Star & Furrow

JOURNAL OF THE BIODYNAMIC ASSOCIATION ISSUE NO: 125

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OUR EARTH A GLOBAL GARDEN?

FINDING HARMONY

TREE BEEKEEPING

GROWING INTO THE SPACES



Biodynamic Association vital soil, vital food

BIODYNAMIC ASSOCIATION (BDA)

The Association exists in order to support, promote and develop the biodynamic approach to farming, gar-dening and forestry. This unique form of organic growing seeks to improve the nutritional value of food and the sustainability of land by nurturing the vitality of the soil through the practi-cal application of a holistic and spiritual understanding of nature and the human being. Put simply, our aim is greater vitality for people and planet through more biodynamic acres, more biody namic food and more understanding of biodynamics.

Membership is open to everyone. Our members are interested in working with, developing and learning about biodynamics. Subscription rates are £30 (or £20 for concessions). Membership income funds in part the work of the Association so they are directly furthering the aims of the BDA; however there are also further benefits.

Members receive a quarterly newsletter, Star and Furrow twice a year, early booking on training courses and events days. They get involved in organising and supporting biodynamic initiatives through the local group network and there are conferences, the AGM and many other events that they can attend. Many are supported in their own biodynamic practical work through advice from the Ássociation from whom they also source their biodynamic preparations and books.

Certific

The Association owns and administers the Demeter Certification Logo that is used by biodynamic producers in the UK to guarantee to consumers that internationally recognised biodynamic produc-tion standards are being followed. These standards cover both production and processing and apply in more than forty countries. They are equivalent to or higher than basic EU organic standards. The certification scheme is accredited by the United Kingdom Accreditation Service and is recognised in the UK with the coding GB-ORG-06.

Biodynamic Agricultural College The stated aims of the college are to provide education in biodynamic agriculture. This is done by providing two learning opportunities.

A distance learning course called Biodynamic Principles and Practice, which makes education in biodynamic agriculture available to students worldwide and at the same time offers support to an international culture of learning and researching biodynamic agriculture. www. bdacollege.org.uk

A practical two year apprentice training in bio-dynamic agriculture and horticulture. This takes place on well-established biodynamic holdings around the country and is open to everyone aged 21 and over. Apprentices usually live and work on the farm in exchange for board, lodg-ing and training. Their practical tuition is sup-ported by weekly tutorials and a programme of seminars and block courses.

The objective of the course is to gain basic agricultural/horticultural skills, understand the principles and practice of biodynamic techniques and create a foundation for developing an independent understanding of the earth, life and human beings from a spiritual perspective.

Biodynamic Land Trust The purpose of the Biodynamic Land Trust Limited (BDLT) is to secure land for biodynamic farming, gardening and food growing in the long term. We do this in many ways, including: gift and lease back, bequests, partnerships, community involvement and share offers.

The BDLT is a charitable community benefit society No 31448R, registered with the FSA (now FCA) in 2011 and directed by a small board of volunteer directors who are elected by members at Annual General Meetings. Members join by investing in withdrawable, non-profit shares. Both individuals and organisations can join, each member has one vote. The BDA is the custodian trustee of the Biodynamic Land Trust.

Biodynamic and Organic Plant Breeding and Seeds Limited,

The Biodynamic Association has been instrumental in bringing about the Seed Co-operative. It is work-ing to provide a future for OPEN POLLINATED SEEDS. These seeds are vital for our food future. Due to genetic diversity these seeds are able to naturally adapt to their local conditions and changes in climate.

We work in three main themes:

Breeding new strains of open pollinated plants. Producing certified biodynamic and organic seed. Sharing knowledge and skills about seed saving, plant breeding and the importance of seed and food sovereignty.

The Seed Co-operative is registered under the Co-operative and Community Benefit Societies Act 2014 as a Community Benefit Society, registration number 7013

The BDA is a custodian trustee of the Seed Co-operative

Our Roots in Anthroposophy Biodynamics was first envisioned by Rudolf Steiner (1861-1925) in a series of lectures given in 1924. Since then, biodynamics has continued to develop and the Association keeps abreast of developments in science, nutrition, education, health and social reform. It is linked to the Agricultural Section of the School of Spiritual Science (Switzerland) and affili-ated as a group of the Anthroposophical Society in Great Britain. It is also a full member of Demeter International, SUSTAIN and IFOAM.

The BDA makes the most of every penny; we are determined and focussed on achieving our purpose. Our resources are used effectively and efficiently and the co-workers in our organisation are empowered to direct their free and active will to their task.We also notice the last line of the Foundation Stone Meditation by Steiner 'With Single Purpose' and let it resound in our hearts and in our organisation.

Funding The Association is a small organisation wholly dependent on subscriptions, donations and grants. There is a growing interest in biodynamics and to meet this welcome development additional funds are being sought. Becoming a member and encouraging others to join is an important way of supporting the work. Donations over and above the recommended membership subscription are also extremely helpful. Even the smallest contribu-tion can make a real difference. For those considering making a Will and possibly leaving something to support biodynamic development, a legacy leaflet is now available. Please contact the office for a copy. For information on all aspects of the Association's work contact:

For information on all aspects of the Association's work contact:

Biodynamic Association, OPENhouse, Painswick Inn, Gloucester Street, Stroud, GL5 IQG +44 (0) 1453 759501 office@biodynamic.org.uk www.biodynamic.org.uk

STAR & FURROW

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The function of Star and Furrow is to encourage the free exchange of ideas and experience among those who work with, or are interested in biodynamic farming, gardening and related subjects. Contributors subscribe to no dogma and are bound by no rules. Their con-tributions are personal documents, not official utterances by the Association.

Final dates for contributions are 1st April for the summer issue and 1st October for the winter issue. Copy can either be submitted in a typed printed format or as an electronic text document by e-mail. Please send articles to the editor at the Biodynamic Association Office.

BIODYNAMIC ASSOCIATION

Patron: Patrick Holden CBE Director: Peter Brown Council Chairman: Chris Stockdale Council Members: Ian Bailey, Sophie Christopher Bowes, Lynda Brown (co-opted December 2 Liz Ellis, Beatrice Krehl, John Lister, Rachael O'Kelly, Chris Stockdale, Executive Team: Peter Brown, Jessica Standing, and Richard Swann

Association Administrator: Jessica Standing Telephone: 01453 759501 Email: office@biodynamic.org.uk

BIODYNAMIC CERTIFICATION

Certification Board Chairman: Richard Thornton-Smith Manager Director: Tarry Bolger Telephone: 01453 766296 Email: tarrybolger@biodynamic.org.uk Administrator: Margaret Richardson Telephone: 01453 766296 Email: certification@biodynamic.org.uk



Cover photo: © Richard Swann



Star& Furrow

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Editorial

Welcome to the summer issue of Star and Furrow. This issue has a very eclectic mixture of articles with several themes being expressed. Our main theme on gardening leads up to our conference in September where the theme is 'Revitalising our Earth, one garden at a time'. This conference gives us a huge opportunity to present ourselves to the wider organic world at Ryton Organic Gardens in Worcestershire. It will be both a practically orientated conference as well as outlining biodynamic principles. We have excellent speakers and workshop leaders lined up to guide us through the weekend.

We have had a presence there for some years through the Elysia Biodynamic Garden, which was installed nine years ago. Recently it has become run down, but Rachael O'Kelly and Beatrice Krehl along with Joe Wilkin have valiantly taken on to reinvigorate it. This is quite an undertaking considering that they both live at least one and half hours' drive away. In their introductory piece, they give a bit of background to the garden and the work going on there now. I would recommend a visit during the summer and especially encourage as many as possible to come to our conference.

In February, I attended the annual Agriculture Conference in Dornach where the theme was 'Our Earth a Global Garden?' I was impressed by one of the introductory lectures by Jean-Michel Florin, which I felt would make a good background to the garden theme. Interestingly in his article amongst other things, he writes about Beauty and Diversity. These are also expressed in schoolteacher Richard Dunne's piece that he originally wrote for the Sustainable Food Trust. He has taken an educational approach to land based on principles described in Prince Charles' book Harmony.

We in the Biodynamic Movement very clearly see ourselves as being a family of initiatives. Apart from the Biodynamic Association, there is BD Certification (certifying to Demeter and organic standards), Biodynamic Land Trust, Biodynamic Agricultural College and the Seed Cooperative. By working together, this give us strength and unity in presenting the biodynamic message to the world. News and reports are included in this issue. Especially exciting is a piece on the newly bought piece of land for the seed and plant breeding work.

For the past 6-8 years the international biodynamic community has been working on principles and values that best express our work. These are seen to be a distillation of the intentions of the Agriculture Course by Rudolf Steiner, and how these inform present day biodynamic practise. After much work, the final version of the Mission, Principles and Values document was approved at the Demeter International Members Assembly in June. These are reprinted in whole in this issue. They are not to be regarded as a dogma but to give food for thought and to stimulate discussions as to what each of us regards as own personal and collective principles.

Along with this is an interview with Christoph Simpfendorfer, the new General Secretary of Demeter International. He outlines some of important and exciting challenges that Demeter International is facing and how they are embracing the future with a new 'paradigm shift' in how to evaluate farms and gardens. I hope we can report more on these exciting developments in futures issues.

Meanwhile I hope you are having a good growing season despite the poor summer we are having. We hope to see many of you at the conference later in the year.



Richard Swann

Biodynamic Association vital soil, vital food

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Biodynamic Association vital soil, vital food

FROM THE DIRECTOR OF THE BDA Peter Brown



We are living through a significant historic moment with Britain voting by a small majority to leave the EU. The Referendum has also revealed startling divisions and wealth inequalities in our country that have arisen from policies that privilege the interests of corporations and short-term profit. These values are reflected in our agriculture and food industries that see food as a commodity and the food market dominated by a small number of supermarket chains.

