous colour illustrations. Index. ISBN: 978 1 4721 0786 2

BOOK REVIEW

Continuous Cover Management of Woodlands: A brief introduction

by Rodney Helliwell 2013 (Author and Publisher)

Sponsored by Woodland Heritage



Rodney Helliwell's latest small book is a very clear and practical explanation of continuous cover management. In fact, short of going in the woods with Rodney himself, it would be hard to find a better guide. Whilst Rodney is (rightly) a strong exponent of more continuous cover management he does not slip into the 'one route to God' zealotry which (equally rightly) antagonises experienced foresters.

Aimed at the less experienced forester/owner, the book gives much excellent general advice, in particular the need to be clear about what you want from your wood and the need for clear planning: continuous cover is a silvicultural system, not an end in itself. As an arboriculturalist as well as a forester, he is also good on aspects important to the owners of smaller woodlands like tree safety along roadsides.

His advice on continuous cover on pages 21 to 23 is flawless: he gets across both the practicalities and the 'feel' of continuous cover, and backs it up with the simplest of diagrams which explain exactly how to select which trees to remove. He doesn't overdo the maths: the precision with which the experts address diameter distribution in the 'ideal' continuous cover stand can be intimidating, but listening to David Pengelly at Stourhead on the 2013 Whole Society Meeting, it is worth bearing in mind that this is the cutting edge, the research establishing continuous cover systems in the UK. How many of us know how the management tables for even aged stands were developed? And how many even-aged conifer stands are currently thinned to within even 20% of management tables? So don't be afraid, dive in and give it a go, following Rodney's very sensible and practical advice.

What is new to followers of Rodney's publications is the chapter on his latest interest: light. Did you realise that the total amount of light striking an English forest in midsummer can be greater than in Kampala at the equator? Or that only 5% of light reaches the ground under closed canopy Oak? This leads to one very practical conclusion that just hadn't occurred to me: Rodney warns against using opaque tree shelters in woodland as some reduce the light by more than 80%, giving the tree inside little chance in locations which are already shaded. For experienced foresters, it is worth buying the book for this chapter alone.

Roderick Leslie FICFor

Copies available from Treesource, Lyndum, Church Hill, Stillingfleet, York YO19 6SA
www.treesource.co.uk
ISBN 978-09576326-0-8.
Price: £9.50 (paperback) 65 pages

Editor's Note: Our thanks to Roderick Leslie and the RFS QJF for permission to reproduce this review.

The Association of Pole-lathe Turners and Green Woodworkers

The Woodland Heritage Awards for 2013 were presented at the Association of Pole-lathe Turners and Green Woodworkers (APTGW) Bodgers Ball, which took place in May at the National Trust's Wimpole Hall, near Cambridge. Over 500 people attended the event and there was a very high standard of competition entries. Many woodland related crafts were displayed and demonstrated, including wheel wrighting, chair making, spoon carving, wattle fencing, hedge laying, hurdle making, horse logging and axe forging.

The winner of this year's 'Best Newcomer' was Mike Church from Sussex. Mike works for Robin Tuppen, having previously trained as an apprentice with him, and makes traditional Sussex Trugs, thus making extensive use of coppice woodland. Since taking a course at Plumpton Agricultural College, Mike has gone on to secure full time work with Sussex Trugs, and is extremely well regarded for his hard working and enthusiastic approach. Richard Charles won the 'Best in Show' with a beautiful Windsor chair.

As ever, it is exciting to see standards improve, newcomers arrive and develop their skills and to watch the range of skills represented within the membership. Participation in related crafts such as coppicing, blacksmithing, scything and leatherwork is increasingly common. Although the chair may be the original bodgers' symbol, watching the rise in the popularity of spoon-making over the past few years has been fascinating, accompanied by a collective improvement in standards. The appeal of an object which can be made with small quantities of wood, perhaps only using an axe, straight knife and crook knife, is clear; the gradual awareness of the unlimited design possibilities for such an apparently simple object is a good lesson for any of us.

The APTGW was created in 1990 by a group of likeminded individuals who wanted to promote the traditional art of pole-lathe turning and green woodworking. Some 24 years on, dedicated local groups are the rising stars of the association, bringing together members and introducing new people to the skills of the green woodworker and associated crafts, so that once again our woodlands are nurtured and valued as a source of employment and enjoyment.

The 2014 Bodgers Ball and AGM will be held from Friday 9th to Sunday 11th May at Playsters Farm, Herstmonceux, East Sussex, BN27 1PX. Each year there is a themed craft competition category to go alongside all the standard ones and add a little extra interest; this year the theme will be 'Something to entertain the children'. Also, this year the 'First Chair' competition will return. For further information, please contact Mike Gordon *mikeinthewood@hotmail.com* or visit ***www.bodgers.org.uk***.

Orlando Hughes
Editor, Bodgers Gazette

Key organisers of the Bodgers Ball, Simon Damant (left) and Mark Allery.

'Best in Show' winner Richard Charles with his stunning Windsor chair.

Jon Warwicker (left), Chairman APTGW, presenting 'Best Newcomer' award to Mike Church.

The Towering Redwoods at Sennowe Park

by Peter Goodwin

Tom Cook is a passionate and very determined forester who has looked after his family's Norfolk woodlands for more than 50 years. He has hosted no fewer than six visits from the East Anglian division of the Royal Forestry Society during his tenure – and no doubt is already planning for the next in 10 years time!

One of the most memorable stops for visitors is to admire Tom's two stands of Coastal Redwoods which he planted in 1964 "to emulate their natural habitat on the west coast of USA and Canada". These have now reached astonishing heights for such an arid landscape which sometimes receives less than 20" of rain per annum. The secret probably lies in the planting sites which have deep moisture retentive soil in the two small valleys. Today, the Redwoods in those valley bottoms reach up more than 120 feet and are thriving – achieving high 20s in the Forestry Commission's "Yield class" tables.

In 1997 some of the most exposed trees suffered a setback from a northerly wind frost which took them two years to recover. That appears to be the only threat to their upward momentum.

Tom Cook (left) addresses members of the East Anglian Royal Forestry Society in September 2013.

Tom is experimenting with a thinning regime in one of the stands, whilst leaving the other to its natural close spacing. The results will be interesting, but in good light, natural regeneration is strong and the species lends itself to coppicing which, in turn, allows Tom to single out strong leaders to nurture into single trees.

Breast height quarter girth (bhqg) of a sample of these ranged from 28 to 30 inches. This would equate to 37 and 40 inches in diameter.

First attempts at sawing these Redwoods have produced good timber – used for floorboards on the estate. This clearly demonstrates the potential of the species in an environment which is (apparently) to be challenged by Global Warming.

Past issues of our journal have featured other stands of Coastal Redwoods in Britain – namely, those at Whitfield in Herefordshire, Camphill in Kent, Longleat in Wiltshire, Brechfa Forest and Leighton in Wales ... now we should add to the list of Champion Redwood Stands the name of Sennowe Park.

"It's coming up on the rails"...

from woodland to workshop

Action from our

2013 courses

from woodland to workshop

Letters to the Editor...

Kent

Dear Mr Goodwin,
Many thanks for allowing us to join you all at Blenheim Park on the 21st June, along with my brothers Simon and Ben.

I must say I enjoyed the day immensely, just seeing the old men of the forest would have been enough for me – I don't mean the human type – but to hear all the intelligent discussions in such beautiful settings, was so very interesting.

I was amazed at the length and breadth of some of your speakers' knowledge, just listening to them filled in many of the gaps made since I retired some twelve years ago.

I was trained in timber production, but side stepped to spend most of my working life in arboriculture and landscaping. It was in this dim and distant past, if my memory serves me right, that our company quoted for the contract to plant the vast Tilia Avenue at Blenheim. Needless to say we didn't win the contract and I may be wrong, but bells rang when Hal Moggridge's name was mentioned.

Yours sincerely,
Nick Simpson

Sussex

Dear Lewis,
I just wanted to say a (belated!) thank you from Nick, Tony and I for a fantastic field weekend again this year. So interesting and enjoyable. It really is a highlight of our summer.

I also wanted to say that it's great news that the government have finally realised that investing in research into AOD is a hugely worthwhile cause. So, well done to you all on your continued persistence with the issue!

Nick and I are currently inspecting Oak trees in Croydon for signs of the Oak Processionary Moth, for the Forestry Commission, a problem that looks set to effect Oaks in the near future. Let's hope that it doesn't take hold here and spread to the rest of Surrey/Kent/Sussex!

Please send our regards to all at WH. We look forward to Scotland next year.

Kind regards,
Mark McCallum,
Bioregional Forestry Ltd
Logs for London
www.logsforlondon.co.uk

Dear Lewis,
I am currently pursuing a satisfying 'recreational' activity, involving thinning a piece of woodland planted by the late Bob Brett (R.B. Brett of North Heigham Sawmills, Norwich), a former WH member.

Sadly Bob's wood is badly neglected, but I am hoping that my (laborious) contribution will make a difference. I have chosen to work with hand tools, namely a Silky Saw fitted with 360mm blade and 5lb felling axe. This is an exhilarating occupation despite having to adapt my skills which I haven't been in the habit of using for many decades.

