Spring 2021 *Volume 21.1*

Orchard Link News

'Saving orchards in South Devon'

Geese grazing in Judith Holder's orchard (photo: Judith Holder)

ORCHARD LINK

Orchard Link is a south Devon organisation set up in 1998 by apple and cider enthusiasts concerned about the disappearance of traditional orchards in the area. Its purpose is to promote the restoration and extension of orchards by offering technical advice and support to both existing owners and individuals or groups planting trees for the first time.

At the moment the committee is meeting every month by Zoom. This arrangement will be reviewed when all coronavirus restrictions are lifted.

Contact details

Email: info@orchardlink.org.uk Website: www.orchardlink.org.uk

Officers

Chairman:	Robin Toogood (robin.toogood@gmail.com)
Membership secretary:	Tim Walker (membership@orchardlink.org.uk)
Treasurer:	Peter Webb (treasurer@orchardlink.org.uk)
Equipment hire manager:	Audrey Ryder (presshire@orchardlink.org.uk)
Events/Courses coordinator:	Chris Edwards
Newsletter editors:	Gill Gairdner (gillgairdner@gmail.com) Sue Hallam (susiehallam1@gmail.com)
Community orchards:	Sara Hurley (saramohurley@gmail.com) Tess Wilmot (tess@tesswilmot.eclipse.co.uk)
Publicity/social media:	Sue Hallam (susiehallam1@gmail.com)

Editors

The main theme this issue is managing the orchard understorey, and as Peter Webb indicates in his overview, this is not necessarily a straightforward matter. Several individuals describe the approach they find works best for them and their particular orchard, but there are undoubtedly many other variations out there – it's a challenge for us all.

Copy deadline for the next issue: mid-June.

Gill Gairdner and Sue Hallam

Chairman's bite of the apple

After the frustration of having to cancel all our events and courses over the last year, I am really pleased to alert you to the new programme of monthly presentations, training sessions and gatherings we are launching in this newsletter. These are open to all our members, are free of charge, and will be held online via Zoom. Our events group has planned the themes on seasonal lines and we intend the sessions to be informative, informal and a chance for us to meet each other and share our knowledge and love of orchards and fruit growing.

We look forward to re-starting our usual programme of practical outdoor training courses and in-person events as soon as conditions allow, but online meetings could well continue to have a valuable role.

The hiatus we faced last autumn, when a number of key organisational positions in Orchard Link became vacant at the same time, is now past and we have emerged stronger and with renewed energy. As I have taken on the chairmanship, the happy duty falls to me to thank those office-holders who have recently stood down and express appreciation on behalf of the whole membership of the new management committee team who are bringing their enthusiasm, skills and time to steering Orchard Link in the year ahead. You can find out more about the twelve in a new section of the Orchard Link website, accessed via the 'About' page.

Robin Toogood

Managing the understorey

For this review I'm just considering apple orchards – the requirements of other fruit will be completely different. Likewise I've excluded peripheral hedging: this is important environmentally and requires managing, but it is not strictly part of the *understorey* – the land under or around trees in the orchard.

There is no correct way to manage the understorey in an orchard. Every method involves some degree of compromise.

Managing the understorey is part of the whole orchard management. The first question to ask is: What is the function of this orchard? Is it community based, commercial, part of a smallholding, or simply fun! The answer will provide a framework for the orchard and understorey management.

Managing the understorey is a delicate balance between environment, crop production and harvesting, aesthetic appearance, size of operation and manpower available. Other factors that may play a part are age of orchard, expected yield, size of tree, density of planting and disease control.

Once the function of the orchard has been established one must consider whether it is a new orchard or a mature orchard.

New orchards

Everything should start with planning. At a proposed new site one should take stock of what is already there as potential understorey; usually it is mostly grass! All newly planted trees irrespective of their final size require time to establish – usually 2–3 years, but sometimes longer. In this period an area of approximately 1m around the base of the tree should be kept clear of competing weeds and grasses as excessive understorey will delay tree establishment. Methods currently employed are:

1 Contact herbicides killing weeds/grass. These are readily available but require careful use as they can be very environmentally damaging. The bare soil created will require multiple applications to effect continued control.

