Marcher Apple Network

APPLES & PEARS

Volume 3 No 2 Non-members £2 Autumn 2020

Reviving the old varieties of apples and pears
in the Marcher counties

Man's official business: Chairman's report

Welcome to our Autumn 2020 edition of Apples and Pears. We very much hope that all members of Marcher Apple Network are managing to stay safe and well. We are pleased to report that it has been possible to find ways for the day to day work of MAN to be continued through these difficult times. Trustees would particularly like to thank Stephen Ainsleigh Rice for his dedication, not only in maintaining routine care of our orchards but continuing to drive forward a programme of rationalisation and new planting. This has been all the more challenging as Ainsleigh lives (only just) on the English side of the border while Paramor, our orchard at Cwmdu, sits in Wales. The attendant travel restrictions due to COVID-19 have been compounded by the prolonged and continuing closure of the A479 to the south of Talgarth, following a significant landslip caused by Storm Dennis, meaning a long detour from Ainsleigh's normal route to Paramor even once the border was opened.

Arrangements for the governance of MAN under COVID-19 restrictions

Prior to the arrival of COVID-19 in the UK, the 26th Annual General Meeting of the Marcher Apple Network was due to be held in November 2020. In the new circumstances, and with continuing uncertainty about future changes to government advice on activities and behaviours, your Trustees have reached a decision not to hold this year's AGM in person. We have not done this lightly, but have been mindful of our responsibility to take special care in view of the age profile of our membership, committee and Trustees. As well as considering our own Articles of Association, we have found the Charity Commissioners' published advice helpful.

First, we had to establish our ability to make alternative arrangements to hold a meeting of our Trustees. Clause 50 of our Articles of Association allows for a resolution in writing signed by all Trustees to be valid and effectual as if it had been passed at a meeting of the Trustees duly convened and constituted. We recorded a decision on 26th May 2020 that, until further notice, the Trustees of Marcher Apple Network will consider any business necessary by exchange of email and will take decisions by a simple majority of votes cast within seven days of an email having been sent. The Charity Commissioners recognise that coronavirus is having a major impact on charity events and that the government's health advice may lead to some charities having no choice but to decide to cancel or postpone their AGMs and other critical meetings. Our Articles of Association require a quorum of 5% of the membership for an AGM. Based on a membership of 300, we would need to secure the attendance of at least 15 people. Given the age profile of the most loyal amongst our membership, and our geographical distribution, we believe that this would be challenging.

It was also proposed that, as in previous years, we include a copy of our Annual Report and Summary Accounts in this, the Autumn 2020 Issue of Apples and Pears, but on this occasion it will be for information only. Trustees will consider approval of the annual report and accounts by exchange of email in October, in lieu of our normal meeting. They will be submitted subsequently and as required to Companies House and the Charity Commissioners.

After this decision was made, a new piece of legislation came into effect on 25th June 2020 which includes a more flexible framework for the holding of members' meetings, such as an ability to hold meetings electronically even if not currently authorised under an organisation's governing document. Unless extended by secondary legislation, the flexibility offered by the Corporate Insolvency and Governance Act 2020 lasts only until 30 September 2020. Your Trustees will keep the guidance and their responsibilities and options under review.

We would encourage members to raise any ideas or concerns which you might otherwise have expressed through an AGM. This can be done by writing to the Company Secretary at the address on the back cover of this publication, or by email to secretary@marcherapple.net, and we will endeavour to give a considered reply. If for any reason, you are not satisfied with the response, it will be discussed at the first opportunity that we can hold an AGM.

In the absence of an AGM, the business of appointment of Directors and Examiners for the Accounts is deferred for one year, with the existing arrangements remaining in place. It so happens that only one Director, Stephen Ainsleigh Rice, was due to have retired this year and his appointment will be rolled over for a further year.

Following Charity Commission advice, we have checked our governing document for clauses that allow trustees, committees and members to meet virtually or to use telephone facilities. Ours does not. At our next AGM, we intend to bring forward proposals to facilitate changes as to how or when meetings are held. Meantime, we would welcome thoughts or ideas from any member about how this may best be managed.

AUTUMN SHOWS

We had taken the decision not to attend any of the autumn shows this year, even before we learnt that so few would be taking place. We felt that we cannot ask our experienced apple identifiers to attend; most are elderly and likely vulnerable to the Covid-19 virus; neither they nor we wish them to any run risks for MAN's benefit.

It was a decision we took with great regret because it is clear that these shows are popular and greatly enjoyed by all on either side of our stands. So Sheila, David *et al.*, we hope to have you back having fun in 2021.

The cover photograph is of Round Winter Nonesuch blossom on 6th May, 2020. This is one of the varieties that we had accredited last year and entered in the Register of Local Cultivars. It is a variety described by Hogg, and we believe is of Welsh Marches origin. Three old Round Winter Nonesuch trees have been found in Herefordshire, Shropshire and Worcestershire. Congratulations to Mike, Sheila, John, Tom and team for finding this gem. Now there is one at Paramor, two at Ty Glyn, and others at Frank Matthews and the Duchy of Cornwall. We don't want such a lovely apple to get lost again!

In normal circumstances, these shows also represent an important source of income for MAN, a combination of attendance fees, sales opportunities, ID charges and donations received. This income will be much missed in 2020.

We have included an update on the status of a number of autumn shows and events inside the back cover of this publication.

IDENTIFICATION SERVICE SUSPENDED

In addition, MAN's identification service has been suspended for the remainder of the year since identification of apples requires handling, feeling, cutting, tasting and sniffing (!) fruit. With regret, not only will MAN identifiers not be attending shows this year, we will not be holding identification workshops and have had to suspend our postal service, at least substantially; please check with **secretary@marcherapple.net** in case we can accommodate any requests.

GREEN SHOOTS?

While it follows "as the night the day" that our apple trees will make new growth each year, we would like to be able to say the same for the pool of volunteers on which we rely. Not only would we welcome new members to join our Committee, but there are always opportunities to become involved with practical tasks. While we are all being asked to avoid unnecessary contact, some tasks, such as routine pruning, take place outside; others, such as producing mailing or tree labels, can be done at home. Marcher Apple Network is very proud of everything that has been achieved, and right now everything – whether it be the trees or the membership records, the website or the stocklist of sales items - is in good shape. But maintaining things at this level and, just as important, coming up with some new ideas for the future, will require some new input – some green shoots. Please think about this and contact the Secretary, Wade Muggleton, at secretary@marcherapple.net if you feel able to get involved in any way.

Jackie Denman,
Chair of Trustees

MAN TRUSTEE REPORT & ACCOUNTS

With the AGM cancelled, the Trustee Report is reproduced here for members information.

Marcher Apple Network is a company limited by guarantee and is governed by its Memorandum and Articles of Association. The Directors of Marcher Apple Network are the Charity Trustees.

MAN Trustees:

Trustees for the reporting period were: Peter Austerfield - Life Vice-President, James Chapman, Jacqueline Denman - Chairman, Nicholas Dunn, Sir Andrew Large - President, Andrew Pillow - Company Secretary and Treasurer, Michael Porter, Stephen Ainsleigh Rice, David Smith. As required by our Articles, four of the Directors, Peter Austerfield, Nick Dunn, Andy Pillow and David Smith resigned and were re-elected at the 2019 AGM.

ADDITIONAL GOVERNANCE MATTERS – TRUSTEES:

The Trustees met twice, on the 18th April 2019 and 18th October 2019. The main business of the first meeting was to review our compliance with the 'Charity Governance Code' and the Charity Commission's guidance 'The Essential Trustee (CC3)' and 'The Seven Pillars of Governance'. The business of the October meeting was to consider and approve:

- the annual report and accounts,
- the operation of the Management Committee, and
- to agree who among Directors would resign (and seek re-election).

ADDITIONAL GOVERNANCE MATTERS – MANAGEMENT COMMITTEE:

Members of the Management Committee are: Peter Austerfield, Sheila Leitch, Wade Muggleton (Secretary), Daniela Bergman, David Olivier (until 16th November 2019), Andy Pillow, Stephen Ainsleigh Rice (Chair), David Smith. Some Trustees are members of the committee with specific responsibilities but all are welcome to attend. Management Committee meetings are now being held alternately in England and Wales so that travelling time can be shared, including car-pooling whenever effective. Meetings in Wales have been held at The Harp Inn at Glasbury-on-Wye (which also hosts apple ID sessions). Meetings in England have been hosted at the Salwey Arms, Wooferton.

The Management Committee met twice to consider our medium- to long-term future; ad-hoc discussion between Committee Members as necessary covers operational matters and reduces the need for long distance travelling.

OBJECTIVES AND ACTIVITIES

The objects for which the Association is established are to further the education of the public by promotion of research, identification and to conserve by any recognised means, old varieties of apples, pears and other fruits found growing in the Marches Area of England and Wales, and elsewhere, and to make collected information available to individuals or organisations by displays, demonstrations, talks or any other communication system.

SUMMARY OF THE MAIN ACHIEVEMENTS DURING 2019/20

Membership has increased this year to 294; the enthusiasm shown by our new members has been very heartening.

MAN attended eight regional shows during the autumn, and the British Beekeepers Association at Harper Adams. MAN's identification service was well attended and appreciated, though markedly less busy than hitherto. This and the shows are the principal sources by which MAN 'finds' old varieties. It is to mutual benefit that MAN attends these events.