Here is a picture of Peter Goodwin and Bob Brett when the Norfolk Forestry Club visited Witnesham Sawmills. They had much mutual respect for each other's knowledge and expertise, but more often than not this led to some serious, but good humoured banter, which was interjected with one, or the other stating, "Rubbish!"

I shall look forward to meeting you all in June at the WH Scottish Field Weekend.

Christopher Sharples

Oxfordshire

Dear Peter,
I have just come across this quotation from Jane Austen in "The Dendrologist's Handbook":

"...I like a fine prospect but not on picturesque principles. I do not like crooked, twisted blasted trees. I admire them much more if they are tall, straight and flourishing."

I think she had the right idea!

Regards,
Peter Savill

Suffolk

Dear Lewis,
I have just read your article: *The Challenge of our Time?* And congratulate you for posing this important question, and I agree that Strategy Three is essential for forestry and all that flows from it.

However, in my own 22-acre wood I have a localised problem with some 20-year old Oak trees. The common Oaks in question are in a small area and are showing symptoms of an enlarged base with fissures. This disease either kills the trees or distorts their growth.

The Forestry Commission said it was caused by water being trapped in the base of the tree guard, but I don't believe this is the case – there are few signs of this problem with other common Oaks elsewhere on site.

I have no knowledge about the extent of this problem in the UK. If it is a serious, widespread problem perhaps it should be considered as part of the Oak research project that Woodland Heritage has initiated. I don't have a picture of an infected tree but I could produce one if it would be helpful.

The thought occurred to me that Peter Goodwin, who has a long-postponed invitation to visit my wood, could come and have a look, as he lives locally. The problem is always visible, so a visit could be arranged whenever it was suitable for Peter?

Clearly, there are many ways of establishing what is happening to my common Oak trees, but I was triggered into contacting you on the basis of your thought-provoking article.

Kind regards and many thanks for another splendid edition of the Woodland Heritage Journal,
Malcolm Key

Suffolk

Dear Peter,
Another splendid WH Field Weekend; A Duke, a Baron and a Lord, what more could we want and all of them taking a very real personal interest in their trees which always makes them grow well!

We know how much goes into arranging these outdoor events in the remote places where forestry is practiced and although you gave credit to Peter Savill for the planning, you put a lot into it too.

Getting everyone who has something interesting to say to speak up always makes an outdoor meeting go well and although the weather threatened several times, it was not until we started to drive home and the heavens opened that we realised that you controlled the weather too!

With very best wishes,
Esmond and Jeanette Harris

Norfolk

Dear Peter,
When it comes to politics and making money, I confess I may be a little naive.

In my innocence, or ignorance, I had believed that the Renewable Heat Incentive was created to keep people warm sustainably to the benefit of the environment and our supposedly neglected woodlands, through payments designed to reward the production of eco friendly heat.

However, I have recently come accross cases where the process is being driven totally by the RHI tariff rather than the heating requirements of the individual. This is leading to boilers being installed of sometimes double the required output. People are talking of running their systems all summer with the doors and windows open to collect the payments! The result is not renewable energy but a sudden harvest of a finite natural resource that will produce a vast amount of wasted heat to the sole short term benefit of recipients of the RHI payments and the detriment of our woodlands in which over thinning has already begun.

If that is really the way the world goes round these days, so be it, forgive my naivity but it is utter madness.

Andrew Falcon
New Woods Forestry Ltd

Letters to the Editor...

Dumfries

Dear Peter and Lewis,
Thank you very much for orchestrating another splendid field weekend combining sheer joy in viewing the various places, a warmth of friendship among fellow members, and some valuable insights into woodland management and current problems to be tackled. Members like Alan and I are full of wonder and appreciation at the efforts you put in to make these events so bountiful. Please also pass on our thanks to your fellow trustees for the help they provided and their own expertise and guidance.

We were very impressed with the help you are providing to Forest Research. I think I have made my views clear touching this aspect of woodland/forest management. Whist I strongly disagree with the widespread use of public money to support private activities (subsidies and benefits and a host of different transfer payments) I do believe that in some fundamental national activities it is logical to use social capital – the army, police, judicial system and a few others, but most important of all, without doubt, it is woodland and forestry. Go back to Hugh Johnson's erudite description of the function of trees in creating a breathable atmosphere to support animal life – p.46 of his 2010 edition of "Trees". How can we live without them?

We're also very supportive of the efforts you made to give our younger colleagues some hands on training and deeper understanding of woodland management and conversion to worthwhile products which are sustainable and at least carbon neutral.

With the kindest regards,
As Aye,
Sydney Draper

Suffolk

Dear Peter,
It was so good to see you all at the WH Field Weekend. Thank you for giving us such an interesting and well organised day.

I am also very appreciative of the possession of the cup for one year and the gorgeous little black Walnut container for the medal.

Woodland Heritage field days are always so interesting partly at least because of the mix of people you attract. I very much enjoyed seeing Susan Bell again.
With best wishes,
Miles Barne

Dear Peter,
Ever heard of doing a Safety Risk Assessment?
Man felling a Boabab Tree in Tete, Mozambique.
Kind regards,
Andrew Falcon

Editor: Please do not attempt this at home!

Suffolk

Hi folks,
Just wanted to say a big thank you to everyone involved for a very varied and interesting field weekend this year. The highlight for me was the biggest Oak pollard I have ever seen, and for Diane it was the Lord's trough garden, water garden and sculpture garden at Thenford.

We realise that a lot of effort goes on behind the scenes to get these trips off the ground, and wanted you to know how much we appreciate it.
Thanks and best wishes,
Pete Fordham

Georgia

Dear Peter and Lewis,
I wish you Merry Christmas and a very Happy and Prosperous New Year of 2014! My very best wishes to all Woodland Heritage members as well. I hope you are all fine. I am very well, working for WWF-Caucasus Programme Office. My work is very interesting and sometimes even challenging. In 2014, we will mainly concentrate on forest policy-related work. The state assumes a leading role in the forestry sector by establishing a strong National Forestry Agency.
Best wishes,
Ilia Osepashvili, Forest Officer,
WWF-Caucasus Programme Office.
www.panda.org/caucasus

Ex Deputy Surveyor General of the Royal Forests Shot by Firing Squad

Reports are just reaching us from Kassel in Westphalia that Colonel Andreas Emmerich, one time Deputy Surveyor General of the Royal Forests, was executed by firing squad on July 19, 1809. He had apparently been involved in an insurrection against the French following occupation of Hesse-Kassel and the establishment two years ago by Napoleon of the Kingdom of Westphalia. He was captured towards the end of June at the head of a small band of men. At the time of his death he was seventy two.

Andreas Emmerich was born in Hanau in 1737 and worked for the game and forestry service of the Isenburg family. At the age of 19 he came to England with a Hessian corps. Later he served in Germany in various light corps in partisan warfare against the French. At this time he came to the notice of highly placed sponsors including the Duke of Cumberland, General von Isenburg and Carl Wilhelm Ferdinand the Erbprinz of Braunschweig. About 1760 he was commissioned a Lieutenant in the Jaeger corps of Graf von Schulenburg. At the end of the Seven Years' War in 1763 he served some years as a Forstmeister and manager of the forests of Westphalia for the Prussian King. On leaving this service he returned to England where Lord Granby obtained a position for him in 1775 as Deputy Surveyor General of the King's Forests.

However, at the outbreak of the American Revolution he returned to military service and obtained permission to raise a corps of light troops bearing his name. At first as a Captain and then as a Lieutenant Colonel his chasseurs saw considerable action. After the Revolution he returned to England to continue as Deputy Surveyor.

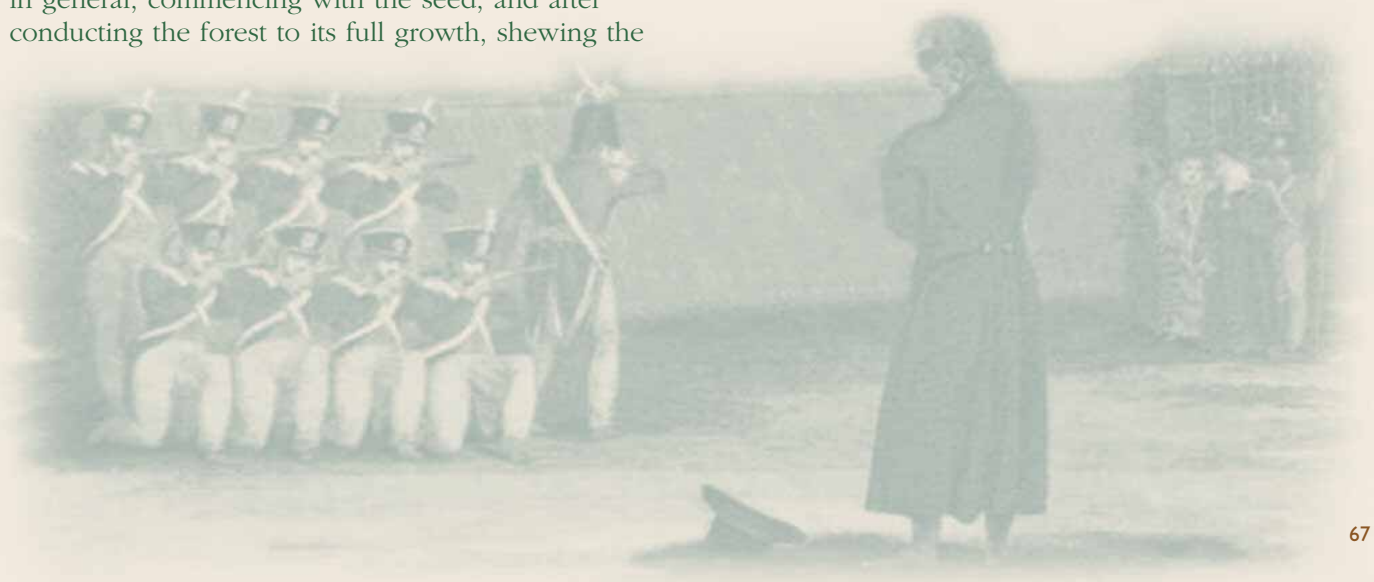
In 1789 he published a book "The Culture of Forests with an Appendix in which the State of the Royal Forests is considered and a System proposed for their Improvement". In this book he endeavoured 'to lay down from my own practice and experience, the rules which appear, first, necessary to be observed in the formation and management of forests in general, commencing with the seed, and after conducting the forest to its full growth, shewing the method of continuing it in preservation. Secondly, I have considered the state of the Royal Forests, Chases and Parks, and proposed a system for recovering them from their present waste and ruin.'