2 Mulch mats – plastic or coconut – placed on the ground to suppress weed growth. Readily available but add cost to orchard establishment. The coconut matting will eventually disintegrate; the plastic will require collection after the initial 2–3 years.

3 Mulch from composted material or grass clippings. Access to a well-managed compost heap will be necessary; use of grass clipping will require thought about collection and will depend on size of orchard and available free manpower. There's likely to be a cost compromise along with a major compromise about mowing/grazing or not.

Established orchards

Once the trees have established, intense management of this 1m area becomes less important and understorey management comes to the fore.

Within the orchard, planting density and final size of tree will have a bearing. The final size of the tree is dictated by its root stock, thus careful planning initially along with the orchard's function will dictate the type of understorey management that suits best.

In a small garden or smallholding the understorey may be used for cultivation of flowers or vegetables. Once trees are established this is a practical use of land, although there needs to careful thought about tree pruning to allow light to these cultivations and soil enhancement to supply the necessary nutrients and water. This may require further compromise.

In larger, more traditional orchards concurrent cultivation may not be possible or desirable. Much will depend on availability of (cheap/free) manpower, tree size, acreage and harvesting methods

Traditionally, orchard trees on M106 rootstock (half-sized trees) are planted in straight rows on a set pattern – frequently 2 m apart, 3 m between rows. This is to ensure each tree receives sufficient light and allow access for mowing, weed control and fruit collection. This type of planting produces two understories: the 3m between rows and the 2m between trees. Usually the 3m strip is laid to grass to allow access for harvesting, but in smaller orchards it could be used for cultivation, with 'track size' paths either side. The presence of grass will demand some management and another decision: frequency of mowing. In the absence of cultivation there is no real need to continually mow grass other than for aesthetic and grazing purposes. The more frequently one mows, the more frequently mowing is required. Mowing provides mulch, which may be part of weed control. Lack of mowing will allow longer, often wetter grass with a high environmental value but may prove difficult to control later in the season. Long, wet grass will also be a reservoir for fungal spores and fungal diseases of trees – e.g. scab – and this may be an important consideration in dessert orchards where any blemish reduces value. If aesthetics are not an issue then a balance is to mow in May, then again just before harvesting, i.e. beginning of September. This is, of course, weather dependant: a wet August/September scuppers the plan, making further grass control hard work and probably allowing more fungal disease. Scything may be useful in small orchards, but it is manpower (and also weather) dependent and unlikely to be cost effective in larger acreages. Cutting and removing long grass may be beyond the capability of a domestic lawnmower, especially in larger areas, making one dependant on heavier mechanised machinery. Mowing decisions thus involve grass control, disease control and environmental considerations. The exact mechanism will depend on the function of the orchard. A 'just for fun' orchard permits a more environmentally sympathetic approach than a 'tonnes/hectare' orchard.

The 2m strip *between* trees is equally important and the same choices apply. This is a rich environmental area but some control is still necessary, especially at harvest. Harvesting cider apples from a tangle of nettles and bramble is unpleasant. This area is not so readily controlled using heavy machinery. Swing/sprung cutting heads on mowers are expensive and it is for this reason

that many commercial orchards choose to leave this area as bare soil controlled by contact herbicides. Scything and lighter implements such as strimmers have a place in controlling this 2m area prior to harvest.

Grazing can be an alternative grass-control mechanism. Using animals or geese presents further management issues and is not for the inexperienced. Well-maintained perimeter fencing is a requisite. M106 orchards do not lend themselves to grazing with sheep and cattle are too big and heavy. Young trees will require robust, well-maintained individual fencing to prevent tree damage, and this will have a financial bearing. In a mature orchard, strong M106 trees such as Bramley's or Brown's can be grazed by sheep without tree protection, but weaker species still require protectors. Full-size trees on M25 rootstock are planted with more space (up to 10m) between and are ideal for undergrazing. Sheep are the usual candidates in younger orchards, but as trees mature heavier herbage grazers such as cattle or horses can be introduced. All grazing animals require additional management.

Community orchards may have more than just an orchard function. They may have places to sit or picnic and environmental conservation may an important aspect. Grass areas will still require mowing and the understorey managed along the lines of a wild meadow, with cutback usually in late autumn.