We returned to the Cider Museum in Hereford for our AGM, and were pleased to note that attendance increased. We were delighted to welcome Helen Woodman to describe her enthusiasm for orchards, cider and wildlife at Gregg's Pit Cider and Perry, Much Marcle.

Following the trend from 2018, we received still fewer samples of fruit from the public this year (perhaps partly because the weather was cold and wet) and these generally required less detailed study than in earlier years. We had moderately good crops from the young nursery trees at Paramor and Ty Glyn orchards giving us opportunity to make progress identifying apples in MAN's own collection. A total of 214 apples varieties were identified.

MAN submitted 54 samples of apples and pears to the 2019 DNA campaign, of which half were from its own orchards. We have now covered 947 of 1263 tree at Paramor, Tredomen, Croft Pendarren, Ty Glyn, Westhope and Aberhoywe; those not analysed have been identified without doubt. We have supported several local groups having their collections analysed, at their expense, and aligned the results with our own accessions and sources, in some cases finding additional rare varieties. In addition, a few more, mainly recent accessions, have been selected for DNA in 2020.

MAN's collection covers about 10% of the

entire National Fruit Collection apple holding; it includes most of those historically associated with Wales and the English border counties. It is a regional contribution to reducing biodiversity risk.

Among the DNA results we were delighted to find that our identifications were largely correct, including Bridstow Wasp, Gennet Moyle (Burr Knott), D'Arcy Spice, Welsh Pitcher. A few corrections were also noted, but most interest arose from results of a cider orchard that has many rare varieties, the significance of which we are still assessing.

MAN was represented at two Adjudication Panel meetings, held at the Cider Museum and University of Reading, for accrediting varieties for accession to a National Register of Local Cultivars. MAN had 29 varieties accredited. We noted the first results from the 2019 DNA campaign in our Spring News Sheet and our contribution to the Register of Local Cultivars. Results of the DNA Campaigns are available to the public via **www.fruitID.org**

In setting the year's objectives and planning activities the Trustees have taken careful consideration of the Charity Commission's general guidance on public benefit. The Management Committee continues to meet the objectives of the association with the following activities during the reporting year:

SUMMARY OF THE MAIN ACTIVITIES UNDERTAKEN FOR THE PUBLIC BENEFIT

Marcher Apple Network now manages five museum orchards: Cwmdu (Paramor Orchard), Tredomen, Croft Pendarren, Ty Glyn and Westhope. These orchards provide a gene bank from which local varieties may be propagated by graftwood or budwood as well as allowing unknown varieties to be grown on for later identification.

With some reluctance Marcher Apple Network has had to scale back its educational programme of courses. We continue to offer help with courses and provide advice and contacts to members and the public at Shows and other events.

Marcher Apple Network is a member of PAVO — the Powys Association of Voluntary Organisations.

ACHIEVEMENTS AND PERFORMANCE

Orchards

Volunteer effort has proved the limiting factor on what could be achieved. The orchard at Ty Glyn is now becoming well established with another 57 trees planted, for a total of 387. A further 14 have been planted at Paramor.

Graftwood and Propagation

Over the winter of 2019/20 about 100 sets of graftwood scions were collected for propagation principally into the new orchard at Ty Glyn, but also to the cordon collection at Frank P Matthews (FPM), and to standard-sized trees to the National Trust and Duchy of Cornwall. A further 11 sets were provided to members and the public.

Apple Identification

Through much of the UK there was a good apple harvest during 2019, but a marked reduction in the number of 'difficult' apples brought for ID. Identification took place at seven events attended by members of MAN. There is always the hope of finding a rarity. Some of the more unusual varieties we encountered are: Catshead, Newland Sack, King's Acre Pippin, King Coffee, Dumelow's Seedling, Allington Pippin, French Crab, Lambrook Pippin, Michaelmas Red.

Collaboration with National Trust and Duchy of Cornwall

For three National Trust properties in Herefordshire, MAN has selected 68 trees of traditional varieties which have a strong local connection with the immediate area of these properties. With delivery of a further ten in 2020, there remain just another 6 to deliver next year.

The Duchy of Cornwall has kindly accepted about 100 local traditional varieties as part of their support of the Natinal Fruit Collection, and of MAN. A further eleven were added to their collection.

While MAN has prime responsibility for conserving 'unknowns' and 'uncertains', we are grateful to FPM for providing a back-up for these, thus reducing pressure on MAN's resources and risk of loss.

Good to report that progress has been maintained despite the lockdown. Key tasks requiring more than a single pair of hands were completed just before 23rd March.

MAN Trustees

Orchard News

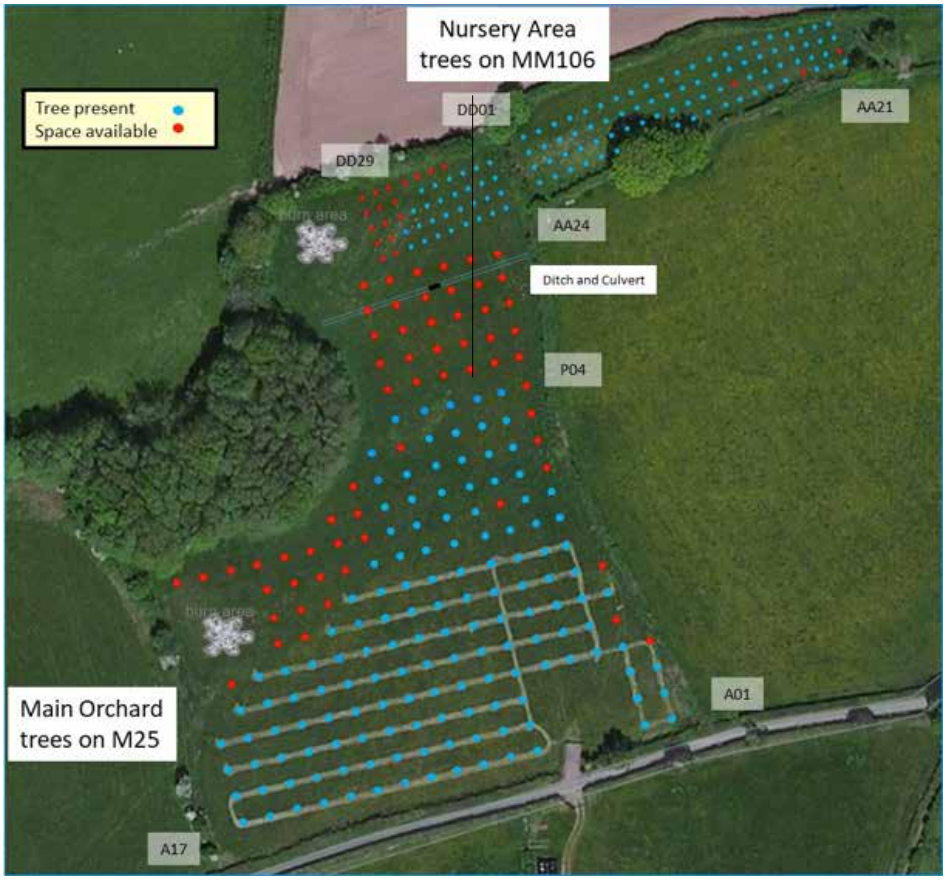
Paramor

Two friends kindly joined me for a day of fun at Paramor, and we had a lovely day too. Fourteen trees were planted and 20 new stakes driven in readiness for the start of planting next winter. I enjoyed it, as the others did the planting and knocking in; they enjoyed it, as their superior skill was obvious.

We have hedgerows flail cut in January or February for minimizing disturbance to wildlife. This year, we've also had the encroaching hedgerows topped back as part of preparing ground for an expansion of the planted orchard area. At the same time, much of the long grass has been topped (twice), harrowed and mowed twice. We've left a 10m wide border to the coppice following advice that this is a useful hunting ground for raptors to find voles and mice. A smaller area around the top of the culvert and at the bottom below burn heaps have been left for wildflower growth in these wetter habitats.

The ground was much too wet for knocking in the remaining posts by machine (there's about another 100 to do, it really does build muscle tone, I'm told). Then came lockdown which prevented us from taking the posts over to the orchard. Then with the hot spring weather the ground was too dry to do the job easily. Excuses! do I hear you say? I did visit in June to check tree condition and water the new trees and was glad to see the orchard looking in such good heart. And then of course the rains came....

Tom Adams visited Paramor this June as a paid contractor and, with a little help from me, pruned the standard trees in the main orchard (see report below). The next phase of Paramor development is quite extensive. We have to remove about 30 trees we can no longer justify retaining, such as duplicates, or common out-of-area varieties (some of which are copied



Here's a plan of Paramor showing trees planted and spaces remaining.

at Ty Glyn, Croft Pendarren or Westhope). Together with about 80 undeveloped locations, this is more than sufficient for the next batch of planting over 2020-2022.

Subsequently, we expect to identify some of the trees in the nursery area and decide whether to remove or re-graft onto M25 for long term retention.

Croft Pendarren

Nothing to report

Ty Glyn

A further 57 trees were planted at Ty Glyn during the winter. The varieties include more grafts of trees from Tredomen, some of Cheshire and Long Ashton provenance and eleven taken in duplicate from Richard Cheshire's former cider collection. All have settled nicely.

While I avoided knocking in posts at Paramor, there was no escape from exercise. Three lorry loads of matured woodchips, 18m^3 in total, were delivered on 1st April before I was awake. Three nice contiguous heaps. Someone trying to tell me something? These were to be moved to cover the six rows, 540 tree locations. I set to. A total of 36 trips with ride-on-mower and trailer each with 12 tubbies containing 30 litres that could be neatly placed between the stems. Does this sound like a Radio 4 'Puzzle for the Day'? I recall heaving all 2189 grain-shovels-full. Nice though when it was all done 36 hours later.