It is clear to many that such policies and society have to change to become more people centred rather than profit centred but the polarisation of views is likely to become starker. No doubt David Richardson is speaking out the view of many in farming and the government when he declares in his Famer's Weekly column that our exit from the EU will mean the growing of GM crops and the use of banned neonicotinoids and also glyphosate (which has only just had an 18 month reprieve from being banned by the EU) (FW 1.7.16). Such views are seen by others as highly irresponsible in the face of the recent research findings of the United Nations that concludes that, rather than producing more food under unequal and ecologically destructive conditions, the solution hinges on creating a more sustainable, democratic and fair food system for all. [Farming the Future: Organic and Agroecological Solutions to Feed the World, FAO]

Farming the Future calls for policies and initiatives that connect people back to their local food economies and embed food growing within living ecosystems of which we all are a part. These proposals resonate with the growing desire within the UK and Europe to support new models of farming and social enterprises, such as Community Supported Agriculture (CSA's), that 'give an honest priority to people, place and planet.' Indeed, the recent report 'Overview of CSA in Europe' (2016) reveals that CSA in Europe is a dynamic movement that feeds between 500,000 and 1 million eaters with many new initiatives starting every week.

The proposals also accorded with two different events I attended this week. The first was a gathering at Daylesford Farm promoting a new venture and website called Agricology (http://www.agricology.co.uk) This is something very worthwhile. It aims to provide unrivalled access to world-class information resources and champion good farming practice based on agroecological principles. The second event was a pioneering farmer-led event on a farm in Hertfordshire called Groundswell.(http://www.groundswellag. com) About 500 farmers attended, all with an interest in improving their soil, making it more alive and building up the organic matter through methods such as no-till, cover cropping and mob grazing.

Both events show that people are seeking for significant change and that there is a steady momentum building. We need cooperation and alliance building between many different organisations and individuals to help this come about - ways of working that the Biodynamic Association (BDA) is dedicated to being part of and promoting. WEBSITE An important first step is improving how we as the BDA communicate to the wider world. It seems very fitting that at this time the Biodynamic Association has created a new and updated website. It has clear information on all aspects of Biodynamics for new visitors, as well as serving the needs of our members. (By the way, one can now renew ones membership online as well as become a new member!) The new website is very much thanks to a new Trustee on our board, Lynda Brown, as well as Jessica Standing, Richard Swann and Sebastian Parsons who have all put in many unpaid hours to make it happen. On top of that we also have the Biodynamic Buzz our new biodynamic e-newsletter which you can subscribe to on the website.

RAINING The BDA is helping to support new pathways for creating livelihoods on the land. A recent development we can be proud of is that our level 3 Diploma in Biodynamic Farming and Gardening has been officially recognised by OFQUAL in the UK through the Crossfields Institute. This means the Land Based Learning or Apprentice training is now an officially recognised BD training. While training has lost some training farms through developments within Camphill centres, encouragingly there are a number of new farms wanting to take on apprentices. Excitingly another new biodynamic training is being developed by Ruskin Mill and will start in the autumn. It is to be called The Ruskin Mill Biodynamic Training Programme and will broaden the Biodynamic trainings available to those keen to learn agriculture, particularly those attracted to the therapeutic as well as the agricultural side. It will be available on a number of the Ruskin Mill farms. SEED CO-OPERATIVE Elsewhere in this magazine, and on the website, please read about the important developments of the Seed Co-operative. This is a key initiative for growers across the UK, countering the wider trend towards seed breeding and production being in the hands of a small number of large companies. The good news is that a proper home for the enterprise has been found; a 24 acre nursery with grade 1 soil and the entire infrastructure we need in Lincolnshire. This has been bought through loans, donations and selling shares. Please do consider becoming a member of this Community Benefit Society and supporting this very important work by helping us pay off the loan we have against the property.

BIODYNAMIC CONFERENCE Lastly I want to bring your attention to our two-day conference Biodynamics: Revitalising our Earth, one garden at a time on 17 -18th September, which is taking place at Garden Organic in the Midlands. This is the home of the Heritage Seed Library and one of the oldest organic institutions in the country. We also have a biodynamic garden there for all their visitors to see. The focus of the conference is very much on biodynamic gardening. We will also be celebrating the public launch of the Seed Co-operative on the Saturday evening. Please come to hear the speakers, to do the workshops and for the wonderful social interaction that always takes place at these events.

So, with the new website, a strengthened training programme, a home for the Seed Co-operative and a Conference that offers us all a chance to connect and be part of the change, I can say that I am proud of the role the BDA is playing in responding to Gus Speth's call for honest, fair and environmentally responsible values to guide the future of our food, the land and our wonderfully diverse society.

© Peter

Bro

This September, Ryton Organic Gardens in Warwickshire will be host for the Biodynamic Association's Conference 'Revitalising our Earth one Garden at a Time'. Ryton Organic Gardens is the UK's leading centre for organic gardening and the conference provides the perfect opportunity to present biodynamics to the wider organic movement. The Gardens also have a demonstration biodynamic garden on site. In the piece below, Rachael O'Kelly and Beatrice Krehl introduce us to the Elysia Biodynamic Garden and describe some of the background to its creation.

Growing into the Spaces – *The Elysia Biodynamic Garden revisited*

By Rachael O' Kelly and Beatrice Krehl

HOW IT ALL BEGAN

The Elysia Biodynamic Garden opened in the summer of 2007 showcasing a shining example of a biodynamic garden. Located at Garden Organic, the UK's leading charity devoted to promoting organic principles to the public, it was a major opportunity for biodynamics to reach out to a wider audience.

Elysia, an ethical marketing and logistics company, funded the construction of this garden designed by Andy Jones. They also funded an apprentice to study and care for the garden. However, when this funding ended in 2010 major changes were happening at Garden Organic and the garden became neglected.

In 2015 the new CEO of Garden Organic, James Campbell, contacted the BDA to say that he was committed to hosting every type of sustainable, organic garden at Garden Organic and asked whether we would like to take the garden under our wing.

Well, the answer was yes and miraculously, a biodynamic association member local to Garden Organic, Joe Wilkin, generously dedicated one day a week of his time to work with the garden.

He has done this ever since, largely on his own, cycling from Coventry in all weathers. The love and care Joe has given to the garden shines through; we really noticed this when he left for a 6-week placement on a biodynamic farm in Scotland in May. The garden missed his dedication and the difference without him was marked.

Since 2015 we have held volunteer days which have helped to bring the garden to life again. During the 'Introduction to Biodynamics' workshops at the Garden Organic's Master Composters and Gardener's conference last September, we were able to make and spray horn manure on site as a group which felt like a wonderful gift for the garden.

This year Beatrice, a new trustee for the BDA has become involved with the garden and this is a wonderful boost to our workforce. Since she joined we have been able to support Joe more, organise several further volunteer days, replant areas, make plans, build compost heaps, spray the preparations, make horn silica and valerian preparation on site and start on pruning.

A very kind and deeply appreciated donation from Ruth Nesfield Cookson has enabled us to undertake more regular visits to the garden as well as redesign the entrance to the garden.



DESIGN

Andy Jones, who designed the Elysia garden describes the inspiration behind its creation:

"This garden attempts to introduce the general public to the ideas behind Biodynamic Gardening. The essential elements of Biodynamics are symbolised through artistic interpretation, aimed at encouraging the garden visitor to linger and contemplate our role as gardeners.

The garden can be seen as an organism, much in the same way as a biodynamic farm is, with the individual elements of the garden forming a whole through the planting themes and artworks.

An oak entrance sculpture invites you in, to be met by a large vortex pebble mosaic. The creation of a water vortex is essential when stirring biodynamic preparations. Raised beds are planted to emphasise either flower, fruit, leaf or root and act as a skin protecting and holding you within a series of three interlocking rooms.

A lemniscate path network allows the visitor to flow through the garden as much as blood flows through the body. A symbiotic relationship is set up where one can both give and receive nourishment.

A stainless steel framework designed around the lotus flower, (a symbol of purity and wholeness), encircles the elevated section of the garden. Stained glass discs are fixed within it, representing the seven major celestial influences upon our earth, (Sun, Moon, Venus, Mercury, Mars, Saturn and Jupiter). A central island harbours the earth realm, its centre point suggesting at our position within the cosmos. This is encircled by individual pebble mosaics showing the phases of the moon, our closest companion, whose subtle effects influence so many of the earth's life processes.

All life processes need water and the Flowform water feature at the top of the garden reminds us of this necessity but also of the importance of rhythm. It is the combination of rhythm and vortical flow that has been utilised to make biodynamic preparations to support the soil and plants. Is it possible that water acts as a mediator for influences from the cosmos? Leaf shaped oak benches provide a resting place to ponder such thoughts while immersed in the sounds, sights and scents of the garden.

It is hoped that the contemporary design approach communicates that the science of biodynamics is a relevant addition to today's needs for a healthier way of working with our environment. Gardening is a partnership with nature where we should endeavour to strive towards understanding its complexity and thus enable a more harmonious relationship."



©: Richard Swann

JOURNEY OF A VOLUNTEER IN THE BD GARDEN – Joe Wilkin

Volunteering at Ryton organic gardens means getting an opportunity to meet other gardeners and learn from them. Volunteer days organised by Rachael are good for experiencing biodynamics and sharing knowledge and experiences

Anton Rosen of Garden Organic has kindly arranged for the biodynamic garden to use a space in his greenhouse for germinating seeds. Anton runs the new seeds project to acclimatise exotic vegetables to the UK. Mark the head gardener at Ryton is also helpful and always good for advice. The biodynamic garden is a big opportunity to spread biodynamic methods to the public.

The garden is also a chance for people to become interested in biodynamics and gain a deeper understanding of gardening. As there is no livestock at Ryton, animal manures have to be brought in. The garden as a self-sustaining organism, more than the sum of its parts, is thus not fully established. However, the compost heaps point to the principle that fertility is produced on the garden, not brought in from outside.

When people are starting a new garden, Ryton is the kind of place where they look for ideas, so the potential for the garden to promote biodynamics is huge. If the Elysia garden can flourish and exhibit vitality then more people will be attracted to biodynamics. Then the biodynamic preparations, Rudolf Steiner's remedy for the sick earth, will be spread over a wider area, and radiate goodness into the universe.