He had strong views on the duties of a forest manager and pointed out that many European countries had colleges where instruction in forestry was given which were attended by noblemen as well as others. He considered that 'A careful forest master must frequently survey the forest under his care in person. His general plans for the conduct and management of it, ought always to be made with so much foresight as to leave him sufficient time to prepare for the due execution of them. The timber to be cut, the enclosures to be made, the ground to be planted, and seed to be sown, should all be ordered in this manner.' He emphasised the need to pay employees well to prevent embezzlement and to enable them to live comfortably. Forest keepers and rangers must be instructed and trained in their duties. 'Sober, stout, healthy people are required for this business which requires attention in the night as well as the day.' If a forest manager paid attention to all his strictures then 'he may expect success in his charge; but otherwise all his plans are useless and his forests will turn to waste.'

Emmerich had planned to produce a second edition illustrated with plates but this never happened. He became very unsettled and travelled widely although he had a family. He did find time to write and published another book on light infantry warfare called 'The Partisan at War'. In 1794 he started a five volume autobiography but only a few pages were written.

Emmerich would have been pleased to see that the new policy just introduced by the Commissioners of Forests is one of disafforestation, followed by inclosure and planting. In this context disafforestation means the release of areas from forest law and the termination of the rights claimed under such law. Hopefully this will allow his ideas to bear fruit.

Written by Howard Wright



First winner of The Prince of Wales Award for Sustainable Forestry – Jocelin Teron

I first met Geraint Richards, the Head Forester at the Duchy of Cornwall, in 2010 at the Canadian Institute of Forestry's (CIF) Annual General Meeting in Jasper, Alberta. Little did I know that Geraint and I would meet again on very different terms in just a few short years.

Geraint Richards with Jocelin Teron, winner of the first ever Prince of Wales Award for Sustainable Forestry.

I was a student at the time, completing the final year of my Honours Bachelor of Science in Forestry at Lakehead University in Thunder Bay, Ontario. Although I was merely two weeks into my school year, it seemed to be racing by. I had just recently been named President of the Lakehead University Forestry Association, and was making plans for the year's events. Simultaneously, I was five months into research for my thesis project, and working part-time at the University as a campus tour guide with the Office of Recruitment for the third year in a row.

Over the next year I chaired the planning committee for my faculty's 43rd Annual Forestry Symposium, a completely student run and funded speaker series which brought in speakers from across the country. I fund-raised with our student committee for our Silver Ring Ceremony, a long-lived CIF tradition, and organised presentations on forestry for my peers to bring to life in local high schools.

Upon graduation, I was selected for the CIF's Gold Medal award by my faculty, and voted as the Valedictorian by my classmates. I would spend a whirlwind seven months in the province of Alberta before heading blindly to Canada's west coast for a position at an up-and-coming consulting firm on Vancouver Island.

I still haven't left the Island, and spend most of my work time planning, coordinating and implementing silvicultural post-harvest activities for a large private forest land owner. My 'office' takes me all over northern Vancouver Island, to the Sunshine Coast and even up to the remote Islands of Haida Gwaii. Consulting has given me a broad range of opportunities to gain real industry experience in my field, building a strong foundation for the rest of my career.

Moving to the Island reconnected me with the CIF and I soon joined the Vancouver Island Section Council as a Director at Large. I help coordinate events with the CIF whenever possible and I have become increasingly involved in forestry education locally. Canada celebrates National Forest Week

Jocelin's working environment: Vancouver Island, British Columbia.

every September, and I joined a group of dedicated local professionals in delivering relevant and exciting events for community members of all ages this past year. Our efforts gained us provincial recognition, and we have already begun planning for 2014.

My colleagues nominated me for the Prince of Wales Award for Sustainable Forestry, and I still cannot put into words how honoured I am to be the inaugural recipient of the award. I travelled to Corner Brook, Newfoundland this past September for yet another CIF AGM, where I would become reacquainted with Geraint and assured that I really had won.

Since then I have had my university thesis project published in the Canadian Field Naturalist journal, which would not have been possible without the generosity of my long-suffering co-author. I have also received the Registered Professional Forester (RPF) designation in the province of British Columbia, which (if you include my schooling) was six years in the making.

I plan to visit the UK this summer to participate in one of Woodland Heritage's workshops, and look forward to seeing the Duchy woodlands myself!

Cheers from across the pond.

Jocelin Teron, RPF
Forester, Strategic Natural Resource Consultants
Campbell River, BC

"You become responsible, forever, for what you have tamed."
"Tu deviens responsable pour toujours de ce que tu as apprivoisé."
- Antoine de Saint-Exupéry

William Brown's Ipswich sawmill in 1944

This beautifully detailed watercolour painting recently came into my hands. It shows a busy scene in 1944 where the Ipswich firm of Willam Brown was converting Oak logs for "The War Effort".

Whilst not exactly complying with today's Health & Safety standards, the mill is well laid out with an overhead gantry crane supplying the two log bandmills below. One is a large horizontal saw (by Pickles?) whist the one on the left is by Stenner of Tiverton. Logs were sourced from East Anglian estates, often requisitioned by the Government, whilst Major Brown's job was to locate the timber and organise its haulage into his mill – not an easy task with a scarcity of men and heavy machinery.

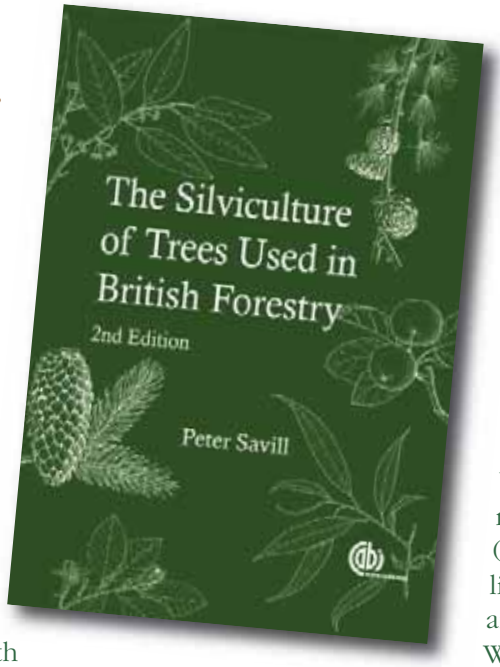
The artist is the renowned Leonard Squirrel who was born in Ipswich and who had an international reputation for his fine draughtsmanship – none better illustrated than in his accurate perspectives in this busy industrial scene.

Peter Goodwin

BOOK REVIEW

THE SILVICULTURE OF TREES USED IN BRITISH FORESTRY

2nd Edition



This is a most timely book. British forestry is now faced with tree diseases on a scale not known before. While it is unlikely that all our Oaks will succumb to Acute Oak Decline, our Ash to Ash Dieback, our Yews to Phytophthora cinnamomi, or our native Scots Pines to Red-band Needle Blight, the infections of these and other trees are serious. Land owners and forest managers now need good information about alternative species and Rosemary Wise's illustrations are a boon to the less well informed.

When planting, or restocking with "normal" species is ruled out by diseases Dr Savill's book describing a wide range of forestry species can therefore be welcomed as a first point of reference. In various places we have "lost" Oak, Elm, Ash and Sweet Chestnut plus Corsican (and to a lesser extent) Scots Pine and Larch. The question therefore arises, "What to plant?" The option of allowing a site to seed up with whatever comes in may suit some research scientists, conservation bodies and the idle. It will not do on a properly managed estate, nor will it do so for whatever body ultimately settles down to carry forward the Forestry Commission's woods. A nation which deliberately neglects its raw materials is heading for problems, thus it is that the wood that stays is the wood that pays.