Tom Adams suggested we seed either side of each row with clover and wildflower seeds (from Cotswold Seeds) for encouraging birds and other predators to come to feast on the aphids. Broadcasting the seeds during the dry spring spell resulted in me spending a few hours with a hose pipe on several occasions. Borders are now growing nicely.

Yes, aphids and greenfly are rampant, but oddly not on apple trees in my own garden over the road. The local eco-system is interesting. Our home variously hosts feral bees, house martins, swifts and harlequin ladybirds; the latter overwinter in the sash window weight chambers and emerge in February and March in droves, swarms, near plagues. But now they are feasting on those aphids, on one small cordon tree I counted seven, never seen so many. On another, there were two ladybirds definitely not socially distancing*

While making regular observations of blossom and leaf development, another task is to rub out leaf development on the stems. Spiral guards are unwound, leaves and soft shoots are removed with a dexterous twizzle of fingers and the spirals re-wrapped. I'd never noted before that they are on a "right-hand" thread, like water spirals down sinks in Australia.

A camera in the orchard has recorded visits by a tabby cat, pigeon, pheasant, mistle thrush, and numerous blackbirds for whom grass cuttings and woodchips provide hunting grounds for worms. Also recorded was a red kite taking off and two goldfinches. Thankfully no rabbits, though we have them in our garden and also a fallow deer, Oh dear!

All but four of the 386 trees are looking well and have had their first summer pruning. They will be joined by about 150 more trees over the

** (Editor's interjection: the subject is botany, not zoology please).*

next two years and that will largely fill the site.: thereafter one in, one out. I wish we had the same policy about books at home.

Tredomen

We have consistently spent about £800 pa having the grass cut at Tredomen. The Management Committee and Trustees have questioned whether this expenditure remains justified or whether, if we could protect those trees of greatest value, we could graze with sheep.

Most varieties that we have held at Tredomen have by now been copied at both Paramor and Ty Glyn, and in many cases at FP Matthews and at other members' collections. These trees are no longer of such importance to MAN as they were a few years ago. There are still some varieties that have been grafted but not planted or only recently planted.
These trees still have high value to MAN so were protected last winter and light grazing resumed with sheep.

Having taken advice from farmers who have sheep in orchards with smaller apple trees, we felt confident to install simple guards. On 7th March, 31 trees were protected with a wrap of chicken wire (900m wide 25 mm hole size) with a couple of loops of barbed wire wrapped around the top and over the main branches. Two trees were protected by a simple pig-netting fence topped with barbed wire. I didn't visit for another two-and-a-half months to check whether our handiwork was effective so mighty relieved to see these 33 trees were OK and the protections remains undisturbed.

This photograph of Bascombe Mystery (false) confirms sheep were unable to reach (most of) it. Several of the other unprotected trees have been well nibbled and the canopy raised. Some will die. We accepted that risk in order to save on grass cutting costs. In more detail, the chicken wire was cut to a length equal to the height from grond to the point at which the main branches divide from the stem. The top and bottom of the chicken wire length are then pulled around the stem and joined with nylon ties. One cut end is pulled down close to the ground, while the other cut end is drawn around any lower main branches as best as may. A wrap of barbed wire, typially 2–3 m length, is pulled aroud the chicken wire for gripping fairly tight, with the ends then passing over one or two branches and twisted off. Installation of this takes about 5 minutes if two workers operate with social distancing (this was done before 23rd March). It is easy to slacken off as the tree expands its girth, just as my belt permits!

Apples at Cui

I suppose you have to be slightly eccentric to like wild places, weather extremes and seeing which apples might thrive in unusual conditions. But it was this mixture that started me off some 30 years ago on a voyage of exploration in damp but beautiful Breconshire.....

Cuiparc is situated at about 500 feet at the bottom of a lovely valley which flows down from the nearly 3000 feet Brecon Beacons summits.

Our apples are essentially at two levels: around half around our home on the frosty valley bottom and the other half at 750 feet or so, normally a bit cooler, but avoiding all the late frosts. The orchards of some 7–8 acres are spread out on a grassland farm of some 180 acres and are mostly SE facing. They are quite sheltered from prevailing westerly winds. Soils are sandy and light from the alluvium deposits created when the Brecon Beacons were scraped by glaciers in the last ice age.

We have our fair share of rain, averaging around 50 inches each year, but October to February this last winter gave us 56 inches alone! And much as we enjoy our sunshine, we often have cloudy days in the lee of the mountains. We have some extremes in the weather too: we experienced minus 17°C one frigid December: The house is in a frost pocket below the mountains, and some years the last frosts are towards the end of May. Four nights in a row this year has done damage, very painful to see! But the orchards higher up have escaped.

When we came to Cui in 1989 we inherited several ancient apple and pear trees dotted around. Inspection of the old 1904 maps showed that they were in fields that had once been orchards. So I wondered why not try to revive them? Then the voyage began. What varieties should I choose? What might survive the frost, or might like the higher altitude? And how would I prevent the voracious Welsh sheep from destroying them? The obvious thing was to start locally. I found apple trees struggling in the woods around the ruined farmsteads dotted around us up to 1200 ft. So one of the early themes was to find these old trees and graft from them. The older the trees the better, since it showed they liked the climate. Only now with DNA testing am I finding out just what they were! Then I started to look for varieties from the local area and the neighbouring counties. Naturally this took me to MAN..... I've had so much friendly help from them over all the years. But things went broader: so being in a western damp Celtic environment, it seemed obvious to collect apples from Wales of course, but also from Scotland, Ireland, Cornwall and the Isle of Man. And I also chose older varieties, some with long histories. I collected English ones at first, but then I went to Northern and Southern Europe, the USA, Australasia!

Finally, I collected on my travels. For example, a gnarled tree, from an isolated spot on the West Coast of Scotland, a Manx seedling; and from further afield: apples from the Jebel Akhdar in Oman and from Ethiopia succumbed to canker. But apples from Nepal and Bhutan worked out a treat. And lastly the wild apples from the forests in Kazakhstan. This is the 'Garden of Eden' from which all our apples today are derived, brought west originally in the panniers of the horsemen on the silk route. There is now an orchard of Kazakh trees, just up the hill behind us.

There are now just short of 350 named varieties in the collection from around 20 different countries, and a number of others waiting to be identified mainly by DNA. My helper Richard and I have managed all this ourselves. Grafting, planting, sheep protection, pruning, disease protection, and picking! Nothing gets wasted. The many birds in the early winter together with the badgers, squirrels, mice, voles and hedgehogs, make sure that what we can't eat, make into juice or cider or sell finds a welcome home. Also the record keeping: vital mapping and spreadsheet completing – each tree's attributes.

Now with an eye on the next generation I am looking for ideas! Who might want to share the the orchards, and help make sure they can continue for others looking far ahead? It would be good to think that the collection might have some ongoing interest looking ahead. Although it took shape more by serendipity than a grand plan, the collection might merit research or further investigation, which we would be happy to host and to benefit from expert views. And conservation of the collection, whether in situ or elsewhere would be a plus. I would like as many people as possible to be able to enjoy the orchards subject to the limitations of being part of a working farm. I have thought of training sessions, partnerships with other collections, university researchers, producers of juice and cider, growers, and those interested in genetics. Some of these might even have access to some funding! Attributes that could be of interest include altitude; flowering/harvesting times and fruiting characteristics; disease resistance; frost resistance; and orchard biodiversity. Or the impact of a 'marginal' climate. And research into Welsh and other Celtic varieties.

For producers there are apples for juice, and cider, together with material for 'Welsh' branding in terms of both location and fruit varieties. We are not technically organic. But we use no pesticides or fertilizers and use sheep as lawn mowers. For geneticists and growers there could be interest both in varieties which perform exceptionally well in our marginal environment as well as e.g. Kazakhstan trees grown from pips taken in the wild.

The advice I was given was that the first thing to do was to write the history, and to produce the spreadsheet with significant attributes. I have done all that. So now just who might have an interest? At the very least I hope our local people and visitors will be able to enjoy walking the fields and enjoying the blossom and fruit. Otherwise it will all go to the fieldfares and redwings. As much as we love them, surely we do.

Andrew Large
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MAN Trustees visited Cuiparc on 28th February to see what we could do to help, and it seemed that 49 of the 50 inches of rain fell on us that day. We have some ideas, and hope this account and wishes will strike a chord with some members.

Old orchards on 6-inch-to-the-mile OS maps

It is useful to know that these maps are available online. Go to National Library of Scotland: **https://maps.nls.uk/geo/find/#zoom=10&lat=52.11440&lon=-2.73780&layers=102&b=1&z=1&point=0,0.** Then close the help page and select the area you're interested in. There is coverage of England and Wales, as well as Scotland. Sometimes handy to have a satellite or map page open at the same time for finding the area you're interested in seeing. Several editions of the maps cover from about 1860 to 1950.

Under lockdown, with a little more time available for searching, it has been used a few times for assessing how old an old tree might be. If it is in a remnant old orchard, was the orchard planted in 1860, 1880, 1900, 1920....? When does the orchard first appear on these maps? Too good to be true? Well perhaps. Bob Lever has passed on words of both caution and encouragement.