©: Rachael O'Kelly

HELP MAKE THIS GARDEN SPECIAL – WE NEED YOUR SUPPORT!

The garden flourishes under regular attention and is truly at its best when full of people. There is nothing more rewarding than being able to meet visitors to the gardens and share with them what a special and inspiring pursuit biodynamic gardening can be. Lighting a spark in people's hearts that allows them to feel that they are able to make a difference in their own back garden is such an important opportunity and the small stand that we have for biodynamics in the shop at Garden Organic is frequently selling out of books and planting calendars.

We are looking for people in the local to the area who may be interested in taking a more active role in tending this garden into the future (with guidance and support).

We also have dream for bees to have a place in the garden and the hope is that a sun hive will in the future mark the entrance to this special space. The conference in September is a huge motivation to help this garden shine again and we hope to launch a series of workshops in collaboration with Garden Organic to share and celebrate biodynamic gardening in 2017.

FUNDING AND DONATIONS

We see the potential of the Elysia Biodynamic Garden for promoting biodynamics as huge and far reaching. Gardeners have just as much power as farmers to have a positive influence on the earth, soil, plants and bees! There are apparently 27 million gardeners in the UK and many of them are turning to organic and biodynamic practices.

The more people we can inspire, the better for the future of our planet!

We are looking for $\pounds 10,000$ to properly rejuvenate the garden and ensure that it remains a shining beacon of inspiration now and in the future.

To make a donation for the Garden please either send a cheque (made payable to the BDAA) to BDA Office / Elysia BD Garden Appeal.

Or by Bank Transfer – our Bank details or card payments can be made over the phone by calling the BDA Office 01453 759501.



©: Rachael O'Kelly

Biodynamic Gardening Conference at Garden Organic September 2016

Revitalising our Earth one Garden at a Time

Gardeners are the natural stewards and protectors of our Earth, and how we garden has never been so important. As we know, by practising biodynamic gardening methods it provides a much needed catalyst for regeneration, which revitalizes soils, nurtures bees, provide safe havens for wildlife, and keep our precious bio-diversity alive.

With this in mind, the BDA decided to focus its 2016 Conference on gardening and Garden Organic was felt to be the perfect venue.

Packed with hands on practical advice, workshops and captivating lectures, the conference aims to explore the biodynamic approach to gardening and how to take your organic gardening to a new level of holistic health.

Highlights include:

The importance of open pollinated seeds and our exciting new Seed Cooperative venture

Seminar from an experienced biodynamic plant breeder

Expert advice on biodynamic gardening, "no dig" gardening, meadow/ "no mow" and urban gardening

How to make biodynamic compost and its benefits Biodynamics and Permaculture – perfect partners

Improving soil health and the soil food web

Speakers and workshop leaders include: Tom Petherick - *Biodynamic gardener, Demeter inspector and writer* Ute Kirchgässer - *Biodynamic plant breeder*

Charles Dowding - No dig expert

Special Event on Saturday 18th September 7.30pm

Launch of The Seed Co-operative Share Offer – This event will be open to the wider community as well as conference participants

The first of its kind in the UK be part of our new co-operative venture to grow biodynamic and organic seeds that everyone can afford. Open pollinated seeds are vital for all our futures. Meet the directors, find out why, and how to become involved in this important ground breaking project. For further information see the Biodynamic Association website

www.biodynamic.org.uk



"Our charity brings together thousands of people who share a common belief - that organic growing is essential for a healthy and sustainable world.

Through campaigning, advice, community work and research, our aim is to get everyone growing 'the organic way'."

About Ryton Organic Gardens

Ryton Organic Gardens is the perfect destination for anyone interested in seeing the principles and practices of organic gardening. Our inspirational demonstration gardens, based five miles from Coventry, provide the perfect chance for visitors to learn more about all aspects of organic growing. Step into our chemical-free world and experience the benefits of gardening in harmony with nature, see our Heritage vegetables growing throughout the seasons, spend time in our sensory garden, learn about organic gardening therapy projects, composting and much more.

www.gardenorganic.org.uk

Our earth, a global garden?

By Jean-Michel Florin



The garden in ancient Egypt (The garden of Nebamun, Mural from his grave in Thebes, 1400 BC)

> In this contribution I would like to sketch a rough history of the garden. What is a garden? Why have human beings felt the need to create gardens since the earliest of times? What is a gardener's eye? What can be seen through a gardener's eyes? Can a farmer learn something through it for his work on the fields, with vegetables, fruit production, vineyards, forests etc?

Let us try to understand the term 'garden'. A garden usually brings together things like food, beauty and relaxation. There is no garden without a gardener. The four kingdoms of nature are always included in the concept of a garden and the human being's role within it is of central significance. This is true even when human input is deliberately limited – such as in a 'wild garden'. In this case the human being is intensively involved with the processes of nature. It is a principle underlying every garden. Each one is unique even if it appears to have been copied from a catalogue. It is unique because it reveals something of the gardener's individuality! A glance into a suburban garden will tell a lot – and not only about the owner's preferences in garden design.

WE ARE LIVING IN THE ANTHROPOCENE AGE

The earth, which not so very long ago was considered largely wild and untouched, is today being worked, exploited and influenced by human beings in every last corner. For the first time in history mankind has a greater influence on the state of the planet than the processes of nature. The human being has now become the main geological force: Since about the end of the second world war we have been living in the Anthropocene geological age. This also means that the earth has become our responsibility. Unfortunately however we are a long way from accepting this and treating it as a beautiful and living garden.

THE WHOLE EARTH AS A GARDEN

It had long been thought that the tropical rainforests are an example of untouched nature. More and more has been discovered over the last decades however that indicates how these unique forests have always been and still are the creation of 'subtle gardening activity' – the Amazon rain forest continues to be cultivated by the indigenous Kayapos people (Suchantke, 1993). They clear small patches of forest and for a short period of time use them as gardens to produce a great variety of plants. After a while they move on and choose a new patch to cultivate, leaving the previous area to grow back into a forest. These people never sought to conquer nature. Indeed there never was any distinction between 'culture and nature'.

With the beginnings of agriculture in ancient Mesopotamia came the first distancing of mankind and nature – plant breeding began and plots of land were enclosed and cultivated. This is the region from where gardening and farming spread across the Middle East, Egypt and into Europe.

In that early period gardens were places of ritual sacrament, places in which the divine world could be revealed to mankind. They were places conceived according to divine cosmic laws. They were often surrounded by a wall as protection against the desert and to secure moisture and shade – all this was a pre-condition for making the growing of a wide range of 'plants', including human qualities, possible.

The term 'cosmic' from the Greek, originally meant the order which permeates the world and the beauty which arises out of the harmony of this order ('cosmetic' also has this root). Socrates spoke of how heaven and earth, the Gods and human beings are connected through friendship, by respecting this order, keeping things in proportion and through justice. This is why the world is referred to as 'cosmos' and not 'chaos' (meaning disorder). For our actions in the world to make sense, this order needs to be understood.

The human being exists between the cosmos and the earth. The earthly connection is experienced through gravity. We notice in sitting on a chair for instance that it exerts pressure. Standing up we feel a force pulling us downwards and without which we would float away.

Looking upwards we can experience the blue sky by day and the starry heavens by night. During the day there is a single focus, at night there are countless relationships between points of light. The daytime sky has no distance, it reaches down to us. It is there amongst all the objects in our surroundings. And yet there in the sky there is nothing material. The sky, the cosmos is only an image.

In ancient Egypt the garden was also an image of this divine cosmos. Every garden was developed around a holy pool representing the primeval ocean of life. Each plant was an image of a divine being – the date palm for instance was an expression of the sun God Re. The divine world was experienced in this way out in nature. The separation between the inner and outer worlds was not as pronounced as it is today.

LANDSCAPE AS THE GARDEN OF GOD

Later on, in ancient Greece the whole landscape was looked upon as a garden and a house or temple was built for each of the Gods dwelling in a particular landscape. The Greeks felt the presence of spiritual beings in the various kinds of landscape. This came to further expression in the Roman concept of 'Genius loci' – spirit of place.

With the Romans the garden lost its connection to the divine. The living world of nature became more an more an object by which to satisfy one's needs. The idea of distinguishing between 'private' and 'not private' came from the Romans. They introduced the idea of owning land. Around the great villas, large gardens with many specialised sub-divisions were created – herb garden, vegetable garden, topiary garden, pleasure garden, leporarium (for keeping rabbits). Gardens were now being designed in human proportions. The divine order was replaced by a purely human design. The natural wilderness perceived as ugly, was now to be tamed and structured. The human being became more individualised and distant from the Gods who were experienced ever less frequently in nature.

THE GARDEN AS AN IMAGE OF HEAVEN

During the Middle Ages the sacred garden reappeared, at first in the Islamic world where the divine cosmos was expressed in the highly structured gardens. It was a place of inner contemplation and prayer. The human being no longer sought the divine among the plants of the garden but in himself. Nature with her plants and animals, is God's creation. The quest now turned inward and nature became a reflection of the soul. The pool of water as a symbol for life was once again at the centre of the garden. The garden was an image of paradise on earth.

It was a similar situation in the 'Hortus Conclusus' of the European Middle Ages. The Cloister garden was enclosed and protected. It was the place where the human being, once expelled from paradise, could prepare himself for an eventual return to God. Here too the garden was an image of the human soul. The various plant families symbolised different human soul attitudes. Within the Cloister garden one could seek knowledge of the self and of the divine, protected from the wilderness of nature. It was a place for caring and nourishing the soul.



The Cloister garden of the Middle Ages (hortus conclusus) (Master of the Upper Rhine School, ca. 1410)



The Baroque garden: Castle of Versailles (Pierre Patel, 1260x913 cm, 1668)

With the coming of the Renaissance the sacred quality all but vanished from the art of gardening. All genuine connections with the divine had been lost even if images and sculptures of Greek and Roman Gods were still to be found in the gardens. Nature was reduced ever more to mere building material. The gardens had a strong architectural form and the plants were clipped geometrically in accordance with the overall design but without letting their individual qualities express themselves. This tendency led the garden to become more and more a prestige symbol for the owner. Garden design was something for architects and technicians. The peak of this development is found in the massive garden of Versailles. It was intended to demonstrate how the Emperor of the Sun, Louis XIV controlled the whole of nature. The king took the place of the sun (or God) upon the earth.