Peter Webb (Milltop Orchard)

Grazing with sheep and geese

I have been managing my one-acre orchard [near Dartington] since 1997. I do not use agrochemicals and minimise the use of machinery; instead, I graze with sheep (see above) and geese. The ecosystem has always been a priority and I have taken advice from people who remember the old traditional ways. Here are some observations made over time.

Hedges are laid in rotation – i.e. not all at the same time – to ensure cover for animals that use them for shelter. Within this perimeter are wild patches – drifts of brambles, an old willow patch, dead trees, more brambles, a stream, a marshy area, etc. There is a pond for wildlife, which the geese also use. Sheep are permanently fenced out of part of the orchard.

We cultivate a range of grasslands to cater for different needs. This is done with cutting and grazing only, and once established, any system is quite easy to maintain. For example, short sward attracts plants that like to be short and is beloved of geese, who keep it that way, whereas grassland that is only topped and not grazed attracts coarse, rank species that neither sheep nor geese like.

Barn owls hunt over ‘undergrazed’ tussocky grass, its thatch hiding the voles which are their main food.

The sheep is said to be the only grazing animal that gives more back than it takes. Their drawback in an orchard is that they like to nibble the bark of apple trees. A loose jacket of chicken wire is effective protection: you just have to remember to remove it before it grows in. Plastic is bad – the bark underneath becomes slimy and harbours pests.

To clear brambles, cut them down and send in sheep to nibble the regrowth and thus kill the roots.

Geese feel right in an orchard; they eat grass and apples, they do not hurt the trees. On the downside they produce lots of evil-smelling poo, but in a wide enough area one hardly notices.

We cut for hay in June or July, or 'top' (cut high) in July or August to allow the grass to grow back before the apples fall. Fallen apples are best preserved in long grass and picking up is unpleasant if this is old and stringy. If apples are not picked up, they encourage nettles; these can be discouraged by a sprinkling of wood ash, which is alkaline like garden lime.

Judith Holder

People's Trust for Endangered Species on understorey

Much of the biodiversity value of traditional orchards is derived from their being a mosaic habitat. Under the sward in the undisturbed soils are abundant worms, ants, insect larvae, moles and perhaps even badgers, all intertwined with a network of mycorrhizal fungi interacting biologically with plant and tree roots. At the edges of the orchard are hedgerows providing the sheltered microclimatic conditions required for healthy fruit trees. An open canopy provides the ideal conditions for lichens and mosses to grow on the sunny but sheltered branches. But a foremost component of the mosaic is the understorey. This can refer to pretty much any non-tree growth above the ground and below the canopy.

There are a lot of options of what to do at this level. Historically, it wasn't uncommon for secondary crops, such as daffodils, to be planted beneath the trees, or an inter-row of bush fruit to be grown until such time as the trees over-shaded it. But maximising income is rarely a priority for traditional orchard (TO) management these days. Textbook TO sward management is to graze or mow for hay. The most uncomplicated method is just to mow the grass regularly, at the very least annually, removing the arisings. Even under such simple management, removal of the cuttings will, in an imitation of grazing, allow the biodiversity interest to develop as the nutrients are reduced and the soil returns to an 'unimproved' state. A step further would be to introduce a mowing regime that keeps some areas – such as pathways –short, but allows others to grow unimpeded until just before harvest, and also leaves some isolated patches entirely uncut. These patches need to be migrated over a 3–5-year cycle to stop brambles or saplings getting too much of a foothold.

Trees on medium- or low-vigour rootstocks need the competition from grass around their trunks to be mercilessly crushed. Mulches can be applied selectively to smother unwanted plants such as couch grass (which shares the same rootspace as trees) while encouraging spring bulbs and more easily managed wildflowers or ones with deeper root systems, like comfrey.

See the PTES practical guides, including one dedicated to the orchard floor.

Steve Oram (PTES)

Swish … swish … swish – the delights of scything

Scythes and orchards go together very well. Grass can be mown up to the trees and under the branches. Machinery may be difficult to use in such circumstances, but with a scythe you can also negotiate fallen branches, benches and even steep slopes.