"We found out about this potential mapping glitch through a few elderly third generation fruit growers who had records of what their grandfathers had planted and where they were planted. "Re old maps and orchards. Just because it wasn't on the 1899 survey, it doesn't mean it wasn't there then. One of the things being picked up in Orchards East surveys is that very young, widely spaced trees have not always been mapped as orchards at the time. This figures a lot in East Anglia, because the land between the trees was usually cultivated, so not instantly recognisable as an orchard to a surveyor. My own orchard is one of these. Definitely planted in the first decade of the 20th century, but not mapped as orchard until it would have been fairly mature.

"Two orchards local to me here in Wisbech were definitely laid out in the 1880s, when there was a massive expansion in commercial Bramley cultivation, but neither appear on an OS map until the 20th century. There is one substantial block of old orchard in Wisbech St Mary that was purchased as a mature orchard by the current owner's father in 1953. I chatted to her father when he was still alive, he said that the orchard was a quincunx planting of sufficient age and maturity for him and his brother to thin out the trees to their final spacing when they bought it, so doubt it could have been planted after the 1930s, but it has never appeared on any ordnance survey map, even though it must be about 5 acres in extent!

"There are a few anomalies in Wisbech St Mary to make me think that area was a Friday afternoon survey after a good lunch at the pub!

"One of the things that the UEA Orchards Project has done is look at existing orchards that were marked on early edition OS maps to try to assess if any of the trees could be from the original planting, or whether the site had been replanted subsequently. This was done partly by assessing veteran tree features, but also by identifying cultivars, as these can offer clues regarding the age of the orchard.

"Technically, the 'mapping anomalies' were discovered as a result of surveys carried out over several years by the Cambridgeshire Orchard Group, the East of England Apples and Orchards Project and UEA Orchards East."

Fruit tree yield

As part of observation of trees and fruit, we assessed the fruit yield in three of our orchards this summer. Of 844 trees, 543 didn't have an apple on it, not one! Only one tree in eight had more than 10 apples. Wade Muggleton has confirmed that many orchards in South Shropshire have been similarly denuded. Culprit? A hard frost about 12th May. It caught the fruit while still tender, it even obliterated late pollinating varieties such as King's Acre Bountiful that in the past have been resilient.

Paramor had some good crops, especially on the big trees of rows A—D and a few in the nursery. These may have been sheltered or tall enough above the hard ground frost. Severn Bank has an enormous crop, even after Tom Adam's pruning work. Generally Paramor is not in a frost hollow, particularly the nursery area. Tredomen big trees (rows A—E) have some fruit, with Ffordd-las a pretty good crop — pity it's such a poor apple. Very few trees (small or large) in the other rows had any fruit. Seems as if about 2-4 m above ground on large interlocking trees is the best for protection at this frost hollow site.

At Ty Glyn, it is a bit of a frost hollow, but areas that warm faster in sunlight are not the ones that had the better yields. Odder still, just over the road in my garden which is just a little lower than the orchard and at least as much a frost hollow, some quite small trees are well laden Betty Geeson, Fiesta, Spartan, King's Acre Pippin, Lord Lambourne, Discovery, Bramley's Seedling.

Thankfully some of the more interesting varieties in MAN's collection which have been earmarked for accreditation, such as Brithmawr, Ludlow Longnor, Tedstone's Red, 'Checkley Foxer', Young 15, are OK, but most others not. Whether there will be accreditation this year is moot; good that Mike got a lot done last year!

Also noted was whether fruit was on spurs or tips, or roughly the proportion of each in line with fruitID methodology. Results will have to be treated with caution, as tip bearing is likely more vulnerable to frost, and pruning of young cordons certainly reduces tips.

National Crab Apple collection at West Horndon

"I have been to the National Crab Apple collection at West Horndon twice in relation to writing the synopsis for Wisley Crab. It is a private collection and has a large number of trees from various sources [cataloguing is an issue]. They are very interesting and include quite a few of the large fruited apples which are not edible as well as more classic crab apples. "I had DNA'd three trees with large red fruit which probably came from Hyde Hall and paid for them myself. I had wondered about volunteering to sort out what they had from their old records but that's for another life-time or when I've finished all the projects I'm currently involved with! I'm sure there is a lot of work that could be done there and compared with the ornamental collection at NFC. "On the same tack, a proportion of the unknowns (or not plausible parents for the named varieties) will be crab or seedling crosses. As always, some of the crosses will be delicious and some 'weird' or frankly disgusting!!"

Anna Baldwen]

Yes, she's right. It is quite llikely some varieties, with few if any plausible parents, may have a crab or two in their family tree to throw heritage sleuths off the scent.

SAR

I'm finally putting down my grafting knife!

Back in 1994, the Countryside Council for Wales asked me if I would graft up a few local apple trees which the Marcher Apple Network had discovered in the Dinefwr area. I tried out fifty or so grafts on the kitchen table and was hooked.

Andrew and Paul of Dolau-Hiron nursery, 25 July 2020

I joined MAN and spent an apprenticeship on the committee learning about apple growing in the Welsh Marches and, particularly, about fruit identification. After a few years I was grafting and selling over 1000 trees a year including many unknown or unidentified varieties for the MAN museum orchards.

After 20 years of grafting, growing, pruning, administration and delivering I was beginning to feel retirement beckoning.

About 2 years ago, I was talking with a customer who seemed to know about fruit trees and rootstocks and was looking for a small business to run on his newly acquired smallholding near Llandeilo.

It turned out that Andrew had worked for Hillier nurseries and for the Bath Parks Department so had plenty of experience.

Over the next few years, Andrew will be taking over the practical side of the business while his partner, Liz, will be running the back office. I will continue to do what I call 'personal' grafts but, in general, most enquiries should be directed to Andrew Hargreaves on 07818420762. He will be trading under the name Applewise with the same website address: www.applewise.co.uk.

I'd like to thank everyone in MAN for their help, advice and custom over the years and ensure you of my continued support in the future.

Paul Davis

From the Editor:

Paul we are glad for you and Lynn that you have begun a gentle wind-down towards retirement. It's been about 10 years in the making hasn't it? Patience rewarded. MAN has been incredibly fortunate to have had your knowledge, enthusiasm, guidance, and generosity. It has been a wonderful partnership.

Many members past and current have learnt tree pruning, grafting and aftercare from you, with abiding memories of gaining the courage to "cut it off"; of noting difference between leaf and fruit buds; of the various rootstocks. Above all looking and saying, Ah! I understand why I should do it. And for MAN and members we have many hundred friends growing in our orchards as happy reminders of the last 26 years. Thank you, Paul and Lynn.

Identification Report for 2019

We gave an account of the Identification Report in the spring News Sheet, so we just abridge it here.

With poor weather at the end of April, it was generally a modest harvest except of late flowering varieties or ones growing in sheltered spots. A hot dry summer soon brought on fruit to ripen nicely. A consequence of the mild winter was that leaves suffered from more attacks of various aphids, sometimes to the point that fruit yield and quality was affected. Many thanks to our regular identifiers (SL, PA, CP, MP, SAR) and our latest enthusiastic recruits (KL, AP); we are grateful to JS for having shared his invaluable database for use during sessions. As we did not attend Malvern, nor advertise our ID services for postal receipts, fewer samples were submitted by the public. Indeed the footfall at those shows which we did attend seemed markedly less than in earlier years. It wasn't entirely due to the cold wet weather, either. At the seven events we attended a total of 214 samples were inspected, just one third of the number in 2015.

Conveniently, as last year, with fewer apples received, we were able to concentrate on apples from our own orchards. First fruits from young trees at Paramor, Tredomen and Ty Glyn were matched against those of trees from which scions had been taken, thus enabling us to transfer the DNA fingerprint identification of reference trees (e.g. at Lower Ffordd-fawr or Tredomen) to their clones at Paramor and Ty Glyn.

The table below allows comparison of this autumn's activity with the previous four years.

	2020	2019	2018	2017	2016
ID panel meetings	4	6	9	7	9
Events at which MAN offered ID'n	7	9	9	9	10
Total ID'n sessions	13	15	18	16	19
MAN hours involved	204	306	465	476	465
Number of samples examined	214	352	350	530	618
Number of exhibitions staged	2	2	3	3	3
Most productive events for identification	Tenbury (56)	Tenbury (81)	Big Apple (74) (2 days)	Big Apple (109) (2 days)	Tenbury (109)
	Big Apple (51) (2 days)	Big Apple (60) (2 days)	Malvern (54) 2 days)	Leominster (85)	Malvern (79) (2 days)
	Chepstow (22)	Leominster (51)	Chepstow (42)	Chepstow (68)	Big Apple (76) (2 days)

Orchard inventory

You can find out what varieties are held in MAN's orchards from our website, the page is called **'Collection': http://www.marcherapple.net/collection/**

The split of known varieties between ones 'associated with' our wide area or beyond is rather arbitrary. But it is useful when deciding whether or not to retain a variety in our collection. Do we need to have varieties such as Annie Elizabeth, Blenheim Orange, Discovery, or Pope's Scarlet Costard? This becomes more pertinent as our orchards fill. Member thoughts on what we ought to keep are most welcome. And if you want graftwood, please do ask.

You may have spotted over the last few years that some names have been changing, things are not constant. It is partly the accumulation of many years of careful observation and study and partly the contribution from DNA fingerprinting results. It is interesting to see the impact of these over the last four years. 457 trees have been present in our orchards during this period. During that time, our confidence in the identity of 143 trees has increased, that's about a third of the total. In some cases it has been a simple confirmation, and in some cases a new name from out of our area which we'd likely never have appreciated, such as Jolly Miller, Washington Strawberry, Webb's Kitchen Russet. As you would expect, it has most markedly improved confidence in the holdings at Paramor nursery and Tredomen.