A counter movement arose during the 18th century in which various attempts were made at developing a new relationship between the human being and nature. It was no longer about realising the divine order on earth but of creating a new design approach based on an actively engaged relationship to nature. This originally came from the landscape painters who were looking at nature with 'new' eyes.

The discovery of landscape in European art played a strong role in the development of European gardens. According to Joachim Ritter, landscape is '*nature made aesthetically contemporary in the eyes of a sensitive observer*' (Ritter, 1990). Put another way, landscape is the sense-perceptible and super sensory experience of nature's order. If I look at

a beautiful landscape, I perceive it first of all as a whole by breaking it down into its various parts (trees, rocks, river, houses). What makes it a landscape however is the unity bringing together all these individual parts. Or again, it is a personal experience that enables me to see the landscape as a whole (as a cosmos). Inspiration is no longer sourced in divine law as it was in ancient times or during the Middle Ages. Instead it arises from the direct experience of individual human beings in the landscape.

A characteristic of this landscape garden impulse is the dissolution of boundaries. In contrast to all earlier forms of garden that were separated from the world around it by high walls or fences, the landscape garden seeks a connection to the surrounding nature. It would ideally like to encompass the entire landscape.

THE DIVERSITY OF GARDENS

From the mid 19th century and on into the 20th, the story of garden development becomes ever more diverse. A number of gardening personalities such as Gertrude Jekyll (1843–1932), William Robinson (1838–1935) and of course Rudolf Steiner (1861–1925) could be mentioned who sought to give the garden a spiritual dimension. *«A garden should be full of life – its living quality based not on beautiful forms and colours alone but whose breath is permeated by the divine»*, said garden philosopher, Jeremy Naydler. (Naydler, 2011)

Claude Monet the famous painter and passionate gardener always sought the spiritual (Genius loci) in his pictures. He wanted to grasp the cosmic context of light: «To



Claude Monet: The Japanese Bridge (1923

catch the moment with the steady all encompassing light» (Wildenstein, 2010). In his personal journey as an artist Monet moves steadily away from 'perspective distance' (a separation from the object) to become more actively engaged with nature. In his painting entitled 'The Japanese Bridge' produced in his later years, the concept of distance is no longer valid. It is only strength, being and relationship – without any perspective. It is an anticipation of the step we can take today – of no longer simply observing things from outside and seeking to dominate them but of once again entering into a relationship with nature in our thoughts, feelings and intentions.

New farming initiatives have been springing up all over the world in recent years and in our towns and cities gardens are being created in which the previously strict division – production and amenity – is being overcome. Today we are no longer content as mere observers but wish to become creatively active.

What routes are open to us?

Connecting the garden with the cosmos once more. Today this means connecting the terrestrial and cosmic qualities of each individual location. It means experiencing the place in a qualitative way and not simply as an empty space.

The three qualities underlying all design work from Plato till the end of the Middle Ages need to be rediscovered today in a new way:

Truth – The world needs 'purpose', it must be productive and efficient otherwise it is only 'a fine semblance'. Sober scientific clarity is a help here.

Goodness – today we might say 'ethics'. Goodness concerns the way we live, cooperate and ultimately love one another.

Beauty – The Franco-Chinese author François Cheng writes something very interesting in his book 'Five Meditations on Beauty': 'The world needs truth and goodness in order to survive. But why do we need beauty? Indeed why is the world beautiful? It is a riddle. The world could exist without being beautiful. There needs to be beauty in the world however so that we can experience something of the higher, the cosmic, the sacred'. This is why gardens were always beautiful.

What is beauty? Something is beautiful when it is able to radiate out and outwardly express the spirit living within it. This is the cosmic quality of beauty. Rudolf Steiner describes it in the following way: 'A space where forces appear to approach the earth from all parts of the cosmos and sculpt the forms present on the earth's surface from outside'. Because a being is given form from the periphery of universal space something is expressed within it and this, in the original meaning of the word, is beauty. Beauty is in fact how the cosmos expresses itself in an earthling' (Steiner, 1922). It is no longer the divine order which determines the beauty of the world 'from above'; far more important is what streams out from the specific place (Genius loci) and from each plant and animal. This means for example that an understanding for the place, the garden or the farm is needed before any new design can be countenanced.

The gardens, farms and parklands of today and tomorrow need to develop these three qualities of truth, goodness and beauty. They need to feed us and be productive; they need to nourish the soul through their beauty; and they must serve an ethical and social purpose.

Transcript of a lecture given at this year's Agriculture Conference in Dornach: Our Earth a Global Garden.

Jean Michel Florin is one of the leaders of the Agriculture Section at the Goetheanum in Dornach. Reprinted by kind permission of the Agriculture Section at the Goetheanum, Dornach, Switzerland

References

Suchantke, A. (1993). Partnerschaft mit der Natur, Stuttgart. See also Eco-Geography, Floris Books 2001 Ritter, J. (1990) Landschaft – Zur Funktion des Ästhetischen in der modernen Gesellschaft, München Naydler, J. (2011) Gardening as a Spiritual Art, Edinburgh, Floris Books Wildenstein, D (2010) Monet or The Triumph of Impressionism, Taschen Steiner, R. Anthroposophy and the Visual Arts (Lecture 9. April 1922), Golden Blade 82 (available online at: http://wn.rsarchive.org/Lectures/19220409p01.html

My journey into biodynamics

pictures courtesy of Lee Hard

I was very fortunate to grow up surrounded by both gardening and horticulture. There is a difference – gardening is likely to be a hobby whilst horticulture is an industry. My parents inherited a camellia nursery started by my father's uncle so we had that going on all around us. I knew from a young age that I wanted to spend my working life outdoors.

When I finally managed to let go of my childhood obsession with horseracing and join the industry proper at the age of 25 I was far down an organic path. This led quickly to a full Permaculture design course and many happy hours spent reading John Papworth's 'Fourth World Review'.

However before all of that, at nineteen or thereabouts I had encountered the work at Findhorn. I was gripped by the revelations that the pioneers in Scotland had received support from the elemental world in producing outsize vegetables in estuary sand with nothing more than a little compost for nutrition.

Yet part of me was not surprised. Ours was a conventional Christian family and we went to church on Sundays and were encouraged to believe in God. Yet my Father was continually questioning the 'miracle of life'. What he really believed in was the 'mystery' behind it all. He imparted this to us and it made Findhorn and latterly biodynamics so much easier to take on board.

When I told him of my interest in biodynamics with elemental beings and heavenly activity, he peered at me briefly over the top of the newspaper and muttered that it made perfect sense to him and was perfectly obvious, before snapping the paper upright again.

This is why I believe that biodynamics will continue to prosper over time because people understand that there is so much more to it than using the biodynamic preparations or working with a planting calendar. It is about opening to this fantastic mystery and accepting that the life going on around us is one extraordinary miracle.

I did not meet biodynamics properly until many years later when my wife Melanie and I moved to Devon and enrolled our daughter Rose (now 14) in the kindergarten of the South Devon Steiner School.

I have written a few pieces for Star and Furrow down the years, usually something about the garden or the few acres of land we have here at Cholwell Farm because we are certified biodynamic and I have worked as a farm and garden inspector for the Biodynamic Association under Demeter for a number of years now.

Having been around biodynamics for a few years now and surveyed the scene from both the outside looking in and the other way around, I am curious about how it is possible for people to get involved, on the basis that there is an increasing number of you out there who are showing an interest in biodynamics.

Increasingly people are the feeling the need and desire to be in nature, grow some of their own food and establish a relationship with 'outdoors'. Never before has there been such a level of concern for the environment, nor for general health through nutrition. There is also now a higher level of understanding that time spent in nature is a good thing.

If biodynamics covers all these bases, why is it so difficult for people to take it up? It is my experience that within the biodynamic movement in the UK we deride ourselves for not putting the case for biodynamics in a digestible form.

I think we must accept that while on the face of it setting out to work with astronomy, organics and the rhythms and cycles of life should not be too far out of reach, the nitty gritty of biodynamics as laid down by Steiner and enhanced by the late Maria Thun with the planting calendar and many others, takes some grasping.

Perhaps that it is a spiritual approach puts people off. I doubt it. After all interest in spirituality in its many forms is at an all-time high now, more so than at any other time since the 1960s, and before that the last few years of the Victorian era and the early part of the 20th century when the likes of Steiner, J. Krishnamurti and the Theosophical Society were intriguing people in matters beyond the norm of Christianity.

More likely I reckon is that to understand the manufacture and use of the biodynamic sprays and preparations – the bedrock of the practice – with any degree of certainty takes some doing.

Personally I must admit to being far from sure what is actually happening when I am burying a horn full of silica or manure in the ground for the summer or winter. I really feel strongly that I must own this as an individual. I have discovered these past 10 years that we carry out these tasks blindly. We do them because Steiner told us that we should and in that respect not much has changed since 1924. Yet we see the most incredible results, often scientifically proven.

acres of land we have here at Cholwell Farm because we are certified biodynamic and I have worked as a farm and garden lowing instructions laid down by Rudolf Steiner in 1924 and



running with them. Therefore the way to get moving with biodynamics must surely be to....just do it!

As individuals we are not beholden to any way of practicing biodynamics we simply need to know that we can do it without anyone telling us we are doing it in the wrong way. Plants grew well before biodynamics came to your garden, didn't they? Steiner encouraged us to experiment with the preparations and this I feel we must do.

Coming to a ready-made biodynamic community made life easy for us. Immediately we were around lots of people who were doing biodynamic gardening - using Maria Thun's famous calendar, getting together, and doing workshops. It was on tap.