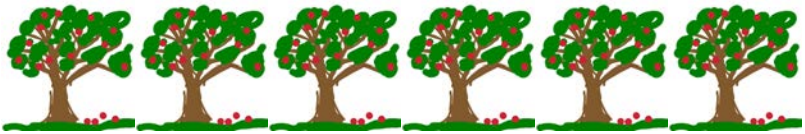
It is a manual tool, yes, but modern Austrian scythes can be remarkably efficient. Go out with a sharp blade, when the grass is moist from dew or light rain, and you will be in heaven! Bear in mind, too, that each stem remains intact, making the gathering up easier. Often the arisings are raked up into a few heaps on low-value ground, to eventually compost down. Personally, I usually manoeuvre the material to act as a mulch around the trees. Last year we made some hay on a very small scale and even produced micro-bales, using a rubbish bin.

There's an opportunity too for encouraging wild flowers, as in any meadow. Cutting after flowers have set seed can be done before the fruit harvest. Scything small areas at a time makes sense, and is great for managing the impact on invertebrates such as grasshoppers. You can selectively scythe lusher parts more frequently, make access for mid-summer pruning and create paths for enjoying the orchard. All that with no noisy engine, just the

meditative swish of the blade through the grass. Feeling at one with your orchard is I believe what attracts people to scything as much as the practical advantages I have described.

Finesse is the key, rather than power, with an accurate slicing cut, low to the ground. Such knowhow and skill will help you get the best out of your scythe – and you will not be alone. The scything community is growing, and there are plenty of instructors to get you started. Do get in touch to find out more.

Chris Riley (*chris@pratensis.net/www.pratensis.net)*



From the nursery: demand and variation

There has been strong demand for fruit trees this winter – across the board, nurseries and garden centres have quickly sold out.

I would guess that some of the drive has come from those who have accumulated Covid's 'involuntary savings', combined with the extra hours spent eyeing up spaces in the garden/field/allotment.

But more than that; planting and growing fruit trees offers a sense of hope, joy and optimism; feelings that remain high in demand after the experience of the last 12 months.

In other news, last May I sent some apple leaf samples to East Malling Services to be DNA-tested for identification. The DNA fingerprint of each sample is compared with a set of reference cultivar fingerprints that have been analysed from the National Fruit Collection at Brogdale (from 2,000+ apple varieties).

Most of the samples I sent came from a collection of very old trees in a garden in Luppitt in the Blackdown Hills, east Devon. There are now only a handful of trees remaining, but nineteenth-century maps show that the half-acre or so of garden was all orchard at one time.

Most of the varieties are what I would kindly call 'farmhouse' apples; acceptable eaters, okay cookers, but not fantastic for either.

But one of them does stand out. It is an exceptionally handsome red-flushed, red-fleshed apple with a sweet strawberry flavour and soft astringency. It hangs on the end of its tip-bearing branches and drops from the tree in early September.

The closest variety I could previously match it to was Lady Sudeley, though several attributes weren't right, and having familiarised myself with Lady Sudeley apples from our stock trees at the nursery, I felt sure it wasn't the same variety.

So I was quite surprised to receive the DNA results; there was a match – and it was Lady Sudeley.

The variation between the apples on 'my' Lady Sudeley and the descriptions of the true Lady Sudeley in reference books and the apples that grow on our stock trees at the nursery is stark.

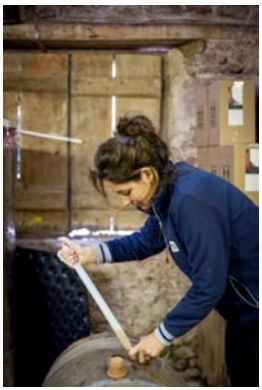
It reminds me just how much we must consider the influence of pruning, shade, soil and elevation on the taste, shape and appearance of fruit when using reference books and fruit samples to attempt identification of unknown varieties.

Another explanation is that the Lady Sudeley growing in the orchard is a sport. The DNA testing at East Malling Services is suitable for cultivar discrimination but does not distinguish between different clones of the same variety, i.e. clonal variants/sports. So perhaps a new sport and a new name? 'Luppitt's Lady Sudeley', anyone?

Visit www.fruitid.com/#help for a request form for sample bags for the 2021 DNA scheme.

Tom Nancarrow (Adam's Apples)

Find & Foster: 'Bordeaux itself will feel the effect of it'!