The ID of 50 trees still remains to be resolved. Some may be seedlings, of which some may have little value and not be worthy of further effort. 383 trees have been identified.

We are're planning to take 24 of these to be accredited by the Panel during the next one or two Adjudication Panel meetings of the Register of Local Cultivars. (see below).

And when it is done, we will have 407, or 90%, of the trees identified. Good thing that we continue receiving graftwood from folk with unknown trees. Dick Cheney would be thrilled that our 'known unknown' inventory is being rejuvenated despite best efforts by our skilled pomologists to keep up!

Orchard	*total trees 016-2020*	*changed confidence*	*remaining ID to resolve*	*ID confirmed*	*to be accredited 'soon'*
Croft Pendarren	48	7	2	45	1
Paramor - standards	118	19	3	108	7
Paramor - nursery	69	36	15	50	4
Tredomen	207	79	28	168	11
Westhope	15	2	2	12	1
totals	457	143	50	383	24

Accreditation

Twenty nine varieties have already been accredited and are listed on our website at **http://www.marcherapple.net/research/accreditation/**. They are a mix of old varieties that have been refound (such as Gipsy King and Bridstow Wasp) and new or hitherto unknown varieties (such as Shropshire Hills and Gilfach).

As mentioned above, we're considering accrediting a number more, in total 35 if we include varieties from other orchards, members' and newer accessions. We think we know what 15 of these are. Furthermore, we have already started preparing the supporting evidence in support of these requests. We just hope that the trees will bear fruit sufficient to make a fine display for the Adjudication Panel in November.

Ludlow Longnor looks a good match to the Grange Apple and its DNA suggests a similar parentage to both Downton Pippin and Yellow Ingestrie, both varieties bred by Thomas Andrew Knight. Tedstone's Red is a good match to an illustration that you can see hanging on the wall in the Cider Museum. With help from The Pippin Trust we wish to start accrediting varieties that Richard Cheshire found years ago, Eggleton Styre (also at Bernwode), Knotted Kernel and Yellow Redstreak. We'll have another go at Martin Nonpareil. Also we hope to get the name Chatley Kernel officially corrected, it's a place not a person's name and incidentally it's only 3 km from Martin Hussingtree where Wade Muggleton found Martin Nonpareil, and DNA shows that they may have a parent-progeny relationship.

The last entry above is suggested to be called 'Checkley Foxer?' Why? Well it has been found in Checkley, in Hereford, in Worcester, Warwick, Hainault (London) and has stumped everyone who sees it. Even the DNA doesn't seem to help. We're foxed.

There are another 20 varieties for which we are hoping to submit accreditation requests. Generally we know less about these beyond where they were found, the source tree's age and perhaps some history, what the fruit is like and, now, DNA which may give a clue about parentage.

We'll cover some of the plausible parentage relationship that these highlight later in this issue. Their plausibility can be tantalising and

Name	*DNA sample*	*Probable name*
Brithmawr	A3382	Brithmawr
Machen = Brithmawr sport	A440	Brithmawr Red
Martin Nonpareil (MAN)	A444	Martin Nonpareil
Chatley Kernel	A370,A371, A1140,(A311)	Chatley Kernel and Chatley Kernel Red
Ludlow Longnor	A439	Grange Apple
Tedstone's Red	A487	Five Fingers
Gwendolen	A3399	Gwendolen
Eggleton Styre	A871,A3373,(A1426)	Eggleton Styre
Daffurns 15	A383	Joeby Crab
Knotted Kernel	A814,A3376,(A1348)	Knotted Kernel
Yellow Redstreak	A810,A3380,(A1467)	Yellow Redstreak
Pren Glas	A469	Pren Glas
Tidicombe Seedling	A3360	Tidicombe Seedling
Christmas Pippin	A1180	Christmas Pippin
Hollingworth Cooker, Weekes's Red Dessert, Severn Bank (Bunn)	A412,A1103,A2401, (A197,A199,A997)	Checkley Foxer

Name	*DNA sample*	*Comments*
Elton Hall No.1	A387,A1129,A2487	
AB L04	A2646	DNA suggests parents Keswick Codlin x King of the Pippins
Browning 1	A366,A3397	
Dolaffelen	A1119	DNA suggests parents Keswick Codlin x Yellow Ingestrie
False London Pippin	A437	
Garway 1	A3383	DNA suggest one possible parent Rival
J Bunn 3	A418	
Jeffry Large Red	A421	DNA suggests parents Newton Wonder x Reinette Rouge Etoilee
Michaelchurch Gladstone	A1232	
Oldbury Pippin	A1246	DNA suggests parents Spartan x Idared
Parkfields 1	A1146	DNA suggests parents Red Foxwhelp x ?
Rymer (MAN)	A477,A1100	DNA suggests parents may include: (Newton Wonder and (Orange Goff or Baron Wood)) or (Bramley's Seedling & Annie Elizabeth) or ....
TCTOP 3	A2601	DNA suggests parents White Beech x Ludlow Longnor
Tir Allen 63	A496	DNA suggests parents Northern Greening x ?
Ty Du 2 'Strange'	A503	DNA suggests parents Annie Elizabeth x Reynolds Crab
Ty Du RBT	A1122	DNA suggests parents Gladstone & Ty Du 2 (A503)
White Castle Quoining	A510	DNA suggests parents King of the Pippins x (Cornish Pine or A514 or A1137)
Winter Quoining (Bunn)	A514	DNA no clue on parentage
Winter Quoining (Ted), Walters 10	A1137,A1142, A3401	the same as "Charlotte Daunt"
Young 15	A2416	a Sops-in-Wine type

even a little 'seductive'. So caution must be exercised.
Getting these twenty in order will take a little while. By way of illustration, a typical ticklish issue is that Winter Quoining (Ted), which we had from the late John Tedstone of Kingsland, and is a match to Walters 10 from Hope-under-Dinmore, also matches a variety held by the Irish Seeds Savers Association under the name 'Charlotte Daunt', yet when the lady of that name was contacted she never submitted it!

If you'd like to help sort this lot out and name a few, your help would be most welcome.

Pruning practices

Though the objectives of the collections at Paramor and Ty Glyn are different, as are the rootstocks and pruning regimes, there is a common element. Hygiene. We know apple mosaic virus and canker is, or may be, present. For avoiding spreading pathogens on pruning tools, secateurs, loppers and saws are cleaned between working on individual trees. We use methylated spirits, wiping the saw and lopper blades robustly, and for secateurs we have two pairs enabling alternate pairs to be immersed for several minutes. It takes little extra time, once you get in the swing, and may save many trees from disease.

Here we cover pruning of the standard and semi-dwarf trees at Paramor. Next year we'll look at Ty Glyn cordons.

Pruning at Paramor

Our standard trees, on M25 rootstock, have been planted with the intent to last at least 100 years. Fruit yield is of relatively little importance; we need enough nice typical specimens for exhibitions and as comparators during ID. The Pruning we employ is founded on advice from Paul Davis, Tom Adams and Nick Dunn (it's our version of 'based upon the science', and taken much to heart).

Two things we strive for:

- maintaining health
- getting a good main branch structure.

The greatest threat to health comes from fungal canker; other issues such as phytophera, fireblight, mildew, and pests including aphids and greenfly, rabbit and sheep nibbling are much less a threat. Traditionally, apple and pear pruning was done in winter when labour was available, but we don't do this. We now only prune in spring or summer during a period of dry weather. Just as with stone fruit, work is done when fungal particles are fewer and pruning wounds cork faster. Pruning in summer rather than spring has the advantage of slowing tree growth, and encouraging fruit formation.

In the East of England, Bob Lever has noted that papery-bark fungal disease is more an issue, and he prefers pruning in the spring to summer.

Over the last few years Tom Adams has spent a day at Paramor in early July and together we have pruned all the standard trees.

I can still hear Paul Davis say "look at the roots and then the stem, remove any shoots". That's the first task, then he says "cut out dead, diseased or crossing branches". And low hanging branches too.

Once a young tree reaches about 2.5 m tall we shorten the leader to about 1.7-2m for encouraging side shoots to form. This is repeated over the following 3-4 years for developing the nascent main branches. Between five and eight can be selected by the time the tree has reached about 6-8 years of age, these pointing to all corners of the compass (yes, we are very precise: subtended angles of 45-72° between them; you believed me?). Crowded young branches are removed.

In subsequent years, as shoots from these main branches thicken, we thin some of them out, perhaps a quarter each year, especially those nearer the centre, and those that cross or are excessively shaded. Don't fiddle with small branches or shoots, keep work limited to branches of at least 15 mm diameter. Consequently, each year it shouldn't take more than 10 minutes per tree. Fruit yield isn't important to MAN, tree health and speed of work are.

Trees in the nursery area are all grown on MM106 rootstock. From these we want early nice clean fruit samples for identification work. It is not the intent these trees will be kept for long; as already mentioned about half of the 110 trees there are of at most moderate importance to MAN and are to be removed. These varieties are more efficiently conserved on cordons at Ty Glyn. It is a longer-term intent to re-graft varieties of greater interest onto M25 rootstock and replant the nursery area. Hence for this area pruning is strictly limited to what is urgently needed for preserving the trees rather than any attempted formative pruning.