Knowledge is of little use if it cannot be found when needed. This book is designed for use and can be expected to have a long shelf life, much as did "The Forester's Companion" by NDG James. Each species, in botanical Latin alphabetical order, is described with short paragraphs on its origin, climatic and site requirements, it main silviculture, natural regeneration, flowering, seed production and nursery conditions, its timber and its current place in British forestry. A very comprehensive reference section (going back even before Evelyn) is up to date, some being given by their "www." addresses and this places "Silviculture....." in a central position for academics as well as muddy-boots foresters. It is to Dr Savill's credit that he acknowledges major reference sources within the text, as "Much of what is written below comes from an excellent review of the species (Yew) by Thomas and Polwart (2003)".

Notes occur at intervals about the compatibility of species in mixture, a subject likely to be of increasing interest as forest practice gradually veers from monocultures, but some little hints are felt to be missed – Birch will lean in the wind (which must affect the design of line and group mixtures with Oak) and a note that clonal groups of Wild Cherry are most often butt-rotted, having acquired it from the rotting stump of the parent tree. Similarly, those who have Norway Maple in a woodland know that it casts vast quantities of regeneration and Norway Spruce is a favoured food for grey squirrels in late Spring. However, a valuable part is the regular information on the complex problem of seed storage for various species – it is having a breadth of knowledge encompassed in one book which makes it so valuable.

This book handles well, it lies flat for reading, is on good paper and securely bound – but £75! Serious consultants and managers who lack access to this work, though, will be at a disadvantage vis-a-vis clients who have bought and enjoyed it or been given it by loving spouses!

Bede Howell
Chartered Forester

Peter Savill, illustrated by Rosemary Wise
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West's of East Dean

West's of East Dean are located in the heart of the beautiful Sussex Downs. They pride themselves on being a family firm that has been working with wood since 1809, employing traditional time-honoured methods and the finest materials. Peter West is a member of the Sussex Guild and of the Worshipful Company of Turners.

In June 2009 we held a Wood Fair at our workshops to celebrate 200 years of working with timber. The two-day event was declared a resounding success and attracted over 2,000 visitors. Since then Peter has been regularly asked: "When's the next one?"

West's Wood Fair – 21st to 22nd June 2014

Our aim this year is to showcase the many ways in which wood can be used from firewood to furniture and everything else in between. There will be demonstrations from a Windsor Chair maker, Tree Surgery, Sawmilling, Charcoal making, Marquetry, Bow making, Hurdle making, Chainsaw Carving, Firewood Processing and many other wood oriented and traditional crafts.

We are in the midst of making a full sized wooden Pole Wagon from the plans of a 1905 original, which we hope to have in use and pulled by a pair of working heavy horses.

Once again a Sawmill powered by a steam engine will be in action and sawing logs, which will be winched on board by an old "Matador".

Sawmill.

Adams Axe Men.

Adams Axe Men, the country's best known lumberjack display team, will be in the arena to thrill and entertain. And, subject to necessary approval, there are plans afoot for a Chainsaw Race, along with an opportunity for visitors to try their hand at Axe Throwing and Archery.

Horse logging.

Trade stands selling timber and other wood related items will be there to tempt you and our Workshops and Showroom will be open for all to see some fine furniture, joinery and much more.

But, when the sawdust has got too much for you, a welcome pint will be on tap at "The Wood Turners Rest", along with some live music. On Saturday 'The Skimmity Hitchers' will play Scrumpy and Western Music and on Sunday 'Dawns Vintage Do' will perform songs from the 50s to the 70s.

For more information, please visit www.westswoodfair.co.uk

Tel: 01243 811697 info@westsofeastdean.co.uk

We would like to thank our sponsors:

Fairies don't provide materials for us…

by Kris Vill

On finishing my Woodland year at Prickly Nut Woods I returned to the woodland in Kent, where I'd previously worked, with a head full of new found knowledge and bright ideas.

Walking round the woods this time I was able to see products everywhere; Birch, Hornbeam and coppiced Oak for firewood, Chestnut, Ash and Hazel to build all manner of things, timber trees that were coming of age! With management plan and chainsaw in hand I set about coppicing two acres as soon as the leaves had fallen.

The winter held the usual trials and tribulations for a coppice worker, the frustration of fires that won't take, balanced by the calm of crisp silent mornings. As it wore on I realised how hard it is to juggle hand to mouth employment with full time work in the woods. It began to dawn on me that I could have made a mistake, in that Kent was not the place to start out on my own. ***It's one thing to be able to see a product in a piece of wood, another to make it, and something completely different again to sell it. Knowledge is not enough without tools and a market. I had no capital to invest, limited kit and no contacts, a terrible way to start self employment. So much for bright ideas: I was in danger of being railroaded away from my calling just to survive.***

If Kent was not the place to start this venture it was obvious that Sussex was as I knew people there, they knew me and plenty of them were working in ways I was interested in. I returned to Sussex in the spring, staying in a good friend's caravan.

I started learning the art of ***Charcoal burning*** at Diddling Good Charcoal. It's a type of alchemy! Anyone can make charcoal but following the science, getting the best quality and yield for your labours is witchcraft. It takes a lot of energy to split and load an eight foot ring kiln and, after all the effort and sleep deprivation, you don't want to lift the lid and find all you've made is a mess. The weather was good so burn followed burn and lifelong friendships were forged in the fire, smoke and dust of the charcoal camp.

It was the late Chris Wall-Palmer of Diddling who first spoke to me of 'the tribe', the informal community and connections that exist among the woody folk, part mutual aid and part resource pool. There's nearly always something you need that you haven't got; an extra pair of hands, milled timber, an extraction vehicle, Hazel if you cut Chestnut and so on in a thousand other ways. The tribe is a network that's always exchanging goods, services and knowledge. Like any small community there is the usual mix of rivalries and loyalties, friendships and fall-outs, it's unavoidable and who is considered not

Round wood horse shelter.

of the tribe varies from person to person. Through the tribe I was able to pick up various bits and pieces of work to fit in around the charcoal; saw milling, fencing, helping in a joiners workshop etc.

Working for Rudi Meseg in North Yorkshire was the job that set me up with skills and tools, as over the space of seven months we built six cabins for a glamping site on the Moors. Working alongside Rudi, a Jedi of Roundwood Timber Framing, and the sixfold repetition provided an excellent education while the constant wages kept up with the demand for new tools.

Of course the winter was harsh, shin deep mud flowing through the gates, a wind that blew so hard we had to tie the static caravans down and freezing rain, but again there was a community, new connections and friendships. The timber framers, roofers, internal fitters and joiner, tied by the shared adversity, we worked, ate, drank and laughed together and a bleak humour formed; 'Cactus Town' was born, partly an 'in house' joke, the image of living in a desert starkly contrasted with the machinery-created Somme. We endured, completed the project within the schedule, flaunted our talents and gained new respect.

Since Yorkshire I've been able to take on my own smaller projects, bespoke horse shelters, log sheds, pergolas and the like. I've also had the good fortune to work alongside other master craftsmen on large projects. In particular it was awe inspiring watching Dylan Walker and Andy Gill construct the Round Wood Timber framing company's first reciprocal roof for the South Harting Roundhouse. They're craftsmen you could throw off a cliff and they'd build wings on the way down.

Having the role of volunteer co-ordinator on the project provided a new and exciting challenge for me and I met all sorts of people with varying interests, skills and time. The people who could give an hour

The reciprocal roof of the Roundhouse at South Harting School.

here or there contributed as equally as those who were with us for longer. ***Projects that involve the community are without doubt the most rewarding. We get to build something beautiful and useful, not for the benefit of any one person or family, but the collective. Local people get the opportunity to take a stake and form an attachment to the project. Everybody wins.***

Working with Claire and Mikey, Ben's current apprentices, was an eye opener as it showed me just how much I had learnt. Often I was reminded of myself those few years ago, when I too had no experience but plenty of enthusiasm. Exchanging information, being able to teach and support others is extremely satisfying, I wouldn't be here today without others investing time in me and sharing what they knew and I'm glad to be able to repay that debt when and where I can.

More recently I attended Joe Thompson's course, "Timber Framing from Scratch" at the Weald and Downland Museum (kindly part funded by *Woodland Heritage*). Joe is another master craftsman and fantastic teacher, we built a ten by ten frame without any modern help, learning techniques from a time when being able to read was a luxury; no tape measures or spirit levels in the workshop, we probably shouldn't have had pencils!

I turned up on the course thinking that sawn timber would be square and thus simple to work, the first three rules "Bark in, Bow up, Spring out" cleared that from my head. On the first two days I was silly enough to ask myself 'how are we doing this?' My brain melted. With Joe's method and guidance we did build the frame to the notorious Rizla paper tolerance! By the end of the course I think everyone who attended felt like they had been initiated into the craft and earned their compasses.

Course participants on Joe's course.

I think there is scope to apply traditional timber framing techniques to round wood frames, the points definitely "keep the Gremlins out". Diversity of knowledge provides new ways of thinking, new methods and more to share. There's still plenty out there for all of us to learn.

Over the last three years it's apparent that I have drifted away from my coppice roots and more into timber framed buildings. Now I spend much less time knocking trees over and much more turning them into structures. I really enjoy the creativity, craft and community involved in these projects and working in these teams. I'm passionate about the buildings, small or large, and the benefits that they can bring.

Fairies don't provide the materials for us, someone fells it, someone extracts it, someone mills it and by keeping the materials local there is an obvious benefit to the local rural economy. ***At the same time greater interest in sustainable natural buildings, made with local timber, will create more demand for the management of our native woodlands.***

The whole tribe can benefit and grow.