I founded Find & Foster five years ago when I started researching the decline of traditional orchards in Devon and surveying the orchards for the People's Trust for Endangered species. I was a terrible PTES volunteer and never returned my surveys, but instead was inspired to ask nearby orchard owners if they would like me and my husband to look after their orchards for them and turn apples that were going to waste into cider in order to make this economically viable. (See 'On Your Farm', BBC Rado 4, www.bbc.co.uk/programmes/m000pvc6.)

When we make cider, our aim is to reveal the quality potential of Devon's traditional orchards; they are a museum of extraordinary varieties.

Around the 18th century these orchards were seen as England's answer to French vineyards by noblemen such as Hugh Stafford of Pybes, author of *A Dissertation on Cyder and Cyder-fruit* (1727). Such texts explore cider apples of character grown in Devon and Herefordshire – such as the Royal Wilding, which became the pride of Devon, 'producing cider of such quality that it was held the finest cider fruit in all England', according to Langley's Pomona.

Hugh Stafford's belief that England's finest cider could rival the finest wines of France was so passionate he proclaimed that when the Royal Wilding became more widely known, 'Bordeaux itself will feel the effect of it'! (Below, F&F bottles ageing 'sur latte'.)

Some of the orchards we foster have dozens of different varieties of huge, ancient trees. There are cider apples that fit the bittersharp, bittersweet, sweet and sharp classification. But there are also many culinary, dessert and

multipurpose apples that still produce wonderful cider – such as Veitch's Perfection, a russeted apple that was bred in Exeter in the 1880s, which when fermented has quite a vinous flavour. These trees have been planted by discerning cider-makers and appear to be both grafted and probably transplanted chance seedlings (i.e. no graft marks).

Many people think you can only make cider with proper cider apples. But if you have an orchard planted with non-cider varieties, their fresh acidity and subtlety is perfect for champagne-method cider, and they can produce beautiful fruity and floral notes following secondary fermentation and maturation (left, unknown dessert apple ideal for this process). After all, when Champagne is produced the aim is to create a base wine with little varietal character, and how often do you see apples as a tasting note describing a good bottle of bubbly?

Polly Hilton (Find & Foster)

Supplying fruit into Plymouth?

South Devon has a large, mainly untapped market in Plymouth for locally grown fruit, juice, cider and related products. So, how can we make more connections and develop these opportunities to everyone's advantage? Orchard Link steering group member Tess Wilmot works with Food Plymouth on the Plymouth City–Region's Sustainable Food Places journey. This includes Sustenance Partners, a new research and innovation project exploring barriers to local food accessibility and opportunities for local food producers. This includes researching the local food economy and developing and sharing innovative supportive solutions. (Above, the sustenance Hub pilot project selling local heritage apples.)

The initial research involves:

1 Surveys, including one for Plymouth residents, exploring their relationships with local food. (Please share this with your friends who live in the city!) All entries will be entered into a draw for a £30 local food voucher with Tamar Valley Food Hubs.

2 A series of in-depth conversations with a wide variety of local food growers, agricultural workers, landlords, contractors and food processors of all scales. In addition, businesses which work with or supply the food industry are invited to share their views, in order to get a more holistic picture. Will you please share this information with any local food businesses that might like to get involved.

This project finishes in May. To find out more, please visit the Sustenance Partners website www.sustenancepartners.com/wp/survey or contact tess@tesswilmot.eclipse.co.uk.

Tess Wilmot

Creative orchards

We live in Modbury and have helped in the design and planting of the community orchard on two small areas of land. My husband Andy and I are also landscape architects and if possible we promote and design orchards in every project we work on; we have helped design many orchards for private and community use in Devon and Cornwall. We have also worked on a large arts orchard project on the National Trust Brockhampton estate in Herefordshire; this project is looking to combine art with tree planting to encourage and entice more people out into the landscape. One way of doing this is to think about tree planting in new ways.

Below are a few ways to think about fruit tree planting that might be useful and inspire your new orchard this autumn.

Future harvests?
If possible know what you want in the future – cider? damsons? eating apples? If you are unsure we recommend planting a selection of apples and other fruit that are local and do well in your area. This will help spread the risks and benefits of blossom and harvest over the seasons.