We've had mistletoe brought by birds and it is not part of our conservation effort (yet). We cut it out or back, then cover the remainder with black plastic tied securely around the branch for stopping photosynthesis.

There's a nice book on pruning that Bob Lever recommends highly: 'How to Prune an Apple Tree, a guide for real people with imperfect trees', Chloe Ward, self-published (2014) and costs about £4.

Stephen Ainsleigh Rice

Winter reveals our handiwork; this example of Longney Russet is in a neat goblet form.

DNA Fingerprinting update - 2019 campaign and beyond

Progress has continued apace. Results from MAN's 2019 campaign were touched upon in this spring's News Sheet. We are now beginning to see further benefits as other regional groups submit more and more samples, resulting in matches of our varieties to theirs. This then demonstrates that these aren't chance seedlings but rather cultivars and sometimes gives suggested identities. Additionally, there has been an effort to see whether parentage can be extracted and what it may reveal. Here is a summary of progress..

DNA 2019 campaign

As reported in Apples and Pears last year, we have continued to submit varieties for DNA fingerprinting where some issues remain or new material becomes available. A total of 42 apple and 2 pear samples was submitted to East Malling Research (EMR) last summer; the cost was £1425.60

PEARS

So they don't get missed in the mass of apples, let's consider the pear results first. Two interesting ones were submitted by Wade Muggleton.

P832 came from Chatley, from near the location of the apple 'Chatley Kernel'. It is locally said to be a pear called 'Worcester Silk'. We've had an apple of that name too. The DNA gave a match with a tree at the National Fruit Co;llection, Autumn Bergamot, so seemingly a case of synonyms.

P833 is a pear from Kyrewood near Tenbury Wells. It was thought by the owner to be a Worcester Black Pear but from inspecting the fruit was clearly different, even if it is one of those hard culinary pears. The Curator remarked it is held as 'Smith 1' having been accessed from a Mr Smith of Weston Park, Shropshire, 1952. NFC would like to know more about any connection between the farm at Kyrewood and Weston Park. But thus far we have been unable to find any link, to date these are the only two known samples of this pear.... intriguing.

APPLES

MAN has now had 479 analysed by EMR. Results have supported the increased certainty in identity of our collections as discussed above

A further 28 have been submitted for 2020.

Apple DNA2019 results were received on 30th January 2020. Data analysis and checks proved harder than usual for EMR/NFC/fruitID as there were many queries to resolve this year. A report was submitted to a MAN Committee on 3rd April 2020 covering our results, together with matches to apples curated by other groups, and our follow-up actions. Here we discuss a few of the interesting results. If there's something that sparks your interest, please do get in contact with us.

Welsh Pitcher, an accredited variety by MAN, has now been found at North Pembrokeshire (A3350) and Llanfrynach (A3388). We know of it from at least four separate locations across south Wales.

A3389 Llanfrynach 2 from near Talybont-on-Usk has no matching DNA. We've not yet seen clean fruit, so it needs study.

A3399 Gwendolen, a Worcestershire variety, has no matching DNA, so we'd likely plan on accrediting this during 2020. Practically the greatest obstacle may be spelling: does it end

...len, or ...lin. or ...lyn?

A3348 was submitted as 'Wareham Russet' but matched the Dutch variety Lemoen. Perhaps a case where someone adventurously renamed a nice out-of-area variety for some benefit or other?

A3383 Garway 1 has long puzzled our identifiers. It looks very similar to Sam's Crab (personally I'd have been pretty sure about that). Mike Porter has resolutely had doubts. He's been proved correct. It isn't Sam's Crab, nor does it have a match in the fruitID dataset. It'll continue to prove a puzzle.

Bridstow Wasp, which we have accredited last year, has been found by Orchards Live in their submission to DNA2019 at an orchard in Totnes. Now we know this cultivar has been found in Powys, Devon and Ireland, but not yet at Bridstow. Perhaps we should invite the Parish Council to have a tree?

A2561 Coch Annie Jones (below), which a MAN member had accredited last year, has been found to match a submission by the South Lakes Orchard Group from a tree near Carlisle, A3003 Bob's Red, submitted in 2019. So it's likely not a seedling. Then, another variety looked to have a similar fingerprint, A3288 Calville Rouge d'Ete submitted in 2019 by the RHS. Have we now its true identity?

A3382 Brithmawr (overleaf) was found to match both Pride of the Orchard at NFC and A440 Machen. This is exactly as we reported that Dr Danny Thorogood of Aberystwyth University had found in 2019. Brithmawr was the original name given at the 1934 Conference held by the Royal Horticultural Society. Perhaps more correctly rendered Brith Mawr, it is described in detail in the Welsh Marches Pomona. An accession that we have at Tredomen H15 has a fingerprint A363 and morphology that is clearly different; it has been renamed Brithmawr (f). Matters came to a head this January when we noticed

a submission from the RHS A3301 Brith Maur which matched our Brithmawr (f). Paul Davis kindly made a great effort looking through grafting records and correspondence, and Jim Arbury similarly tracing the RHS accession. Paul found old correspondence with Muriel Beck that enabled us to write a letter to the lady in whose garden the original source tree grows. It was opportune to have lockdown, as a delightful conversation followed, in amongst which she described the tree, with two stems (a third broke off many years ago), one with fruit as above and another with a flatter green apple. Over time different people have collected scions in winter, either from Brithmawr or from the root(stem) stock, unaware of the situation. Finally, the connection to Pride of the Orchard from the Bowspring Nursery at Tidenham has been a puzzle; they were a competitor nursery to Fairoaks. In discussion with our colleagues in the Gloucestershire Orchard Trust we have agreed that documented provenance goes to Brithmawr having been raised by John Basham of Fairoak Nursery in Basseleg. And Machen, found growing just 8 km north of the Brithmawr, is a red sport. That's quite a lot to document thoroughly in the accreditation request, isn't it?

The final set of samples to describe are ones from the cider orchard 'Applemead' which Richard Cheshire had put together. We were late taking scions from the orchard at the time of Richard and Sally moving and missed some, but eleven are now growing at Ty Glyn after having been grafted a couple of years ago. We think we now know where we may be able to get scions of the eight or so remaining rare local varieties from original trees.

Now to the DNA2019 results. Five of the 12 samples matched those at NFC: Brown Snout, Dymock Red, Ellis Bitter, Stoke Red and Strawberry Norman. Another matched the recently accredited Brown French. Another matched Cap of Liberty from Liz Copas's collection in Somerset. Hereford Redstreak matched the accession we already have obtained from Bernwode which, though similar to the heritage variety of that name, is not thought to be the same. The remaining four are Eggleton Styre, Knotted Kernel, Skyrmes Kernel and Yellow Redstreak which we intend submitting for accreditation in collaboration with the Pippin Trust.

For various reasons we submitted eighteen further samples, the ID of which we were fairly sure about. We just wanted speedy confirmation, and we received that without surprises.

Stephen Ainsleigh Rice

Investigating Parentage

The News Sheet last spring noted that more information can be squeezed from the DNA than just from matching to identify. It has been realised for some time that the DNA fingerprints can give information about parentage, at least which varieties are **not** the parents of a given variety! Further work has shown that it can identify plausible pairs of parents, for instance 'Golden Delicious' x 'Kidd's Orange Red' produced 'Gala'. How far can it go and with what certainty? The answer is mixed, sometimes parents can be suggested with considerable confidence and sometimes none seem likely.

There are two datasets for testing how useful is the parentage from DNA Simple Sequence Repeat. A recent paper by Hélène Muranty *et al.* (Dr Matthew Ordidge was one of the authors) used whole-genome DNA to reconstruct with high confidence 295 families of mother, father and their progeny, called 'trios', this is the 'SNP' (Single Nucleotide Polymorphism) study. Of these there are 115 with DNA SSR data available from the NFC for comparison, and many show at least one parent being Cox's Orange Pippin, Jonathan or McIntosh.

A second source is the historic record of breeders. Muriel Smith in the National Apple Register (1971) lists both parents for 181 varieties of which we also have DNA data and a further 90 with one (European) variety as parent. These include lots with one of the parents being a Cox's Orange Pippin, a Jonathan, or a McIntosh.

A full article is on our website **http://www.marcherapple.net/research/dna-parentage-investigation/**. A worksheet tool was developed to carry this out efficiently and is available at **https://www.fruitid.com/#help**

Comparison of parentage derived from DNA SNP and SSR

Of the 115 SNP parents-progeny, the 'trios', DNA SSR data were unequivocally and immediately matched in 52 cases. Parents of a further 59 varieties were identified quite easily, though it did require care and used additional information, such as ploidy and provenance. Together that's 90% of all tested.

Just four cases gave a wrong parentage: Golden Melon, Laxton's Superb, Norfolk Beauty and Rubens. All were traceable to data mismatches likely from experimental glitches in what are delicate and subtle data differences. Don't expect it to be infallible but a potentially useful tool. Cheap and cheerful.... But that's what DNA SSR is compared with whole genome studies.

Comparison between parentage from Plant Breeder records and that derived from DNA SSR

Of the 183 varieties with two parents given in the National Apple Register, for only 87 do both parents appear plausible, perhaps another 16 trios might be plausible if there were experimental 'glitches' in DNA fingerprints. Eighty were clearly implausible, which is a polite way of saying they are wrong.

It suggests that either frequent mistakes were made in the original ID of trees, or record keeping was poor, or parentages were retro-actively assessed from morphology. Among breeders it is notable that Wastie failed to get one right out of 13. By contrast, Research Stations such as East Malling, Long Ashton, Merton, Wageningen, and Ottawa are pretty reliable. It can be done. Parentage records should be viewed with considerable caution.