Also our neighbour Jeremy Weiss at Velwell Orchard had his land under certification. He was therefore dutybound to use the two field sprays (BD500 and BD501) and the biodynamic compost preparations in order to be compliant with certification standards. Jeremy was very generous with his knowledge and experience and I am grateful for all he shared with me.

Over time I have lost count of the amount of hours I have spent talking about how to encourage people into the world of biodynamics. Almost as if it was a duty. I used to do this with organics, preaching all the time. I find myself wondering sometimes whether this is even appropriate now. And then there is the part of me that thinks - oh well if you are supposed to find biodynamics it will find you.

As a movement, if that is what biodynamics is, we have these preparations and we have a book that tells us what to do and we must not be surprised that we are looked upon with some curiosity. We must carry on using the biodynamic 'measures' and practicing what we preach if we are to reach more people. Thankfully the high quality of the produce and mean that thousands will flock to take up gardening for a the wine and the ever-increasing interest in all things organic will only serve to help us.

There are countless ways to engage with biodynamics today but there is no doubt that joining a local group is as good a way as any. As I discovered this is because it is in these groups that you are likely to encounter people who have been practicing biodynamics for some time and are generous with their knowledge,

It is also in these groups that you will experience what it is to use these extraordinary preparations and learn the best way to do this. But the truly great thing, like anything new you take up or begin, it is not until you have done it for

vourself for the first time will you properly get it.

Much of biodynamics is to do with the direct experience of working with substances that have undergone very specialist treatments to reach a condition where they can be of use to us on the garden and on the farm. This is something completely unique and there is a gravitas to that which I find immeasurably satisfying.

We are incredibly lucky to have been gifted these preparations by Steiner. They provide a window into an entire world of wonder that brings completeness to the work.

When I think about it I feel it so obvious that we should include in our gardening practice all of life, from the wonders of astronomy and deep space to the tiniest, microscopic soil particle on earth. On the basis that everything is connected and there is no separation, biodynamics really is a gift.

It is not for anyone to be told what biodynamics is, it is for us to discover for ourselves. Thankfully the biodynamic world has education at its heart. There are two excellent ways to reach qualifications in biodynamics with the online distance learning course and what used to be called an apprentice scheme but is now a work-based Ofqual-accredited Diploma.

Steiner schools are good at teaching biodynamics it too. Gardening is an important part of the curriculum. Someone must grow our food and these schools teach the children how.

When we were young we were not taught about the environment and its importance to the future of our species. Now it is a given. Nor were we taught that a life lived in the city and working indoors all day would almost certainly leave us yearning for connection with nature.

Finally this is coming home to roost. It is unlikely to living because there are fewer opportunities out there than there were. But it does mean that all things to do with ecology, organics, health and nutrition and nature generally are becoming embedded in our consciousness. This will only serve to increase awareness of biodynamics.

Tom Petherick is a writer, gardener and biodynamic inspector living near Totnes in Devon. He will be giving a Keynote lecture at the Biodynamic Conference in September. Tom also has a website for organic and biodynamic growing (as well as cooking, fermenting, foraging and much more). See: www.tomdigsthis.com

Finding harmony: How nature can teach our children

By Richard Dunne



Richard Dunne is Headteacher of a UK state primary school near London which has achieved Ofsted 'Outstanding' status, the highest performance level, for the last seven years. Despite this, he believes that the current curriculum is failing our children, both in terms of enabling them to feel a sense of connectedness with the planet or in preparing them to play their part in healing the damage that their parents' generation have caused to its life support systems.

To address this disconnection, he has introduced a new educational approach based on the Harmony principles developed by the Prince of Wales.

School days as a child were about trying to do the right thing. I learnt the basics well, but I wasn't a very confident child. As light relief from the classroom I used to escape to the local woods. There, in the streams winding through the trees, I caught minnows and sticklebacks and searched for frogs. It was captivating.

The real highlight of my year, though, was our family Easter trip to Kettlewell in the Yorkshire Dales. Being in such a beautiful and often bleak landscape – especially on a bitterly cold and frosty morning – was pure heaven. I felt totally alive. As a boy of 10, I found contentment and treasured every day I was there. my opinion this is the only way to teach and 25 years down the line I still see this more meaningful approach as essent to our children's well-being and development. In my first school I became involved in Roots & Shoots, a programme set up by the primatologist Dr Jane Goodall. It addresses three key themes: care and concern

Sometimes, I would walk down the lane to the local farmer's stone cottage and wait for him to set out on his early morning rounds checking on newly born lambs or attending to ewes in distress. Standing in the driving rain, watching as the steam of a newborn lamb rose up from the grass and its mother licked it to life, was one of the most life affirming moments I have ever experienced.

This passion for nature has never left me and I am continually reminded that we can only expect our young people to love nature if they have opportunities to experience its transformative effect. Most of us who feel a deep connection to the natural world can link it back to one or more powerful experiences in our childhood. It is one of the reasons I get so frustrated when people talk about classroom learning, as if that is the only place you can learn.

There were other experiences that had a profound effect on my vision of education. In my early 20s I worked at one of Mother Teresa's homes, Prem Dan, in Kolkata. Spending time in one of the world's most poverty stricken cities, where many people live on the streets or alongside the railway line, was a real eye-opener. It was incredibly humbling to work in a home for the most vulnerable outcasts, young and old. Each morning I would feed and wash and shave an old man as helpless as a young child. It put life in perspective in an increasingly competitive and self-centred world. That sense of service, of caring for and looking after those in need, became central to my ethos of how to live. In my role as headteacher at Ashley CofE Primary School, I try to impart a consistent message of the need to cherish, to nurture and to love.

I trained to be a primary school teacher because children have such a passion for learning, discovery, play and fun – surely the best ingredients for life. I also like the way in which the primary school curriculum can be joined together through interconnected topics or enquiries of learning. In my opinion this is the only way to teach and 25 years down the line I still see this more meaningful approach as essential to our children's well-being and development.

In my first school I became involved in Roots & Shoots, a programme set up by the primatologist Dr Jane Goodall. It addresses three key themes: care and concern for animals; care and concern for the human community; and care and concern for the environment. It is usually run as an extra-curricular club and its message is clear: when we are informed and empowered, we can make a difference. It resonated with me strongly.

This desire to shift practices so that sustainability and environmental awareness threaded through all forms of learning was further reinforced when I met polar explorer Robert Swan and was invited to help him set up an education base in Antarctica.

Antarctica is the last true wilderness on Earth. It is the coldest, driest, windiest place imaginable – an ice continent. Every winter when the ocean around it freezes, it doubles in size. Setting up an education base run on renewable energy

in such a hostile environment was no easy task, but the message was clear. If we can establish such a place here in Antarctica, we can do it anywhere. It was a challenge to us all to move away from our reliance on fossil fuel energy and find a cleaner, more sustainable means of operating.

The Antarctic peninsula has experienced some of the most extreme changes in climate in recent times. In the past 50 years the temperature there has risen nearly 3°C and its melting icebergs each spring and summer are the silent messengers, reminding us that if temperatures continue to rise, the consequences will be severe.

On our last evening there we anchored in one of the peninsula's bays. I walked up to the bow of the ship, climbed the steps to the look-out and gazed out into the silence. It was an eerily still night and I was increasingly aware of the wall of ice surrounding me. I was struck by one thought above all: if we are to create a sustainable future for our children and grandchildren, we must learn from nature's principles and practices. Nature teaches us never to create waste. It teaches us not to pollute. It teaches us how to be well, and how to create never-ending cycles and sustainable systems. If this part of the world is changing so rapidly and the primary reason is human activity, then we must change what we do and do it fast.

So, in my school, a revolution has begun. Sustainability, so often a peripheral theme in education, has been put at the centre of all that the children learn, be it monitoring and setting targets for our energy and water conservation projects, growing organic food, becoming beekeepers, sowing wildflower seeds, harvesting, preparing and serving seasonal soups to grandparents, or overseeing the management of closed loop recycling systems. Maths, Science, English writing tasks and Art and Design projects are all linked into this

approach and, not surprisingly, the children love to learn this way. Ofsted like it, too. For nearly nine years we have been an 'Outstanding' school.

Most importantly, though, it is the leadership of the children that shines through what they do. They are setting the agenda for how we can improve our sustainability practices. They are realising that they can indeed be the change they want to see. The learning journey is based on a questioning, enquiring approach that asks quite simply 'What do you think?' and 'What can you do?'

The final element to this story so far is HRH The Prince of Wales' book Harmony (2010). It is a compelling read – so much so that I wrote to him to say how much I had enjoyed it, and also to say that the world of education was not hearing what the principles of Harmony were telling us. The book charts the history of civilisations, cultures and religions since Ancient Egyptian times and maps how they had always understood the need to live in harmony with the natural world. Since the Industrial Revolution, however, we have become increasingly disconnected from nature's systems. We are damaging and degrading the natural environment like never before.

Sustainability is often about fixing problems – reducing the amount of pollution we create, increasing our recycling, protecting the rainforest. But Harmony reminds us that as we learn to understand nature's universal and eternal principles and align them to the way we work and live, we naturally create our own harmonious and sustainable systems.

The Harmony principles are now the guiding principles in my school. Each week the children learn about the geometry of nature and then explore their wider learning in the context of the Harmony principles. The principles give



All pictures courtesy of Sustainable Food Trust



the children a clearer understanding of the world; as a result, the way they want to live is shifting to a new, better and more sustainable place.

There is now overwhelming evidence that humanity is living beyond its means, consuming and polluting in ways that are exhausting and degrading the natural world and impacting on the lives of the most vulnerable.

It is quite clear that business as usual is not an option. Indeed, if we are to take the challenges we face seriously, we must develop fundamentally different practices. Only by rethinking how we live in relationship with the world, will we heal and restore Nature, and in turn ourselves. It is a big and extremely urgent task.

There are calls from many, most notably HRH The Prince of Wales and more recently His Holiness The Pope in his Encyclical Letter, to find more enlightened ways of living, to consume, waste and pollute less and to protect, nurture and share more. With the global population rising dramatically, we all need to develop conservation conscious mindsets and collectively create and implement better, more sustainable practices in how we live on the earth.