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The History of the Great Chelsea Cedars

by Dr Tim Cutler FRCP, FLS

The Chelsea Physic Garden was founded by The Worshipful Society of Apothecaries in 1673. The purpose of the Garden from the outset was to provide a training ground where student apothecaries could be taught to recognise plants that they would need to know in the practice of their speciality, and in particular to be able to distinguish them from plants that had physical similarities but were in fact harmful. Hitherto, apothecaries had been taught the recognition of plants on "herborising trips" into the countryside of Kent and Middlesex.

The establishment of a permanent garden on 3.5 acres of land in Chelsea, on the north bank of the Thames, made the teaching of botany to apothecaries much easier. Chelsea at that time was undeveloped and consisted mainly of orchards and market gardens, with a sprinkling of large houses such as Beaufort House and Chelsea Manor House. The journey by boat from Blackfriars was relatively easy and safe.

"The Physick-Garden at Chelsea."

In 1682, within 12 years of its foundation, the Garden was established and worthy of a visit from Dr Paul Hermann, Professor of Botany at the University of Leiden in Holland which had founded a botanic garden in 1590. ***He suggested a return visit by the Garden's head gardener Mr Watts, who visited Leiden in 1683 and returned to Chelsea with a collection of seeds and plants.***

This interchange of material initiated a plant exchange which has continued to the present time. He also obtained and planted at Chelsea four plants of the Cedar of Lebanon, *Cedrus libani*. These were duly planted out at the four corners of the central water tank in the Garden and were first noticed and recorded there by Sir Hans Sloane (the later owner of the Garden and its great benefactor).

In his letter to the botanist John Ray in March 1685 he states ***"One thing I much wonder to see, that the Cedrus montus libani, the inhabitant of a very different climate, should thrive here so well as without pot or greenhouse to be able to propagate itself by layers this spring. Seeds sown last autumn, have as yet thriven very well, and are like to hold out".***

One of these four Cedars produced its first cone in 1725 and in subsequent years the seed was distributed widely over many of the great estates of England. It is believed that the last remaining tree from one of these seeds is still growing in the Cambridge Botanic Garden.

There has been some dispute as to whether the Chelsea Physic Garden Cedars were the first to be introduced to England. There have been claims that the diarist John Evelyn introduced the tree earlier than the Chelsea specimens and planted them in Enfield between 1665 and 1670.

"North view of the Cedar trees in the gardens of the Apothecary's Company, Chelsea."

"South view of the Cedar trees in the gardens of the Apothecary's Company, Chelsea."

A further claim to an early planting is the tree allegedly planted by Dr Edward Pocock, who was chaplain to The Turkey Company at Aleppo in 1629 and returned home to England in 1641, living in Childrey near Wantage.

Another claim for an early planting comes from Chiswick House and yet another from the Earl of Pembroke's home, Wilton House, with a suggestion that their tree was planted in 1638, even before John Evelyn's time. These claims have never been verified.

Two of the Chelsea Cedars were felled in 1771 as they were considered to be causing too much shade on the surrounding plants. The remaining two nearer the river became a well known Chelsea landmark and one lived on until 1878 and the other until 1903, dying from the polluted, smoky London atmosphere, as indeed did many more of the Cedars of Lebanon growing in London gardens around that time.

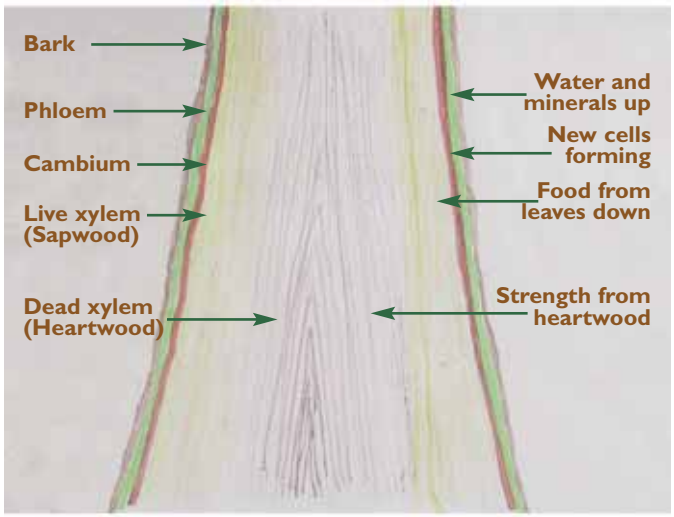
From the timber of the last Chelsea Cedar two items of furniture were made. Both were chairs, and one now resides at Apothecaries Hall in Blackfriars and the other *(above left)* in the Library of the Chelsea Physic Garden.

It will probably never be established exactly when the first Cedar of Lebanon was introduced into England but the best documentation relating to its introduction lies with the four trees planted in The Chelsea Physic Garden in 1683.

QUERCUS QUERKS CONTINUED

by Esmond Harris

May I once again add to the discussion originated by Keith Rawling with regard to the many abnormal growths that occur on the trunks of large Oak trees? In the last issue of Woodland Heritage Keith wrote "…we still have no clear understanding of how or why they grow." In an article on this subject which you kindly published of mine last year I concluded: "When damage occurs the cambium (undifferentiated cells between the wood on the inside and phloem on the outside under the bark), from which all the tree's tissues develop, is distorted resulting in irregular growth of both the wood and the bark." May I now take this further by means of the drawing below, prepared for a local meeting of the RFS last summer, to show how a tree grows and illustrating the tissues that form the wood and the bark, from which these irregular formations occur?



Diagrammatic cross section of tree trunk illustrating the function of the various tissues from which it is made.

From the diagram it will be seen that all the parts of the tree (also the branches and twigs) arise from the cells of the cambium. These are undifferentiated (not specialised) simple cells (comparable to stem cells in animals) which bud off xylem (wood) cells to the inside and phloem (bast) cells to the outside. These two quite different types of cell go on to form the structural tissues, the wood with thick cell walls and the conductive tissues, the phloem with thin walls and large lumens (the open centre of the cell).

Growth occurs as a result of water and mineral salts taken up from the soil being transported upwards through the tube-like phloem cells to the green parts of the tree, the leaves, where the chemical process of photosynthesis produces the energy required for growth in the form of water soluble sap. The sugar rich sap is then transferred down in the xylem cells through twigs, branches and the main stem, supplying the energy required for the growth of new tissues.

Some of the energy-rich sugary sap is stored in the form of insoluble starch in medullary rays running horizontally through the zylem (wood). These are very evident in Oak where they show up as the attractive features in quarter sawn planks.

For several years after the xylem (wood) cells have been formed they are alive and act as the channel for downward flowing sap but after a few years their cell walls are thickened and they die. They then take on the role of providing structural strength so that the upward growing tree can maintain its increasing height. When the xylem cells are alive and carry out their conductive role they form the sap wood but when they die and take on their structural role, they are known as heartwood, the durable timber we are familiar with.

Two Oak trees growing close together which have fused as a result of the left hand leaning tree rubbing against the upright right hand tree. Photo Karen Russell.

Unusual growth occurs as a result of damage to the xylem and phloem cells as they are formed from the cambium and this damage is manifest in the form of the burrs and ridges nicely described by Keith as 'quercus querks'.

Just as burrs form on Oak trees, and occasionally some other species, as a result of damage to the cambium cells whilst forming wood and bark, the same can occur if two parts of a tree rub together. Occasionally one sees a union of branches, or more rarely of stems, fused together. The accompanying photograph ***(left)*** shows two Oak trees growing close together, one of which has leant over on to the other and will have rubbed against it during windy weather, damaging the bark and eventually the cambium of the two trees will have come into contact and thereby grown together. On our farm in Cornwall this occurred between two upright branches of an Oak tree which were close together and at first formed a union with a gap below large enough for squirrels to go through. This hole slowly closed as the two stems increased in diameter until eventually there was no gap between them.

From this rather lengthy description of how a tree grows it will be seen that damage that occurs whilst the xylem and phloem cells are being formed will distort their shape and this distortion is perpetuated in the mature calls causing the 'quercus querks' which Keith Rawling first drew attention to in this journal a few years ago.

The final Quercus Querk query

It seems to be time to end the controversy relating to the Quercus Querk. Esmond Harris has always made it clear that he did not agree that the abnormal growths on Oak trees were anything other than the result of various forms of damage to the stem or trunks. These, he says, result in burrs and all growths developed by the xylem and phloem cells formed by the cambium layer. It is of course true that adventitious buds can originate from groups of cells in the interior of the wound and break out to form burrs and growths of various shapes and sizes.

