

STTS

Newsletter

July 2018

*(Formerly Men of the Trees following the work of
Richard St Barbe Baker)*



Headline News! Extra visit to the Mayall's Arboretum at Ruyton XI Towns Saturday 30 June at 2pm and Peter's Farm at 6 pm.

From the Chairman

Question; What is the link between climate change science and the soft drinks industry?
See John's write up of the BiFor visit.

Peter has arranged an extra event to make use of the summer to Richard and Anne Mayall's garden and arboretum at Ruyton XI Towns. Peter says 'If there is a more beautiful riverside location in Shropshire then I'm still looking for it'. Directions: from Baschurch cross narrow bridge over the Perry as you enter the village and turn immediately left along a narrow lane for about half a mile, Mill House is at the end. Richard and Anne asked for an idea of numbers (number of cups required!) so could we ask folks to let us know beforehand out of courtesy. Charge will be a couple of pounds for all for tea and cake. Can anyone bring an extra cake or two please?

A small group are visiting the field research work at Peter's Farm (SY4 5RT) in the evening from about 6pm onwards. If anyone wants to join that also they are most welcome. Or just sit in the garden if its a fine evening, Peter usually tries to arrange a brood of swallows to fledge on the day. Refreshments provided so long as you bring your own alcohol, quantities of cordial from the only Temperance bar in the country are always in stock. Contact Peter on 01948 840073 or silvaspinpeter@aol.com for both these events. Regards, David Martin

[Our last Visit – The BiFor FACE experiment and Norbury Estate at Norbury Junction – Saturday, 9 June – By John Tuer](#)

Imagine that you are a professor and you had made a lot of money for an invention, of course you'd give £15 million to your old university for it to embark on an experiment concerning trees, wouldn't you? No? Well of course you would, all being altruistic and passionate about trees. Because that's just what a certain professor did once he had bought a huge estate that included woodland and open areas just waiting to be planted.

In the woodland, Birmingham University used the money to set up the Free Air Carbon dioxide Enrichment (FACE) experiment and provide it with regular top-ups of carbon dioxide held in three large tanks to enable the experiment to continue. To give you some idea of expenses, 4 people are employed at the site and last year's CO₂ bill alone came to £600K. But the initial spending was on the construction of 6 "arrays" encircling six areas of trees, each with a diameter of 30 metres. Within these arrays, towers topping 25 metres hold up perforated pipes and feed CO₂ into them, the gas being ejected into the free air to be taken up by the trees through their stomata for the purpose of photosynthesis where a tree takes in the gas together with water and produces carbohydrates (its plant foods to

enable it to function) and oxygen which, of course, we all need. Sorry if I'm telling grandmothers to suck eggs, but just to complete the story, when the carbohydrates are stored in the stems, the limbs and the roots of the tree (called 'sinks') if they are not used immediately, they are held for future use, to give the tree energy for bud burst, to produce leaves, flowers and seeds and to put on its annual girth.

For the technically minded, 120 tonnes of CO₂ are kept on site in liquid form in the 3 storage vessels. Evaporators heat up the CO₂ to create CO₂ gas which then goes to the woodland. Presently 2 tonnes of the gas are used per hour but the system has the capacity to operate at 6 tonnes per hour (If the present scarcity of CO₂ can be navigated! ed). The system is fully automated but may also be manually operated when the need arises. If there are high winds and the gas is likely to be blown away from the arrays, the system will switch itself off. Each day, the woods "wake up" to a fully enriched environment as the system switches itself on a half hour before sunrise and switches off half an hour after sunset. The isotope of CO₂ used is Carbon 13.

So what is the purpose of spending all this money on all this equipment? You will have heard of 'carbon sequestration' schemes, whereby you may be asked if you wish to offset your holiday flights by planting a certain number of trees. Is this just lip-service or does it really work? Well, this scheme is about this and much more besides. Scientists at Norbury Junction are trying to discover whether, in the future with the increase in CO₂ in our atmosphere, along with other greenhouse gases, much will be taken up by trees. In short, are forests going to be a source of CO₂ or a sink? After all, trees do give out CO₂ during respiration. Here in the temperate Midlands, the experiment is among broadleaved deciduous trees and some holly while similar schemes, as you will have read in the last Newsletter, are operating in different climates. Australia is ahead of us in its Eucalyptus forests at present but as the BIFor scheme only started in 2016, it is too early to have any worthwhile results.

I said that the scheme was about the trees' use of CO₂ and 'more besides'. It is also about the effects in the arrays on soil, fungi, invertebrates and the capacity of the trees to take up nitrogen. As our guide Peter Miles said 'this is international global-level science'. Our thanks go to Peter for spending his Saturday morning explaining everything to us.

David Shorthouse, the Head Forester at Norbury Estate, took us to see the saw mill, the extensive areas of tree planting and a huge yew tree that Andy Gordon measured and calculated to be about 810 years old. The Birmingham professor had employed David to plant many different species of trees to see how they would respond to global warming on his 750 acres. Over 400 acres of this had been newly planted in the past few years with 108 different tree species. Much of the site is run on these environmental lines. The saw mill is powered by solar energy and the boiler runs on woodchip. Felled timber is used in its entirety with nothing wasted. Even the oak burrs are sold to wood turners. In the sawmill, we were able to see piles and piles of oak timber cut and stacked for seasoning.

The professor bought the estate to plant trees and this is what he has amply done, planting 26,000 trees last year alone. Taking this land out of arable production concerned local farmers who think him a mad professor and wonder why he isn't getting immediate returns from his land, he is achieving exactly what he set out to do. He calculated that he needed to plant 350,000 trees to offset his own carbon footprint and that is, again, exactly what he has done.

What a fascinating day! Our thanks to Norbury Park Estate and the two people who gave

up their time to show us around and our thanks, particularly, to our committee member Andrew Allott who organised the whole event for us.

In response to the latest news about CO₂. The BiFOR project obtains its CO₂ from an ammonia plant at Ince in Lancashire. The recent news about shortages of CO₂ tells us that this is because ammonia plants, which produce fertilisers for farming, close down at this time of year for essential maintenance. It seems, too, that there is only one fertiliser plant still open at the minute and this is not the one at Ince. We can only hope that the BiFOR project has stocked up enough of the gas in its three large storage tanks to see it through the shortage.

[Our next visit: Spetchley Park Gardens near Worcester.](#)

It is some years since we visited Spetchley but we do know that it has some special trees and we hope members will come along in good numbers. This visit is not restricted, as have been our last two, so please come along and bring your friends if you wish. Entry is £7 for adults (Seniors £6.50). If numbers allow, we might be eligible for the group rate of £6. So please let me know if you're coming (John Tuer 01952 727642). They would like to have numbers in any case whether or not we make the size to be called a group.

So how do you get there? For those with SatNav, the postcode is WR5 1RS. For those without, directions are straight forward: From Shrewbury, go through Bridgnorth to Kidderminster (on the A442), then from Kidderminster to Worcester (on the A449). On approaching Worcester at a roundabout, turn left towards the M5 onto a large dual-carriageway. On reaching the motorway, go straight across not onto it. You are now on the Pershore road (A4538). Continue on this road for just less than 3 miles and you arrive at a roundabout where the A422 goes left and the A44 goes right. Go right onto the A44 and Spetchley Gardens is on the left after about 2 miles.

We shall meet in the car park at 2.00pm. There is a cafe on site but we recommend arriving wearily or bringing a picnic as it may be very busy.

Please let me know if you're coming by Thursday, 5th July. Thank you.