This has far reaching implications for how we educate our young people and what kind of opportunities we give them to engage meaningfully in the issues of our time. The aim in this learning process is that they start to realise their role in finding and leading on the solutions to the challenges we face. Underpinning this approach are the values of care and compassion, of respect and responsibility, of service.

So where are the role models for this work? In deepening young people's understanding of the sort of practices we need to develop to lead us to a more sustainable future, Nature's principles of Harmony are a good place to start. In his book Harmony: A new way of looking at our world (2010), HRH The Prince of Wales highlights seven key principles.

THE PRINCIPLE OF GEOMETRY – Nature has a geometry

On a macro and micro scale Nature has a geometry. We see Nature's geometric patterns and forms all around us all the time and they remind us that the natural world has an order, a rhythm and a symmetry to it that creates balance and harmony. The starting point for this geometry is the circle. When we see the geometry of Nature, we begin to understand everything in a different way.

From an education perspective, when we look at the world through its geometry and realise that its patterns and symmetries are also in us, as much as they are around us, we learn to appreciate that Nature has the most incredible structure to it. There are many ways in which we can weave this understanding into our learning, linking subjects such as Maths, Art and Science together, for example when we use circles to create the form of a six petalled flower. Educating our young people in this way helps them to make sense of their world and themselves because they start to see that the patterns in Nature around them are in them, too. It gives greater purpose to what they do as they are learning to appreciate how life works.

THE PRINCIPLE OF INTERDEPENDENCE – Everything is connected

Nature's systems are wholly interdependent and interconnected – nothing is separate. Each element within an ecosystem has a value and a role to play. When certain elements within the system are lost or in any way degraded, the system is weaker and poorer for it.

This understanding of interconnection is important for education. How can we join our learning together more meaningfully, linking subjects to projects or themes and giving greater flow to the learning, rather than teaching in piecemeal, disjointed ways? How might we engage more fully with our communities, building relationships with those who could enrich our learning and with whom we can develop a stronger sense of togetherness.

THE PRINCIPLE OF THE CYCLE -

Nature depends upon cycles that limit

Nature works in circles and cycles – life cycles, seasonal cycles, carbon cycles, water cycles – it is not linear. Nothing is wasted. Everything feeds back into the cycle to regenerate and renew it. Just as importantly, whilst there are times of fruitful abundance in Nature, there are also times when things die back and decay, creating a limit to what is produced and consumed. Growth is not endless.

As we learn from Nature's cycles, how might we create better, more cyclical systems in our schools and organisations? How can we consume less, waste less or not at all, and understand the importance of limit in the way we live and act? In our throw-away culture, can we find better ways to close the loop on our practices?

THE PRINCIPLE OF DIVERSITY -

There is strength in diversity

Nature's great strength is in its diversity. We see this diversity in the rich variety of plant and animal species, in the myriad forms of a leaf or wildflower or fruit. And we see it in our own uniqueness and difference. This rich diversity ensures that Nature is resilient, too. Biodiversity in the natural world is something to treasure and preserve.

We often create a monoculture of learning in our schools with young people all learning the same thing in

the same way. Yet if we provide the right framework for the learning and apply the appropriate skills, there are great opportunities for our young people to respond in diverse ways to the task or project in hand. Similarly, we generally grow and consume a monoculture of foods and crops, often in ways that deplete and exhaust our soils. How can we promote and nurture diversity in what we learn, what we grow and what we eat? Most importantly, how can we cherish and celebrate the diversity that exists in Nature and in one another?

THE PRINCIPLE OF HEALTH AND WELL-BEING – Life needs to be healthy

The essence of Nature is health and well-being. Consequently when we are in Nature, we also feel well. Nature rejuvenates us. It heals us. It restores our spirit. It captures our imagination. It makes us feel alive. It calms us and uplifts us. It is a constant source of inspiration. When we attune ourselves to the essence of Nature, we find our peace.

So how can we nurture health and well-being in how our young people learn and how they live? The best learning combines meaningful, engaging tasks with the development of key skills and knowledge. Much of the meaning in these tasks comes from a deep understanding of how Nature works and how we respond to what we learn. So the more we can take our young people beyond the classroom and connect them to Nature, the more their well-being is likely to be enhanced.

As part of this learning process, time for stillness and reflection, and time to be mindful, has a critical role to play in nurturing a sense of well-being.





THE PRINCIPLE OF BEAUTY – Beauty is inherent in the world

Nature's outcomes are both beautiful and functional. What we see in Nature is pleasing to the eye, but there is also great purpose to this beauty. Everything created has a function that plays an integral part in the success of the whole system. The beauty in Nature is in its patterns and shapes and symmetries, in its movements and colours, in its sounds and textures and flavours. Observing this beauty at work is fundamental to creating our own beauty in the world. This is important for young people to realise.

So how do we enable our young people to appreciate beauty and what are the beautiful outcomes we want to create with them? We know that tests and assessments are a fundamental part of learning – that won't change – but surely the outcomes of our work need to be more beautiful and have greater meaning than a test? How much can we mimic Nature's beauty in what we design and create?

THE PRINCIPLE OF ONENESS – We are Nature

The final principle of Nature is the principle of oneness. Nature teaches us that we are all one. The patterns we see around us in Nature exist in us, too. We are Nature. When we notice that the Fibonacci spiral of our curled index finger is the same shape as that of a snail shell or an unfurled fern or the galaxy's swirling spiral across the night sky, we understand this.

With this understanding, we also realise that when we damage, degrade or pollute Nature, we do it to ourselves as well because we are wholly dependent on the health and well-being of the world around us. Our starting point therefore is to value the natural world and to treat it with the greatest respect because it sustains us. With such demands on natural resources, we must educate our young people to understand how to value and respect these resources and live within the carrying capacity of the world.

All these Principles form an integral whole, reinforcing how important it is to create joined up, cohesive learning with meaningful outcomes that help young people to find well-being and purpose in their own work and lives. This is not an ideal. It is based on a carefully planned and delivered curriculum that sees learning in a much broader context than classroom based, teacher taught lessons. It sets learning in real life and gives young people a lead role in creating the vision and the practices that will take us to a more harmonious, more sustainable future.

There is no other way to go.



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Changes, challenges and collaboration; forming a communityowned seed company

work in March, in the 'small' glasshouse. Soil from all the glasshouses has been tested for pesticide residues, and none were found.

Open pollinated seed is a vital component of biodynamic farming, and all forms of sustainable agriculture. After the recent publication of a report calling for a global shift to diverse agro-ecological systems, David Price brings us exciting news about the Seed Co-operative's new home, promotes the forthcoming community share offer, and details how open pollinated seed plays a critical role in enabling this shift.

On 2 June 2016 the International Panel of Experts on Sustainable Food Systems launched a report called *From Uniformity to Diversity*; a paradigm shift from industrial agriculture to diversified agro-ecological systems. The full report, which is well worth a read, can be downloaded at www.ipes-food.org, but I draw your attention to a couple of the key messages highlighted therein:

What is required is a fundamentally different model of agriculture based on diversifying farms and farming landscapes, replacing chemical inputs, optimizing biodiversity and stimulating interactions between different species, as part of holistic strategies to build long-term fertility, healthy agro-ecosystems and secure livelihoods, i.e. 'diversified agroecological systems'.

Change is already happening. Industrial food systems are being challenged on multiple fronts, from new forms of cooperation and knowledge-creation to the development of new market relationships that bypass conventional retail circuits. The fact that change is already happening won't be a surprise to readers of Star and Furrow. As members of the Biodynamic Association you are very much a part of that change, and what we are doing through the Seed Cooperative is very much a manifestation of the new model of agriculture that the Biodynamic Association is promoting, and this report is recommending.

At the Biodynamic Association Conference in September the Seed Co-operative is launching a community share offer with the aim of generating publicity for the share offer itself but also the Seed Co-operative, the Biodynamic Association and wider movement. We are being supported in this by the Biodynamic Land Trust who are providing us with practical help and advice, and plenty of encouragement.

We hope that through publicity for the share launch we will introduce a wider audience to the work being undertaken by everyone involved in biodynamic farming, and bring in new supporters, as well as shareholders and a significant proportion of the total funding we require.

THE BIG MOVE

In February the Seed Co-operative became the proud new owners of Gosberton Bank Nursery, between Boston and Spalding in Lincolnshire. On a total site of 24 acres, we are fortunate to have approximately 2¹/₂ acres of glasshouses in four separate buildings. All glasshouses have overhead irrigation and ventilation systems. They have soil floors, though it will take some time to bring back the soil life and vitality that we need. There are also six substantial polytunnel frames all Pictures by David Price and some restoration work. The size of some of the trees growing amongst the tunnels indicates they haven't seen action for some time!

A clay-lined reservoir, which provides irrigation water, is fed from the rooves of at least 3 of the glasshouses and from land drains. The Grade 1 soils are of mainly Wisbech series, being coarse silty calcareous alluvial gley soils. Top soils are silt loam and subsoils are greyish mottled calcareous silty loam. A small proportion of the land is pepperthorpe/ Tanvats series, which is described as fine silty over clayey alluvial gley soils. The soils are stone free and a dream to grow vegetables in, so with 7 ha (17.5 acres) of cultivable land outdoors, there is masses of potential.

With buildings suitable for seed processing, machinery maintenance and storage, and a modern spacious and energy efficient house for staff accommodation and offices we have everything we need here to bring our plans to fruition. Not only does the site provide us the facilities for our own seed production and sales, plant breeding and knowledge sharing activities, it also will allow us to create a hub for processing seed produced by a network of small organic or biodynamic growers around the UK.

At present there are just two Seed Co-operative staff living and working here, myself and my partner, Kate Ayre, with great help and advice from Hans Steenbergen from Stormy Hall Seeds and others. There are opportunities for people to volunteer here too. The Seed Co-operative is now registered as WWOOF hosts. As the land was not certified organic we have entered the holding into biodynamic conversion; after 2 years we will be certified as organic, and biodynamic after 3 years. The fields have been sown with grass/clover leys, the glasshouses cultivated and sown with lucerne, once the complexities of the irrigation system had been got to grips with.