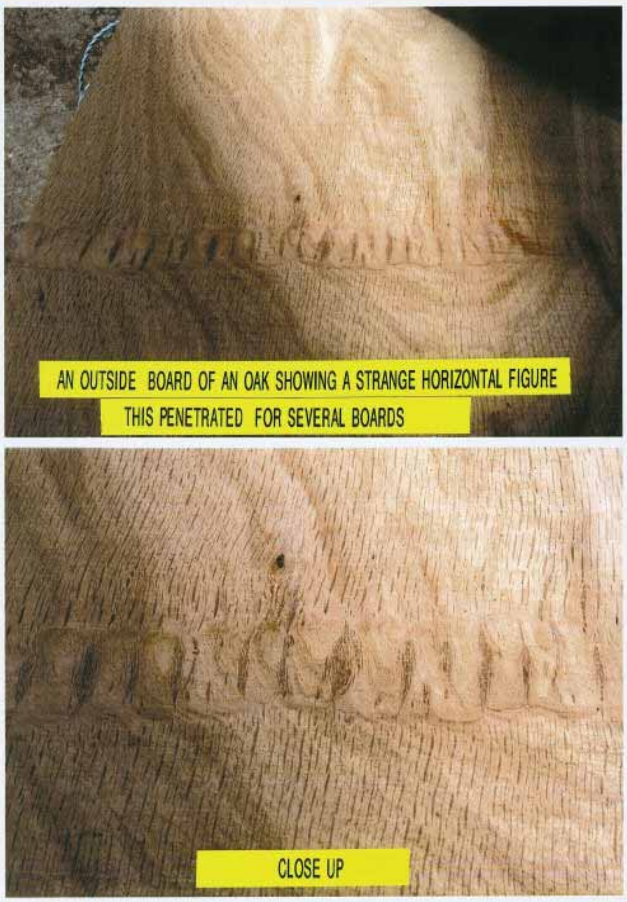
However, what brought about my interest in the Quercus Querk is the fact that these growths show no sign outwardly of any damage and the ones cut through on the cross section of the stem showed no internal damage. They are also devoid of any adventitious buds and growth.

So my interest and concern goes on. Of course I wood say that, if you twig what I mean. Perhaps I shall branch out to some other way of finding the cause, so long as I don't bark up the wrong tree. However, such intense interest can indeed sap you at times as you try to get to the root of the matter. Nevertheless, I'm sure I will be Oakay but if it doesn't burr thinking about I'll just leaf it alone!

Keith Rawling

Another anomaly?

Whilst converting a straight grained English Oak log, the head sawyer at Witnesham Sawmills in Suffolk encountered three boards with a very unusual figuration (below).



There was no evidence of the bark being strangled by wire or ropes in any way, so what caused this very unusual grain pattern?

Cradle of Forestry in the United States

by Ted Wilson, Director, Silviculture Research International

In October 2013 I had the opportunity, along with my colleague Phil Morgan, to present a paper to the Society of American Foresters National Convention in Charleston, South Carolina. It was a truly memorable event. Like many things in the United States it was on a grand scale: 1,500 delegates; presentations and demonstrations over three days in a vast conference centre; an accompanying programme of specialist side-meetings and field trips that filled a week. All in all, it re-enforced the impression of a dynamic, thrusting, science-based profession in rude health. Embracing new ideas, and refreshing tried and tested technologies – all very impressive.

But it was not always like this. The origins of forestry as a professional discipline in the United States are modest and stretch back less than 120 years. By the late 19th century, the US was emerging as a global power; its economy was booming, the population was exploding and everywhere there was demand for natural resources to fuel "progress". For centuries forests were considered to be almost limitless, and often a barrier to development, so little attention had been paid to their health. As John Muir (1838-1914) noted in his famous essay on "The American Forests"[1], trees were often valued little more than "pernicious weeds, extremely hard to get rid of".

The reconstructed Schoolhouse, at the centre of the Biltmore Forest School campus. Classes in silviculture, surveying, tree and plant identification, zoology and law took place here from 1898 – all still core subjects in a professional forestry education.

When the lumber barons reached the west coast, they thought they had struck green gold. Vast groves of enormous Firs and Redwoods were just sitting ripe for the taking. They cut and chopped with abandon, mining the forests with little thought for the future, secure in the knowledge that (as far as they were concerned) the resource was plentiful. However, in a few short decades they had cleared nearly 90 percent of the ancient, towering Redwoods from the face of the planet.

By the last two decades of the 1800s, voices of dissent were starting to stir, and more importantly starting to be heard in the corridors of power, in Washington DC. It was gradually being recognised that without nature and wilderness we were lost as a civilisation. As Muir eloquently wrote, "When we try to pick out anything by itself, we find it hitched to everything else in the Universe."[2] The National Park movement was born, and the Redwoods and other valuable natural resources came under (limited) regulation and protection.

And so where did professional forestry come into the picture? Well, it is a story that takes us back East, as they say, and involves four pioneering men, all four being dreamers and visionaries. It began in 1888 when George Vanderbilt (1862-1914), one of the richest men in America, paid a short visit to Asheville, North Carolina, then a small town situated at an elevation of just over 2,000 ft in the shadow of Blue Ridge Mountains. He fell in love with the area and decided to build his country home there, and create an estate that would rival anything he had seen in Europe.

Within a year he bought 2,000 acres of land and set about building Biltmore House, which to this day remains the largest private home in North America. Through subsequent purchases he eventually amassed over 125,000 acres, much of it spread over the beautiful hills and valleys of western North Carolina. Perhaps most significant was the purchase in 1895 of 80,000 acres of forest land, stretching 20 miles south of Asheville, an area he called "Pisgah Forest".

Vanderbilt was a man of great industry. He dreamed of restoring his land, much of it in a degraded state, to beautiful gardens and lush forests, healthy and thriving again, as he perceived it might have looked in former times. To make this vision a reality he first consulted Frederick Law Olmsted (1822-1903), the leading landscape architect of that time and famous for his design of Central Park, New York. Like John Muir, Olmsted was an early leader in the conservation movement, and was one of the key figures who proposed that areas such as the Yosemite Valley, in California, be preserved and protected from resource exploitation. After touring the property, he advised Vanderbilt that a professional forester should be employed to institute a regime of sustainable

The spartan interior of the Schoolhouse. Classes would be held here in the morning, and then re-convened in the forest for practical work in the afternoon. Schenck was regarded as a demanding yet inspirational teacher.

Dr. Schenck's office. From here Carl Schenck prepared his lectures, wrote technical bulletins, managed the forest estate and administered a profitable timber programme on behalf of George Vanderbilt.

management and restoration, on principles of scientific forestry.

At the time, Vanderbilt's approach was radical and new. There were no professional foresters in the United States, and there were no forestry colleges. However, as luck would have it, a young American, Gifford Pinchot (1865-1946), had just completed a postgraduate course at the French National School of Forestry, Nancy, and returned to the United States with a deep commitment to forest conservation. He was hired by Vanderbilt and, between 1892 and 1895, completed a survey, then prepared and implemented the first forest management plan. As Pinchot later wrote in his memoirs, "Biltmore could be made to prove what America did not yet understand – that trees could be cut and the forest preserved at one and the same time."[3]

In 1895, Pinchot moved on to take the role of chief of the Division of Forestry in the Federal Department of the Interior. Later he would found the Society of American Foresters (1900), serve as the first Chief Forester of the US Forest Service (1905) and be elected as the 28th Governor of Pennsylvania (1923). Upon leaving Biltmore he passed on the mantle to Dr Carl A. Schenck (1868-1955), thereby ensuring that Vanderbilt retained the services of an energetic and committed professional forester.

On his arrival at the estate, Schenck immediately applied innovative scientific management and practical forestry techniques: he established new plantations, set up tree nurseries, developed techniques for seed extraction and perfected new regeneration strategies. In addition, he devised harvesting methods, built sawmills, and introduced splash dams and fish hatcheries in the rivers. All of this was undertaken with great organisational skill and rigour.

At the time of his appointment, Schenck was one of only three qualified foresters in the United States, in addition to Gifford Pinchot and Bernard Fernow (1851-1923). He soon realised that the most limited resource was a supply of professionally-trained foresters. So, in addition to all his work around the estate and with the permission of George Vanderbilt, Schenck founded the Biltmore Forest School and launched a parallel career as one of the greatest of forestry educators.

Opening on 1st September 1898, the Biltmore Forest School was the first professional forestry academy in the United States. The school offered a one-year course of study, and the curriculum focused on traditional classroom lectures in silviculture theory, combined with extensive practical training in the forest. The school operated successfully on the Biltmore grounds from 1898 to 1909, and is credited with graduating many of the leading American foresters in the early 20th century.

In November 1908, to celebrate the 10th anniversary of his school, Schenck organised the Biltmore Forest Fair, which aimed to demonstrate the accomplishments and potential of scientific forest management and practical forestry techniques. The three-day festival played host to a large number of delegates and show-cased the results of Schenck's successful forestry and conservation practices. This could be seen as a forerunner of the large-scale forestry conventions of today.

Sadly, in 1909, Schenck left his position at Biltmore after a disagreement with Vanderbilt. The school continued on at various locations until 1913. By this time several leading universities across North America, including Cornell (1898), Yale (1900), Toronto (1907) and New Brunswick (1908), had embraced scientific forestry and were establishing full undergraduate and postgraduate programmes. Nonetheless, the pioneering work of Schenck in promoting sustainable management theories and hands-on training would influence forestry education throughout North America for generations to come.

Dr. Schenck's writing desk. In the back office, he wrote and prepared the first forestry textbooks in America. The walls were lined with his collection of forestry literature, much of it brought over from his native Germany. There was also a press for publishing his work. The front office was occupied by his secretary and book-keeper.

Black Forest Lodge. Schenck designed and built a number of forest lodges to house his team of Forest Rangers. The lodge is an original Chestnut construction, and the Bavarian architecture clearly reflects Schenck's cultural heritage. This lodge at "The Cradle of Forestry" is one of two surviving examples of this appealing design.