Of those with parents wrongly assigned, DNA SSR showed 73 trios for which alternative pairs of parents seemed more probable. Overall 87% of the 181 end up having plausible parents.

Suggested parentage of varieties in MAN's collection from fingerprint results

All DNA samples submitted by MAN, members and the Welsh Perry and Cider Society (WPCS) have been investigated, in total 794 samples of 423 different varieties.

Both the study with varieties in the DNA SNP dataset and those of the plant breeders have explicitly selected cultivars that are likely to have parent-progeny relationships. If anything, the MAN/WPCS dataset is biased away from 'normal' cultivars to rarer varieties and ones that may be seedlings, or we haven't (yet) found their parents.

There are about 300 varieties for which no suggestion has been made for either parent, usually because none seem remotely likely, or for others there are multiple choices: 54 have at least 20 plausible parents identified, and ten have more than a 100. These include King of Tomkins County, Byford Wonder, Yorkshire Greening, Norfolk Beefing, Cockpit and Webb's Kitchen Russet. Those where parents are suggested have varying degrees of confidence:

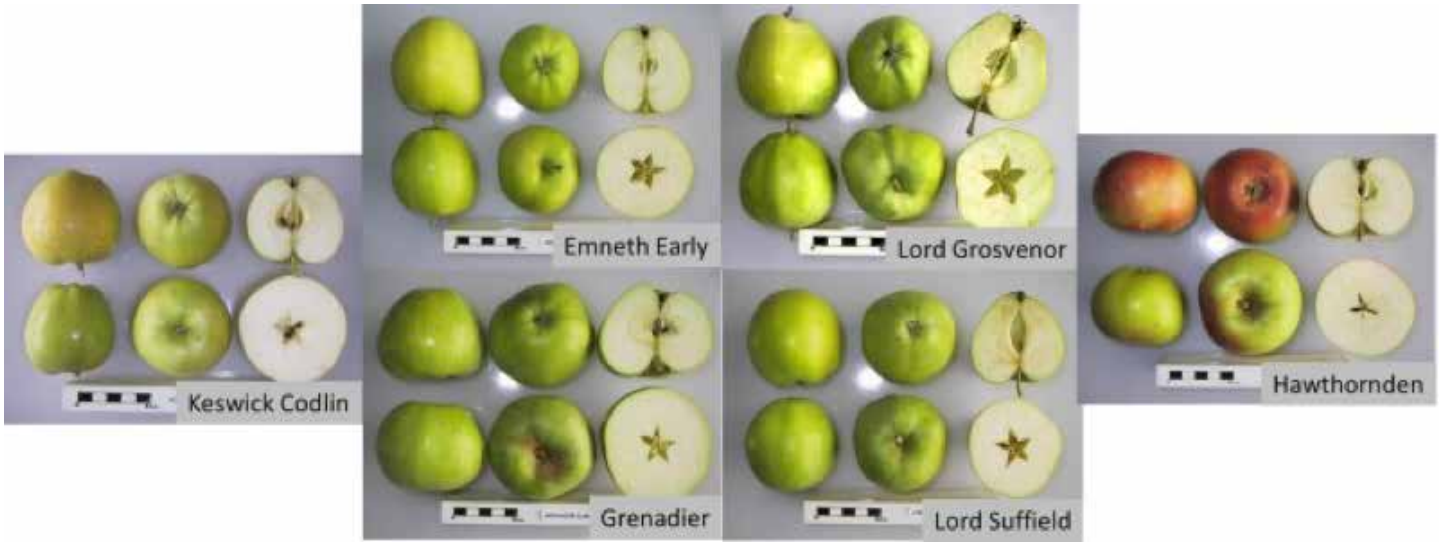
It is quite often quoted that parentage of Cox's Orange Pippin may be Ribston Pippin, possibly crossed with Blenheim Orange. Is this reasonable? No. Firstly note that both those suggested parents are triploid, so most unlikely that both could be true as one parent has little viable pollen and the other produces weak seeds, secondly the SNP study mentioned above has found one parent: Margil. It was known in England before 1750 according to the National Apple Register, while Cox's Orange Pippin was raised about 1825.
Margil has a lovely synonym, Fail-me-Never.

	number	*varieties*
DNA samples with two plausible parents	132	93
having high confidence	37	19
that are probable	16	12
that are possible	47	34
that are unlikely	19	17
no confidence at all	13	11

Examples of parent-progeny relationships

A few examples are shown below for which we have photographs available, with thanks to John Savidge and the NFC.

Emneth Early, Grenadier, Lord Grosvenor and Lord Suffield. The SNP study showed that Emneth Early (1899), Grenadier (1862) were progeny of Hawthornden (1780) x Keswick Codlin (1793); now it is seen that so too are Lord Grosvenor (1872) and Lord Suffield (1836). All are diploids. This is a rather neat conclusion and looks consistent with morphology.



King's Acre Pippin (triploid,1897) from Nonpareil (diploid,1500s) x A1142 (triploid). King's Acre Pippin has entire Nonpareil fingerprint taken into its triploid fingerprint; parentage assessed as possible but be cautious, the DNA A1142 is triploid. It is present in two MAN accessions: TA 65 and Walters 10, and also one from Ireland, all of which seem related to Cornish Pine. Is it a missing link?

Martin Nonpareil (MAN) (diploid, 1795) from Keswick Codlin (diploid,1793) x Chatley Kernel (diploid,1894); parentage assessed as probable. Note: for the historic Martin Nonpareil (illustration of 1851 is a good match to the fruit found by Wade Muggleton, Apples and Pears, 2016, p11) to have been progeny of Chatley Kernel, the latter must have been in existence at least 100 years earlier; we believe this is not improbable.

Onibury Pippin (diploid,<1883) from Golden Harvey (diploid,C16) x Keswick Codlin (diploid, <1793); mismatches on CH01h01 by 4 base pairs; parentage assessed as possible.

And finally Dolafallen (diploid), which is a seedling found near Rhayader, from Keswick Codlin (diploid,1793) x Yellow Ingestrie (diploid,1800); parentage assessed as possible.

In sum

Assessing parentage from DNA fingerprints was previously thought a step too far; I hope you are now minded to believe it may be just about possible for some.

No worry, there are still another 3000 varieties in the NFC/fruitID inventory for you to work on.

Both Peter Laws and I record our fulsome thanks to Dr Matthew Ordidge, Curator of the National Fruit Collection, for kindly technical advice and encouragement along our journeys.

Parentage of pear varieties

Just the same principles as apples. A listing is given in 'The Book of Pears' by Joan Morgan of plant breeder records for 105 varieties. Whether the DNA supports these, or there are alternative parental combinations, was assessed in a similar manner as above.

Now here's a confession, I know little about pears, not even my Beurres from Bergamots. So I asked for expert help, first Jim Chapman, then, as most are dessert varieties, Joan Morgan. She's very busy but agreed to make a start looking through the list, but when free. We hope to report 'anon'.

Stephen Ainsleigh Rice

Investigation of pear parentage

As something of a dinosaur when it comes to such aids, I viewed with some trepidation this facility when Ainsleigh kindly adapted it for pears. Thankfully though, he kindly talked me through a few examples, and I felt able to try it for myself. I quickly realised that a tool is only as good as the information fed into it. My fond hope that I could use it to investigate the origins of the perry pear were sadly dashed. It can only compare the DNA of a particular variety with other DNAs in its database. Sadly, nobody in 1650 recorded the DNA of the likely parents of these early perry pears! My comparisons with today's examples of *Pyrus pyraster* and *P. nivalis* did not help me discover whether either had influenced the development of the feral *P. communis* from which the early perry varieties such as Barland, Taynton Squash and Hartpury Green were selected. I even tried comparing a Romanian perry pear without discovering anything meaningful.

I therefore turned to investigating the parentage of all the perry varieties in the National Collection. Whilst such an exercise would be straightforward for some, for me this was quite a challenge. I am sure I have missed some clues that will become apparent as I gain more experience. For many I had no meaningful result, indicating that the likely parents had yet to be discovered or had not survived through the intervening centuries, but there were some interesting results which I show below.

My conclusion is that this is an exceedingly useful tool that will provide more and more information as the DNA of new discoveries are added to the database, but that it is more likely to provide answers for more modern cultivars than the older varieties. My simplistic definition being that a cultivar is a pear produced intentionally within a nursery setting — the result of crossing fruit with particular qualities, whilst a variety is a chance seedling (a feral pear) from outside the orchard nursery, found to be suitable for perry.

Congratulations and thanks Ainsleigh for developing this most useful addition to the research armoury.

THE RESULTS:
Red Longdon group: Ray Williams in the 1963 publication '*Perry Pears*' suggested that Blakeney Red might be the offspring of Red Longdon and Thorn and that there might be a family of pears also including Winnals Longdon. Whilst I could not find a connection between Blakeney Red and this group, my results suggest there may well be a connection between Red Longdon, Thorn, Yellow Huffcap, Winnal's Longdon, Ducksbarn and Coppy. There are some missing links, because no clear evidence of parentage emerges, but it is worth further investigation. Teddington Green and Knapper may also be members of the extended group.

Hellens Early: An interesting result is that the DNA of Hellens Early nearly matches that of the Swiss perry variety Wasserbirne, possibly suggesting that it was introduced from Switzerland to become one of today's most popular perry varieties!