Gosberton is in an area that is dotted with seed companies, and in the heart of the UK vegetable growing area. Importantly, the relatively dry climate should make it easier to harvest seed crops in the autumn than in many other parts of the country.

OUR FUNDING CHALLENGE

The purchase is only the beginning. There is much work to do in getting the place in order, and functioning the way that we want it to do. However, our primary challenge is to raise the funds to pay off the short-term loans that will secure our tenure of the property.

We were very fortunate in 2015 to have great support from a wide range of people and organisations, in various ways. Through the generosity of donations, grants, share purchases and a legacy we raised $f_{250,000}$, plus additional sums in a short-term mortgage and loans. In total our budgets show that we need to raise a further $f_{.500,000}$ in 2016 to pay off those loans and capitalize our work, which includes the purchase of Gosberton Bank Nursery and equipment costs, plus some initial staff costs to get us to a stage where we have undertaken renovation work and completed the organic conversion process.

To be a truly community owned seed company we need people, and we need them to buy shares! One way to achieve our target is for 5,000 people to buy 100 f_{1} shares

measuring approximately 29 m x 8 m. All require new covers each; setting us up to be self-supporting in future. Over the summer we will be planning this campaign, and using our networks and social media to raise awareness of the Seed Co-operative and why our work in the UK is so important, just as countless similar organisations are undertaking similarly critical work across the world.

NOW WE NEED YOUR HELP!

As a reader of Star and Furrow you will have seen regular articles about our plans and progress. You are in at the beginning and anything you can do to help us would be much appreciated. We need funding now to pay for some of the upfront costs for the campaign and some maintenance work at Gosberton Bank Nursery.

If you can contribute through buying shares we will be very grateful. If you can share what we are doing with your family and friends and encourage them to spread the word, this too is very valuable and we thank you for it

We always welcome donations. If you would like to support us without buying shares you can do this through the Biodynamic Land Trust, a charitable Community Benefit Society. They are supporting us in buying Gosberton Bank Nursery. All donations go to the Biodynamic Land Trust who in turn use 100% of the value of the donation to buy and hold shares in the Seed Co-operative. This ensures that the donation goes to a charity ensuring that there is no possibility that it could be regarded as trading income and become taxable.

Shares will be held by the Biodynamic Land Trust for as long as the Seed Co-operative exists, as partners in our venture. If the Seed Co-operative should ever cease to exist the remaining value of shares held by the Biodynamic Land Trust could then be used for other projects that they support.

For more information, share purchases or to make donations please visit www.seedcooperative.org.uk, or write to David Price, Secretary, Seed Co-operative, Gosberton Bank Nursery, Gosberton, Spalding, PE11 4PB.

SEED SALES

The full range of Stormy Hall Seeds are available from our online Seed Shop, but currently only in the small standard packet size. Orders are now picked and distributed from Gosberton Bank Nursery. By the end of the year we hope to have added growers packs and more information to the Seed Shop, in particular giving the provenance of each type of seed available, as it is currently shown in the Stormy Hall Seeds catalogue.

As well as launching the community share offer, at the Biodynamic Association conference, we will also be launching our new Seed Catalogue and packaging under the Seed Co-operative name.

STORMY HALL SEEDS

Many of you will have been buying seed from Stormy Hall Seeds for many years. Our work is building on the 20 years spent growing there. Seed will continue to be grown at Stormy Hall Seeds, and at other Camphill Village Trust (CVT) farms, integrated into their farming and vegetable growing activities. Camphill Village Trust seed workshops will continue to undertake much of the hand-work required in sorting and cleaning seed; growing in the summer and processing during the winter provides meaningful activity for those in the care of Camphill communities.

Our joint working plans with CVT are at an advanced stage, evidenced by the kind loan of a tractor, and due to be finally agreed within weeks of the publication date of this magazine. Both organisations feel that this a very positive news and wish to share our plans now in anticipation of them coming to fruition.

The distribution and sale of seed will now be undertaken by the Seed Co-operative with Stormy Hall Seeds customers receiving catalogues direct from the Seed Co-operative in future. Through the combination of seed production at our new farm in Gosberton, seeds supplied by Camphill Village Trust and through a wider network of small biodynamic and organic growers across the country we are planing to greatly expand the volume of UK produced seed that we sell. Mechanised processing will be undertaken at Gosberton and seed passed to CVT seed workshops when hand processing is needed.

This has all been made possible by collaboration between the Biodynamic Association, Hans Steenbergen who has established and managed Stormy Hall Seeds, Camphill Village Trust and the Seed Co-operative. Stormy Hall Seeds is a trading activity of Camphill Village Trust at Botton Village in North Yorkshire, and has itself always been a collaboration between biodynamic seed growers, the Biodynamic Association's Seed Group and the Camphill Community at Botton Village. We look forward to a long and rewarding working relationship.

SHIFTING PARADIGMS

The *From Uniformity to Diversity* report highlights a host of factors that are pivotal to the paradigm shift it says is needed to avoid ecological, social and human health crises. It looks at positive and negative outcomes of industrial agriculture and diversified agro-ecological systems. After concluding that there are huge benefits in an agro-ecological approach it then explores what is keeping industrial agriculture in place, and how the balance can be shifted in favour of diversified agro-ecological systems.

Many of the approaches identified for making the change are demonstrated through biodynamics; the Seed Co-operative provides a specific example. Much of the report is dedicated to identifying how policies could be implemented to enable the transition, however I think many will question how quickly this will happen, and want to be able to take action themselves sooner.

At the heart of the Seed Co-operative is the principle of diversity. We only sell open pollinated seed because of the genetic diversity inherent within. This provides natural resilience and adaptability within the seed and is perfectly suited to the diverse agro-ecological systems described in the report. Indeed without open pollinated seed these systems will not be possible. Please support us in taking community ownership of our seed, to help secure the future of open pollinated seed in the UK, and enable the much needed shift to sustainable farming.

To find out more about the Seed Cooperative visit their website: www.seedcooperative.org.uk Part of the largest glasshouse, after cultivation. Previously the glasshouses had been used for cut flowers and the soil was cover in black woven

plastic withe bulbs in trays on top





The house is spacious with offices and accommodation. The garden was bare when we moved in, so we have a clean slate! Fruit and nut trees and a lawn are in, and vegetables on the way in late May.

The irrigation reservoir with one of our two fields (clovers cocksfoot and chicory barely visible yet) and the house beyond.

Pictures © David Price

Star & Furrow Issue 125 July 2016

Auspicious Sowing days – the Cosmic Aspect?

By Ian Bailey

Twins

EREAL

Ascending moon

I guess anyone would like to sow or plant at the most auspicious moment for the benefit of the plants they are working with. Auspicious generally means of good omen, favourable or prosperous, and who could deny their flowers and vegetables a favourable start?

In terms of auspicious conditions, there are of course any number of obvious physical/material factors such as soil friability, moisture content, warmth, weather and light. One could say such considerations amount to finding the perfect balance of the four elements, earth, water, air and fire, and we know, or perhaps we do not know, but we might wonder if those who say so are right, that within the four physical elements are certain forces. These are the so-called Etheric forces or spiritual forces, also known as Elemental Beings.

So I am moving the idea of auspicious conditions from the purely physical surroundings to the thought that within those surroundings living beings are active. If there is any question of living beings being involved, even if invisible, we obviously want them 'on side' too if things are to be truly auspicious. Likewise, not only the living spiritual forces alive in the 'furrow', but also the living spiritual forces in the 'stars'! The cosmos. My interest here is to offer a little food for thought relat-Loou Bulpuassad ing the invisible to the visible, the macrocosm to the microcosm, the Star to the Furrow. Seeing if we can identify some of the correspondences

is but a reflection of what is taking place in the Cosmos. This is that the planets influence the growth of plants and that it matters when things are planted. That that which does not appear obvious to the external eye, appears very clearly, none the less, in the more intimate relationships of life. He concludes his first lecture by acknowledging that by and large people no longer understand the more subtle influences at work in the universe.

He begins with an image of the planets beyond the Sun with Saturn, Jupiter and Mars working through the Silica forces (as described by Steiner in the Agriculture Course), warmth, the perennial nature of the plant and its 'food' quality. Whilst the inner planets, Moon, Venus & Mercury have to do with the limestone nature, water, their annual growth and reproduction. A polarity is established between silica and limestone, outer and inner, expansion and contraction, light and dark, nourishment and

> reproduction, preparations 500 and 501, expressed in the rhythms at play in the Cosmos and Earth. Many of the indications in lunar/ biodynamic planting calendars are extrapolations of these relationships in the starry world to how they manifest in the plant world. Now with that brief introduction we will set about exploring the why and wherefore of some indications familiar to Biodynamic practice.

THE MOON

I think it is a fact that the moisture content of things varies with the phases of the moon. So the chances of germination and the keeping power of harvested stuff can be affected by one's choice of moment in the full/new cycle of the Moon.

It is not the moisture content as such, but the direction of flow of sap that is determined by the Moon's movement through the constellations of the Zodiac. Given a northern hemisphere perspective we can say from the Archer to Twins the sap is drawn upward/outward in the plant. As the Moon descends from the heights of Gemini to the Archer the sap sinks, or is held back one might say. From this relationship, we can deduce that activities where we wish for a downward

between them that might indicate 'auspicious' moments for a variety of land work practices. One cannot stress enough that 'faith can move mountains'. A firm belief that things will grow well is an auspicious start! So too if there is a life force involved, a praver before we start cannot go amiss. A prayer to the angel or diva of whatever we are grow-

where we are working. It's whacky! But it's worth a go.

In the Agricultural Course of 1924, Rudolf Steiner begins by saying that everything that happens on the Earth

ing, or an offering to the genii loci, the spirit of the place

Archer

life force we should follow the descending Moon. Planting or transplanting are good examples. The plant is not trying to 'reach out', but its energy is pulled downward and so it will have better strength for taking root in the new soil. If we prune at this time the plant will bleed less, risking less infection and so on. Another such activity is the spreading of muck on the land. Thinking this through can also advise; hoeing, taking cuttings, harvesting and storing. In which direction do we want the life force active in the plant?