Today, it is possible to visit the site of the Biltmore Forest School, high in the hills of what is now the Pisgah National Forest. Many of the original buildings remain intact, and thanks to the efforts of Dr. Schenck's former students, the old Schoolhouse has been reconstructed. A fine visitor centre close-by is operated by the US Forest Service, and is appropriately called "The Cradle of Forestry". Here the story of sustainable forestry, as a science and profession, is laid out in a lively and entertaining exhibition hall. A proud tradition of education continues, but in a new way and for a new audience.

Of course, the legacy of Vanderbilt, Pinchot and Schenck far exceeds the boundaries of "The Cradle of Forestry", or even western North Carolina. Through the work of a small band of dedicated foresters, a young nation woke up to the fact that its natural resources required careful stewardship to keep them healthy and bountiful. Ideas about scientific forestry that were once thought to be radical have been adopted and applied throughout the United States, and beyond.

Further information:
Cradle of Forestry – www.cradleofforestry.com
Pisgah National Forest (US Forest Service) – www.fs.usda.gov/nfsnc
Biltmore Estate – www.biltmore.com

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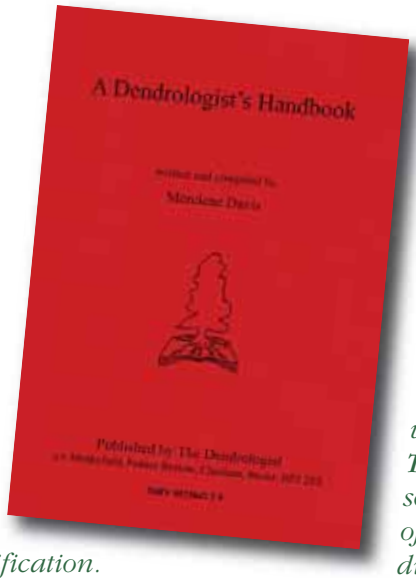
1 Essay published in "The Atlantic", August 1987.
2 "My First Summer in the Sierra" (Houghton Mifflin, Boston. 1911).
3 "Breaking New Ground" (commemorative edition) (Island Press, Washington, DC. 1998).

BOOK REVIEW

A Dendrologist's Handbook

by Peter Savill

Dendrology is the science and study of woody plants – not at first sight particularly relevant directly to woodlands. However it is sad to report that The Dendrologist has had to stop publication after 30 years. It was produced quarterly but ceased because no successor could be found for Merelene Davis, its editor.



This short book contains a wealth of interesting, sometimes fascinating, and useful information. It is in seven chapters:

1. *The start of things – a summary of geological ages and what happened in them, and a description of the basis of plant classification.*
2. *Trees come to Britain – arrival of native trees, the main introductions and the parts played by the plant hunters.*
3. *Essential tree botany – describes the main anatomical features of trees, wood, leaves and flowers.*
4. *Tree management – gives an account of the main considerations to be taken into account when planting trees and their care.*
5. *A purpose for our passion – a miscellany of topics ranging from starting a tree society, tree measuring, dilemmas and possible answers.*
6. *Identifying trees – contains a particularly useful section (p. 40) on the meanings of some of the components of botanical names, a very good winter tree identification section, with clear diagrams of twigs, and pages devoted to showing the shapes of leaves with their descriptive terms, and different types of fruits and buds. The differences between* ***emarginated*** *and* ***retuse*** *leaves, and* ***aristate*** *and* ***mucronate*** *ones are rather difficult to see!*
7. *Addendum – this section includes various articles and items published in* ***The Dendrologist*** *over the years, and some of its information sheets. The last of these is a useful "dendrologist's dictionary", and the book concludes with a list of places (mostly arboreta) where impressive trees can be seen in Britain.*

Many readers will agree with statements in parts of the book, especially those relating to the inconsistent interference by politicians in forestry matters.

This publication is a gem. It is strongly recommended to everyone concerned with forestry. My only criticism is that It is a pity that it is in A4 format which makes it difficult to carry in the field. A smaller size would be much more convenient.

Davis, M. 2014. A Dendrologist's Handbook. Published by The Dendrologist, c/o Monksfield, Pednor Bottom, Chesham, Bucks, HP5 2SS. Pp. 74, 21 x 29.7 cm. ISBN952584239. £10.50

Bringing Scottish Wood to Life

by Nick Marshall

ASHS, the Association of Scottish Hardwood Sawmillers, now in its 15th year, continues to grow in size and scope. Small-scale homegrown hardwood sawmilling is now firmly established as part of the Scottish economy. With over 30 members, ASHS represents the industry, provides training and encourages networking and collaboration between members.

Serra Bavaria SL130i mobile saw. Photo: Nick Marshall

Finished frame. Photo: Steve McLean/Dovetail Scotland

Contrary to popular belief, Scotland is not all mountains and moorland, and there are large areas of lowland and valleys which are ideally suited to growing hardwoods. The quality of timber is very variable, due in large part to the lack of good broadleaved silviculture. Woodland managers, apart from a few notable exceptions, have tended to concentrate on softwoods for timber, leaving the hardwoods for amenity. In the latter part of the 20th century, the hardwood industry in Scotland sold good quality logs out of Scotland while local sawmills concentrated on low-grade bulk products, such as chockwood. Homegrown hardwood sawmilling declined to an almost complete collapse in the 1980s. Recent years have seen a revival of Scottish hardwood sawmilling, with the advent of small and mobile sawmills and links with enlightened purchasers of hardwoods for furniture, construction and joinery. Small sawmills are ideally suited to the variable quality of logs found in many Scottish log sales, and an upsurge of interest in rustic grades, the development of products using small-dimension pieces, and the establishment of many new small timber-using businesses has helped ASHS members prosper.

ASHS was established in 1999 to encourage the expansion of the Scottish hardwood sawmilling industry, through information exchange, public information and promotion, peer to peer training and building links with hardwood growers and sawn timber users. Most members are sawmillers, although some are in allied businesses such as timber frame buildings and furniture-making. Many members are vertically integrated – with a core of sawmilling providing raw materials for joinery or furniture-making on the same premises. Almost all members are micro-businesses – a 2013 survey showed the annual turnover of ASHS members was typically £100-£200k and they employed 1-7 workers. However, the biggest business has an annual turnover of £1.8m and

Oak framework. Photo: Steve McLean/Dovetail Scotland

Finished room. Photo: Steve McLean/Dovetail Scotland

employs 20 people. A conservative estimate of collective turnover would be in the region of £5 million – a significant contributor to the rural economy and rural employment. ASHS members have also pioneered the development and marketing of products using 'minority conifers', such as Douglas Fir, European Larch (pre-Phytophthora) and Western Red Cedar, thus promoting their growing and diversifying Scottish forestry.

ASHS provides information for customers and promotes Scottish hardwoods through its website and Facebook, and by attending events throughout Scotland; it provides peer to peer and expert training at quarterly meetings that also include visits to members' sawmills; it provides opportunities for networking among members through regular meetings and an email group; it liaises with woodland owners and the Forestry Commission about improving the homegrown hardwood log supply and it encourages collaboration among members to deliver orders for larger customers.

Scottish timber is a beautiful resource steeped with its own unique character and heritage. ASHS members can supply a customer's timber needs from fencing to firewood, cladding, doors, mouldings and interior joinery, furniture timber, posts and beams. Most of the timber used in Scotland comes from overseas, but homegrown hardwoods can be as strong, versatile, durable and beautiful as any imported timber and they are much better for the environment. ASHS and the small-scale hardwood sawmilling industry in Scotland goes from strength to strength.

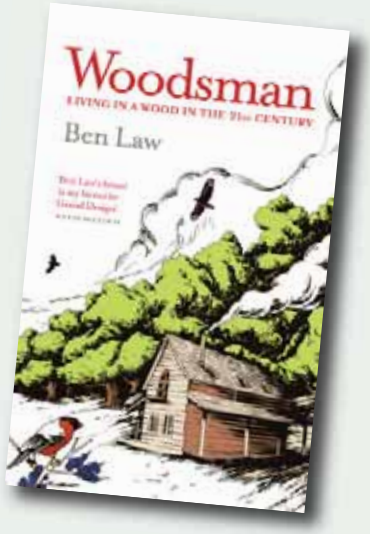
coordinator@ashs.co.uk
www.ASHS.co.uk
www.facebook.com/scottishhardwoodsawmillers

BOOK REVIEW

WOODSMAN

Living in a Wood in the 21st Century

Ben Law has lived as a woodsman in Prickly Nut Wood for over 20 years. Having travelled to Papua New Guinea and the Amazon, observing age-old techniques for living, working in and preserving forests and woodland, Ben returned home to apply his experiences to a 400 year old woodland near where he grew up – Prickly Nut Wood.



Follow the beautiful adventure of Ben Law through the years of life in Prickly Nut Wood. Take each step with Ben through his experiences of starting his woodsman's life. Watch as he observes his new home, his new neighbours of tree's and wildlife, learning how he will be a part of their environment. Ben takes us on a remarkable journey, showing us age old traditions, his revelations, his dreams and his connection with the wood and the land that will forever be his home. This book leaves you with a sense of awe and admiration. It's a true story that will make you value the importance of our natural environment and how we should also respect our woodlands.