There are several other results needing further investigation. Tentatively I can suggest a link between Bunch and Tumper – possibly siblings of unknown parentage. Staunton Squash may be a parent of Moorcroft and English Bergamot, Uvedale's St Germain and Beurré Hardy are dessert varieties that may have influenced some perry pears.

Jim Chapman

Tillington Court

In 1999 I reached retirement age in my NHS post. I took the opportunity to attend various courses which included hedge laying at the old orchard in Queenswood and planting new apple trees in the council owned orchard at Bodenham Lakes.

16 years later I attended a conducted tour around the Bodenham orchard and had the opportunity to taste most of the apples grown there. One particular apple I found had an outstanding flavour. I ended up eating three. There is a notice board at the orchard listing the names of the apple and pear trees. The one I liked was listed as Tillington Court. It was a very red apple with the pigment extending into the depth of the apples in places. Such red pigments are known as anthocyanins which are thought to have healthy anti-oxidant properties. It would keep up to Christmas.

I looked this variety up online and found it had been developed at Tillington Court at around the turn of the last century. I found only one source offering it. Sadly I did not order it there and then, and when I tried the next year the lady offering it had retired and there were no other stockists.

I read up on grafting techniques and tried to graft it on to some of my apple trees. I had one success out of 12 attempts but that success was short lived and did not survive the next winter.

Recently I saw a description of the Tillington Court apple describing it as a cooking apple with no note of the red colouration. Is the apple I like so much really the Tillington Court variety or has it been mislabelled?
Also are there any genetic reasons for the failure of my attempts at grafting? Can anyone shed any light in this?

Keith Ashley

Editor: Here's a photo of Tillington Court; it is described in the Welsh Marches Pomona, p80. Mid or late season cooker, see FruitID website: https://www.fruitid.com/#view/1170. Yes, grafting can be tricky, especially top-grafting. Good hygiene and preventing birds alighting on the fragile scion length for a few months is vital.

MAN Accounts

Statement of Financial Activities for the year ended 31st March 2020

	Unrestricted Funds £	Restricted Funds £	Total 2020 £	Total 2019 £
Incoming Resources				
Annual Subscriptions	1,457	-	1,457	1,449
Apple ID	997	-	997	952
Gross Bank Interest	45	-	45	34
Donations	11,166	-	11,166	10,762
Life Members	400	-	400	500
Misc. Receipts	5,150	-	5,150	4,272
Pomona Project	95	-	95	15
Speaker Fees	-	-	-	-
Grants Received	-	-	-	-
Events	-	-	-	-
Sale of Books & CD's	1,449	-	1,449	1,169
Sale of Trees	28	-	28	-
Peelers	238	-	238	155
Grafting/Pruning Courses	-	-	-	-
Juice Sale	-	-	-	-
Closing Stock	8,781	-	8,781	8,462
Total Incoming Resources	29,806	-	29,806	27,770
Resources Expended				
Direct Charitable Expenditure:				
Running and maintenance costs	14,966	-	14,966	28,582
Opening Stock	8,462	-	8,462	7,798
Total Resources Expended	23,428	-	23,428	36,380
Net Incoming Resources	6,378	0	6,378	(8,610)
Fund balances brought forward at 31st March 2019	65,043	0	65,043	73,653
Fund balances carried forward at 31st March 2020	71,421	0	71,421	65,043

	2020 £	2019 £
FIXED ASSETS:		
Tangible assets	40,443	40,617
Intangible assets	-	-
	40,443	40,617
CURRENT ASSETS:		
Stocks	8,781	8,462
Debtors due within one year	-	-
Short term deposits	-	-
Cash at Bank & in Hand	26,577	20,420
	35,358	28,882
CREDITORS: amounts falling due within one year	(4,380)	(4,456)
NET CURRENT ASSETS/(LIABILITIES)	30,978	24,426
TOTAL ASSETS LESS CURRENT LIABILITIES	71,421	65,043
CREDITORS: amounts falling due after more than one year	-	-
NET ASSETS/(LIABILITIES)	71,421	65,043

Major apple events

As regular readers will know, we normally publish an extensive list of all the major apple events happening each autumn across the Marches area. We know how much hard work goes into organising them, often by volunteers. These are important occasions when people get together, have the opportunity to see a whole range of apple varieties and, in some cases, bring along apples for ID. Marcher Apple Network have been present at many of these shows for many years, and it is here that we have spread the word about our work, made new friends, recruited members, raised income from sales and come across for the first time some of the less usual apple varieties that can now be found in our museum collections.

Please note that, although a very limited number of events may take place this year, we regret that MAN's apple identifiers will not be in attendance on this occasion.

We'd like to bring you up to date with what we know about plans for this year's events at the time of going to press with Apples and Pears.

As we go to press, just two events are hoping to go ahead although they may look a little different from their usual format. Please use the contact information to check to confirm and for details nearer the time.

HOPING TO GO AHEAD

Saturday and Sunday 10-11th October. THE BIG APPLE. A weekend of small rural apple and cider events in and around Much Marcle. Website: http://www.bigapple.org.uk. Further details: Jackie Denman, 01531 670544, secretary@bigapple.org.uk.

Sunday 25th October, Apple Day at Shropshire Hills Discovery Centre, Craven Arms. Website: https://www.shropshirehillsdiscoverycentre.co.uk/. Further details: 01588 676060

EVENTS DEFINITELY CANCELLED

The majority of apple events have been cancelled. We've included a date for 2021 where one is already available.

Frampton Country Fair
https://framptoncountryfair.co.uk/. Next event planned for Sunday 12th September 2021.

Ludlow Marches Food and Drink Festival
http://www.foodfestival.co.uk. Next autumn event planned for second week in September 2021.

Perry Pear ID at Hartpury Orchard Centre
https://www.hartpuryheritage.org.uk/events/

Malvern Autumn Show
https://www.malvernautumn.co.uk/. No date yet available for 2021.

Tenbury Applefest
www.tenburyapplefest.co.uk. Next event planned for 2nd October 2021.

Leominster Apple Fair at The Priory.
folley.farm@outlook.com. No date yet available for 2021.

Chepstow Apple Day
https://www.transitionchepstow.org.uk/events/. No date yet available for 2021.

NO DEFINITE INFORMATION AVAILABLE

Apple Day at Green Wood Centre, nr Telford
No-one has been available to confirm the event that is showing for Saturday 10th October 2020
http://www.shropshireappletrust.co.uk/appleday.php

Apple Day cidermaking celebrations at the Cider Museum, Hereford
The Cider Museum remains closed at the time of going to press and it is unlikely that an event will take place in 2020.
https://www.cidermuseum.co.uk/

The Folk of Gloucester (formerly Gloucester Life Museum)
There will be no live Apple Day in 2020, but it remains possible that a virtual event will take place.
https://www.gloucestercivictrust.org/

No-one has been available to give information on whether there are any plans for a repeat of the following events, which took place last year:

Orchard Day at Community Orchard, Llandeilo.
Apple weekend at National Botanic Gardens for Wales. https://botanicgarden.wales/visit/whats-on/

Apple day at Acton Scott Historic Working Farm. https://www.facebook.com/pg/ActonScottMuseum/posts/

Available from the Marcher Apple Network

Welsh Marches Pomona is written by Mike Porter and illustrated by Margaret Gill. It contains beautifully illustrated descriptions of 31 varieties of local apples, some of which have never featured in the apple literature. Life-size views of ripe fruit and blossom at both pink bud and fully open stages, plus line drawings of leaves and sections of fruit make this a truly unique reference work.
Hardback format, 300mm × 230mm; full colour throughout. 96 pp.
Price £15.00 + £5.00 p and p.

Apples of the Welsh Marches describes 54 old varieties of apples cultivated in the traditional orchards of the region, plus 24 further varieties grown here extensively in the past and still found in local farm orchards.
Price £5.00 + p and p.

The Worcestr Black Pear written by Wade Muggleton is an in-depth story of this iconic fruit, so embedded in Worcestershire life. Here is its story, including up to date DNA research.
Price: £8.00 + p and p.

Back Numbers of the *MAN* Newsletter
Many of the articles featured contain advice and ideas which have stood the test of time and still make an interesting read. Copies of previous issues are now available as PDFs — see web site for order form with full details of prices.

The Parmor Orchard Cwmdu, an illustrated flora, 2014, includes the history of the acquisition of the orchard. With detailed, botanically accurate black & white illustrations which could be coloured in by children. The original black & white drawings by Dr Margaret A V Gill, have been deposited in the National Museum of Wales, Cardiff.
Price £3 + p and p..

To Order all items: Preferably download an order form from www,marcherapple.net/books.htm — note that *MAN* now has a PayPal account — or write to Membership Secretary, Marcher Apple Network, 25 Grange Road, Shrewsbury, Shropshire S&3 9DG. Cheques should be made payable to Marcher Apple Network.

The Apples & Orchards of Worcestershire by Wade Muggleton This book capture a few of the stories of the apples of a county once so renowned for its orchards. With 32 varieties described and photographed, as well as chapters on lost varieties, heritage varieties, Pears, Orchard stories and aftercare, the book will be available at all events that MAN attend as well at www.marcherapple.net/shop all proceeds from the sale go to Marcher Apple Network
Price £8.50 + p and p.

MAN Library contains over a 100 books and major articles on fruit, principally apples. Members may arrange to borrow these, and the public by specific arrangement (donations are welcome). A library listing is given in http://www.marcherapple.net/libr.htm When new website is launched there will be a new address. For more information contact secretary@marcherapple.net

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