Location?
It is important to have an understanding of your site's soil, orientation, edges (over-shading trees, hedges), size and future management requirements before choosing your trees. Is your orchard very exposed? on the coast? in a frost pocket? very tiny? Is the soil acid or alkaline? A good fruit nursery will be able to direct you to the varieties and rootstocks that suit.

Plant for education in history and geography
For community orchards it is good to plant traditional local varieties, of course, but you can also go beyond county and country.

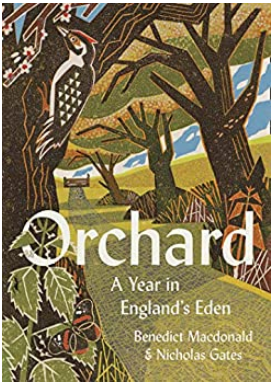
For instance, we planted the variety Grandpa Ailes in Modbury. This is originally from Kazakhstan and the mountains of western China, the historic home of the apple. We like to think of the apple as a very British fruit, but like pyjamas and the bungalow it is not.

We also planted a Flower of Kent apple tree, grafted from the 400-year-old tree belonging to Sir Isaac Newton, and the English codlin apple, thought to be one of the first to arrive and survive from the Roman era.

Children
At Brockhampton next year we hope to plant an orchard for children. The idea is to plant some 50 Herefordshire varieties on smaller rootstocks at closer densities – for example, Pitmaston Pineapple or Pomeroy of Herefordshire on an M26, semi-dwarfing rootstock at 2–3-metre centres. We don't intend to 'dumb down', only make the size and canopy height work better for children, and also people in wheelchairs (for example, by providing a wheelable path between the trees).

Charlotte Rathbone (01548 830629/www.rathbonepartnership.co.uk)

Review of *Orchard – A Year in England's Eden*



This enchanting and informative book by Benedict Macdonald and Nicholas Gates, described on the dust cover as 'a month-by-month journey through one of the most endangered parts of the countryside' follows the year in an old orchard in Herefordshire: a few acres of land, three connected orchard fields undisturbed by man for a long time. After 28 excellent pages of background and history, covering apple beginnings in the Far East, the growth of fruit growing in England, and ending with the decline in orchards in Britain in recent years, we are launched straight into brutal January weather at the farm. Nick and Ben share the writing, taking a month at a time. The detailed knowledge they build up over four years of observation in astonishing. Not surprisingly, many endangered species turn up; many hawks, lesser spotted woodpeckers and waxwings, to name but a few of the birds. Beetles, flies, wasps and bees all get a look in, as do mammals of all kinds.

July, written by Ben, goes European – a trip to Hungary, on the southern tip of the Carpathian mountains, where the staggering biodiversity reminds him (and us) of what we have lost throughout most of Europe since the second World War. Indeed, he believes that the superabundance of insect life there has not been seen in England for at least 200 years!

The plea, unwritten but loud on every page, for a return to sounder, more sustainable agriculture and horticulture is crystal clear.

My only niggle concerns a passage near the end of the book about regeneration; planting new trees to keep the orchard going into the future. He explains about grafting and the smaller rootstocks used by modern commercial growers; then goes on to call these rootstocks 'varieties' and 'species'. Also, no mention of the easy availability of rootstocks (e.g. M25) for standard trees to solve their 'recurring problem'. A bit lazy, especially considering they had expert help from Jim Chapman of the Gloucestershire Orchard Trust!

Tattwa Gyani

Courses and events

To replace, for the time being, our usual events and workshops, we have put together a programme of free Zoom sessions – some skills/training-based and others a presentation around a particular fruit-related matter.

Members will be emailed details as they are confirmed and sessions will also be put on the Orchard Link website. Very much look forward to seeing you, albeit virtually!

Chris Edwards (Events Coordinator)

Thursday, 18 March, 7.30–9.00, Pests and Diseases of Fruit Trees, an illustrated talk by Jeremy Cross (enormously experienced UK fruit entomologist and former Science Leader at NIB EMR), followed by a Q&A.

April, Top Working, with Tattwa Gyani. For anyone wanting to have a go at this – grafting new varieties onto an established tree – now is a good time for cutting and storing the scion wood needed, remembering of course to label everything.

May, Biodiversity in Orchards, with Tess Wilmot and a guest speaker.

June, Pruning of Stone Fruits

July, Summer Pruning of Apples and Pears

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