Ben Law is a writer, Woodsman, Master Carpenter and Eco-Builder. He lives and works at Prickly Nut Woods in West Sussex, in his unique home which was filmed for Channel 4's Grand Designs.

Copies available from
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Future Trees Trust

by Tim Rowland, Development Officer, Future Trees Trust

Last year was Future Trees Trust's most successful year to date, despite and possibly even because of the drawbacks and challenges that Ash die-back and other imminent disease threats brought to our tree-breeding programmes.

The government ban on transporting Ash seed and trees around the country postponed our plans to establish Ash demonstration plots, just as our Ash seed orchards, improved over 21 years by successive selective breeding and thinning, were producing the UK's very first Tested material under the EU's Forest Reproductive Material regulations..

But our extensive collection of Ash genetic data, our years of experience breeding Ash trees and our network of supporters across the forestry sector helped us to convince Defra that Future Trees Trust, in partnership with Earth Trust, Forest Research and the Sylva Foundation, were best placed to undertake a long-term project to identify Ash trees with good tolerance to Ash die-back, to sample these trees for further breeding work, and to make this material quickly available to industry.

Thus was born the ***Living Ash Project***, which incorporates work programmes to:

- identify individual trees that show good tolerance of Ash die-back
- screen these individuals using genetic markers developed by other Defra funded research
- secure material from these trees in archives for further breeding purposes
- develop techniques for rapid production of tolerant trees for deployment to the forestry sector

The project will also employ citizen science to aid in the identification of tolerant trees. The public are encouraged to get involved by tagging an Ash tree near them and reporting on the tree's progress. Information can be found on the project website ***www.livingashproject.org.uk*** which links to the woodland survey.

In total, including in-kind contributions from the many partners, the project will cost approximately £1.2M and will take six years to complete.

A Future with Broadleaved Trees

In October, Future Trees Trust, in partnership with Forest Research and Earth Trust, launched "A Future With Broadleaved Trees", a strategy document that sets out the case for the wider use of improved broadleaved trees so that they will remain part of urban and rural landscapes for generations to come.

It calls on all those who are involved with or who benefit from these trees – from local and national government and those who own or manage woodland – to charities, NGOs and academic institutions to support three key objectives that will ensure that the woodlands of the future are productive, healthy and resilient.

The objectives are:

- Improving broadleaved trees through research
- Raising awareness of the benefits of using improved broadleaved trees
- Encouraging planting improved broadleaved trees by establishing a strong policy framework

The document demonstrates the significant support there is for tree improvement work, the importance the entire woodland sector places on the work we are doing and the necessity to support our research programmes, field trials, and our advocacy and policy-influencing work.

Lord Rupert De Mauley, Parliamentary under Secretary at Defra, said at the House of Commons launch of the document:"Protecting, improving and expanding our broadleaved woodlands is the essence of what this strategy is setting out to achieve. It will help us to respond to the threats we face and the long-term challenge of climate change".

The document was launched in Ireland by Minister of State for Forestry, Tom Hayes TD at the Botanic Gardens in Dublin in November.

It will take many years to achieve all of the objectives set out in the ambitious document and the Implementation Panel, made up of representatives from the partner organisations, aims to convert the enthusiasm and good-will that the document has created from across the forestry and ecological sectors into concrete and tangible actions.

FTT co-chair Geraint Richards speaks at the House of Commons launch of "A Future With Broadleaved Trees", watched by Ed Vaizey (left) and Lord De Mauley (right).

Copies of the document are available to download at Future Trees Trust's website ***www.futuretrees.org/index.php/component/k2/item/156-a-future-with-broadleaved-trees***

Learning from the experts!

In May, a delegation from Future Trees Trust visited the Netherlands to see the results of a long history of selection and breeding of fine Oaks for timber. The study tour proved to be a great learning experience for all. While there was much discussion and many important issues were raised during the visit, the most significant of these were:

- The insight into the schematic system and the methodology applied to the selection of seed stands in the Netherlands.
- The critical time and methods, as well as invaluable contacts, to improve the vegetative propagation of selected plus-trees particularly the grafting of our older selections.
- The approach and method for developing and establishing roadside seed stands as practiced exclusively in the Netherlands.
- The Dutch system of upgrading seed stands from the category 'selected' to a 'tested' category.
- The level of "foreign" pollination in an Oak seed orchard from outside pollen – over 70%.
- The value of having seed stands along roadsides in terms of ease and cheapness of seed collection is something which the group might consider.
- The possibility of getting more tested seed to market relatively quickly by growing seed stand material in comparative trials – there are possibly several seed stand sources being tested in existing Forest Research provenance trials that could, as in the Netherlands, be upgraded to 'tested' status almost immediately. Similarly, in Ireland, there are a number of seed stand seed sources also in similar trials. These must now be reviewed and classified accordingly.

All funding for the visit was provided by the UK Science Information Network, in collaboration with the British Embassy in The Hague.

Advancing Growth together

Woodland Heritage members will need no introduction to Tubex, as they are the UK market leaders in the manufacture and supply of tree shelters. For many years, their products have been ensuring that young trees get the best possible start in life and their shelters will be familiar to anyone that has planted trees that need protecting, or simply taken a walk through an area of recent planting and seen their 'little green tubes' protecting new trees .

We know that there are almost as many opinions about forestry as there are foresters, but most of us will agree that, in the right circumstances, using a tree guard is a great way to maximise the establishment of a young tree. As a company, Tubex share many of the same values and objectives as Future Trees Trust - 'Advancing growth', giving new trees the best possible start, optimising the economics of forestry, investing in the future of our woodlands and addressing important forestry issues such as climate change and resistance to disease.

A superb road-side stand of Oaks in the Netherlands.

A partnership between Tubex and Future Trees Trust is a natural fit, as we are both committed to many of the same goals. Recognising this, Tubex agreed to support the role of Future Trees Trust's Research Co-ordinator at Earth Trust with a grant of £15,600.

This support has enabled us to employ a Research Co-ordinator, Jo Clark, one day a week for a whole year. In return for their support, Future Trees Trust has agreed to offer various marketing and promotional benefits to Tubex.

We are delighted that Tubex have agreed to support our work in this way, the first such partnership that Future Trees Trust has developed. But hopefully not the last!

www.futuretrees.org

BOOK PREVIEW

Oak: fine timber in 100 years

by Roger Venables

Oaks occupy about 206,000 ha or nine per cent of the forest area of Great Britain and 15,000 ha or 2.5 per cent in Ireland. Rotations are typically 120 to 150 years. They are by far the most important broadleaved trees.

In earlier centuries oak was the main shipbuilding timber and it also provided the beams for many of the great buildings, including York Minster and Windsor Castle, as well as framing for agricultural and domestic buildings and barrels. The decorative appearance of the wood, particularly when quarter-sawn, made it the dominant species used for high-quality furniture from 1600 to about 1680 and also panelling and veneers. Oak is renowned for its durability and strength. It remains the most important broadleaved species in Britain and Ireland.

All British and Irish foresters who have visited France return immensely impressed by the quality of the oak. The trees are usually tall, straight and relatively branch-free. They are grown from prolific natural regeneration. There is little doubt that the French have a magical way with oak that has been the envy of British and Irish land owners and foresters for generations.

Only the best trees pay for themselves, and these can be very profitable indeed, but oak timber can be difficult to sell profitably if it has any of the defects to which it is remarkably prone. Oak produces large, heavy branches and epicormic shoots and is often "shaken". It is beloved by grey squirrels which do enormous harm to the trees. Oaks are also prone to a variety of diseases including, recently, Acute Oak Decline and oak processionary caterpillar. These features all present problems in succeeding with the quest for high quality timber.

It is scarcely surprising, therefore, that the publication of *Le chêne autrement* has aroused such enthusiasm and interest. It was written and published in the original French by Jean Lemaire in 2010 and is the outcome of over 30 years research during which it has been demonstrated that oak can be grown on a much shorter rotation than was previously the practice. It is reminiscent of the popularity of "free grown" oak advocated by the British Forestry Commission in the 1980s and 1990s. We are now very fortunate that it has been translated as *Oak: fine timber in 100 years* by Bede Howell, a British Chartered Forester who has worked in French oakwoods and sawmills, and whose knowledge of oak and its silviculture in Britain is extensive. The translation of the English language edition was mainly funded by a Woodland Heritage supporter in the UK with additional support from Forestry Sector Development/COFORD in Ireland to whom we are greatly indebted. The support provided by Future Trees Trust as coordinators of the project is also acknowledged and, the French Centre National de la Propriété Forestière (CNPF) and l'Institut pour le Développement Forestier (IDF), who produced the original version and who very kindly allowed us to produce this English version.

"Oak: fine timber in 100 years"
Author: Jean Lemaire
Translated by Bede Howell OBE MICFor
Price £30 or €35
Copies available from June 2014 from Future Trees Trust website: www.futuretrees.org or from Tim Rowland on 01453 884264 tim.rowland@futuretrees.org.
Worldwide launch will be at the Woodland Heritage Field Weekend 13th to 15th June 2014.

All profits will be shared between Woodland Heritage and Future Trees Trust.

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Photographer: Chris Sharples.

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