There is also a daily rhythm to this rising and falling of sap. In the morning it ascends, in the evening it descends mirroring the seasons of the year. So you might imagine the force of a descending Moon, after midday in the autumn as ideal for spreading manure. In addition, there are many variations to maximise the benefit in between! Where we wish for a more expansive or upward life force we would choose the ascending moon period. This is regardless of the phases of the Moon. It is purely the sidereal cycle of Nater the Moon's movement. The rising and falling in the sky.

THE CONSTELLATIONS **OF THE ZODIAC**

Harry K Another aspect of the Moon in relation to the Cosmos is that we credit it with being the 'gateway' to the Earth & earth for an influence to stream in from the constellations of the Zodiac. The great paradigm shift in Biodynamics compared to say conventional agriculture is to think of living beings, Mighty Spiritual Creators, living in the direction of each of the Earth constellations of the Zodiac. An aspect of their spiritual activity is to radiate the quality of one of the four elements. My own personal understanding of how that might happen is to say that the Moon opens a gateway from each constellation for a particular element force. And that element enhances a particular aspect of plant growth (earth/root, water/leaf, air/flower and fire/fruit & seed) if, and only if, we cultivate the soil around the plant. This is significant, for when we cultivate we bring air into the soil, and air is 79% Nitrogen. Steiner has a lot to say about the Nitrogen! He describes it as the 'bearer of sensation'. "Nitrogen 'knows' very well indeed what comes from the stars and works itself out in the life of plants. Nitrogen is the "sensitive mediator" from which I understand that this Nitrogen mediates the element quality into the soil and into the plant. Hence as the Moon moves in front of each constellation we have 'root days' 'leaf days' 'flower days' & 'fruit/seed days'. An auspicious opportunity to use Nitrogen in a way that NPK totally lacks!

We use these days especially for sowing seeds. In the moment of chaos when a seed is sown, so Nitrogen implants

an element quality in the plant and for the life of that plant either its root, leaf, flower or fruiting quality is enhanced and emphasised. The result in terms of crop production is hopefully clear? This is not so much about quantity as quality - an enhanced quality.

THE PLANETS

Nater

The Moon is somewhat elliptical in its orbit of the Earth and is sometimes further away than others are. This is a cycle of 27 days 13 hours 18 minutes and 33.2 seconds . . . roughly! At Apogee (furthest away) there is an added light/ air influence, while at Perigee (nearest) we have something more like the effect of an eclipse.

All the planets have this rhythm, each in their own timespan of course, and there is also Air/Light

an as-

4 armth

Flower days

Fruit/seed days

Marmth

Leaf days

Fruit days

Root days





cending and a descending node as each one passes across the path of the Sun through the Zodiac. The hours around each of these moments and also Perigee and any eclipse (solar/ lunar) or occultation (passing of one planet directly in front of another) all have the characteristic of something like a life force being blocked, thwarted or confused. Consequently, difficulty and or confusion can be expected in the life of a plant around that time. This is thus not an auspicious moment to sow anything. In the Maria Thun's Sowing and Planting Calendar, these have become known as 'off days'. The specific reference is to sowing and what might occur in that magic moment of chaos when the future of a plant is formed. Results (Thun, 2003), have shown that plants do not form well at these moments so they are best avoided for sowing. We may choose to extend that and not cultivate either if we can avoid it.

There are a number of other significant angles arising between planets in the course of the Moon's journey modifying the basic rhythms above. The Moon Saturn opposition is an interesting one. I believe Peter Proctor was a pioneer of exploring the possibilities of this auspicious moment. The Moon is our nearest friend in the solar family and Saturn the furthest away (of the classical visible to the naked eye planets, that is). According to Steiner in lecture 1 of the Agriculture Course, Moon is connected with water and Saturn to warmth. Thus, all the polarities mentioned above and by Steiner in his first lecture of the Agricultural Course have



the capacity to come alive at this moment. Monty Waldin in his fantastic 'Biodynamic Gardening' book describes this as 'nature's balancing act'. "The moon's watery influence on fertility, germination & yield is balanced by Saturn's warmth power, which gives plants the right form, structure, ripeness, flavour & capacity to age." The day of opposition and the two days leading up to it are auspicious for lots of garden activities such as sowing crops, digging, planting, and spraying both Horn Manure 500 and Horn Silica 501 sprays.

It is true that the results of these cosmic influences can be missed in the rush of our daily lives nowadays. Good and bad days, variations of yield and quality vary so wildly that it can seem almost impossible to track back to what might have been causes and initiators for what has happened in our garden or on our farm. These can seem like very abstract clues pointing us towards auspicious moments, and proving them an equal challenge. Experimenting, comparing and recording results are the only hope if we wish to persuade anyone of the influence of the Star upon the Furrow.

However, the really truly auspicious thing about all this is the opportunity it presents to us to appreciate the living intelligence at work all around us! And the festivals of the year are the auspicious moments for that.

I come back to the elemental beings. In the Cosmos, according to Steiner, the Spirits of the Rotation of Time are at work. Every turn of day to night, the changing of the seasons, every phase of the Moon, every orbit of every planet, and the constellations of the Zodiac are all the work of living spiritual beings. On the Earth, the beings of earth, water air, fire, and the spirits of place that live in and around our plants are forever creating auspicious moments for us in our work.

It helps if we can develop the faculties to embrace these beings as co-workers in our Biodynamic work. The book by Susan Raven 'Nature Spirits – the Remembrance' is a wonderful guide. She quotes, and I will end by quoting Adam Bittleston 'we who give the elementals so many hard tasks can contribute greatly to their lives if we share in the right way in the breathing of the earth, by celebrating the festivals of the year. . When the elementals see this coming about, they can recognise with joy that people are beginning to share in some of their tasks and do not only hinder them. And the creative works of people will take their harmonious place among all living things on Earth.'

Auspicious!

Further reading

The Agricultural Course – Rudolf Steiner Sowing and Planting Calendar - Maria Thun Results from the Biodynamic Sowing and Planting Calendar – Maria Thun Biodynamic Gardening - Monty Waldin www.considera.org – Mark Moodie World ether, Elemental beings, Kingdoms of Nature – Ernst Hagemann Nature Spirits – the Remembrance – Susan Raven

Great Oaks from Acorns Grow? Taking Stock of the Biodynamic Land Trust

By Martin Large

As Mark Twain once said, "The trouble with land, they are not making it any more!" In Twain's time, the land hunger of frontier US settlers had long since turned land into a commodity to be bought and sold on the market, and dispossessed Native Americans of 'their' customary land. Rudolf Steiner, however, saw land as a commons, as a right, and advocated that every student be taught that land is not a commodity.

The community land trust movement aims to educate the 'land literacy' that Steiner sought, and by means of the civil society led trusteeship of land, capture enduring land benefits for communities. This means affordable farm land access for farmers, affordable housing, wildlife access and open space for example. Our work in the UK has led to the founding of over 175 community land trusts and several farmland trusts, including Fordhall Farm, the Soil Association Land Trust and the Biodynamic Land Trust.

The BDLT, like many good things in life, came as a surprise, as I had moved on from my community land trust work. Through Jessica Standing at the BDA, I was invited in 2010 to do some consultancy work by a biodynamic small farmer. On describing my farm trust work, this farmer-much to my astonishment and appreciation – made a generous donation specifically for securing biodynamic land. "Why don't you now set up a farm land trust for the biodynamic movement?" was the generous invitation.

THE BDLT STORY SO FAR...

So, we founded the BDLT in November 2011 with Timothy Brink, then the CEO of the BDA, Sebastian Parsons the BDA chair and Gabriel Kaye from BD Certification, so as to establish the BDLT as part of the BDA ecosystem. Today, the BDLT holds farmland in trust for Tablehurst Farm in Sussex (38 acres), Huxhams Cross Farm at Dartington (36), Noltlands Farm in Orkney (50) and Oakbrook Farm at Stroud (41). Several farms have benefited from consultancy, for example the BDLT gave technical assistance, facilitation and support to the Parsons family, then as an anchor investor for setting up Stockwood Community Benefit Society to secure the future of Rush Farm.

The BDLT is a charitable, co-operative community benefit society which members join by investing in withdrawable shares. It is a sister body to the BDA which, as a custodian trustee, nominates a director, currently Chris Stockdale. The BDLT is fortunate to have an excellent Board, competent staff team and over 375 members. The purpose is to secure and protect biodynamic farm land for farmers and communities, guided by the co-op values of self-help, self-responsibility, democracy, equality, equity and solidarity. Members believe in the ethical values of honesty, openness, social responsibility and caring for others. The co-operative principles are guidelines by which our values are put into practice and comprise: voluntary and open membership, democratic member control, economic participation, autonomy, education, co-operation among cooperatives and concern for the wider community.

TAKING STOCK AFTER FOUR YEARS AND CURRENT CHALLENGES

My retirement as the pioneer founding director in October 2015 offers the opportunity to evaluate, rethink, build on strengths, consolidate, run the BDLT viably on a $f_{24,000}$ investment income and build the Trust viably for the long term future, in association with the BDA.

What are some of opportunities and challenges? Firstly, there are potential farm bequests and families wanting to secure their biodynamic farm's future. One such farmer, who has named the BDLT in their will, sensibly asked, 'How viable is the BDLT for protect this farm long term?' People investing in the BDLT also ask this question, and judge effectiveness by low running costs. A 'Martian up a flagpole' might ask, 'The BDLT costs a lot to run just to steward four pieces of land? How are BDLT overheads compared, say with St Anthony's Trust that owns Tablehurst Farm, or the Soil Association Land Trust?' Members want enough of a farmland 'estate' to spread the costs of overheads but also an organisation which is resilient enough to steward land securely for a long time, with access to relevant expertise.

Secondly, farmland prices have doubled in 5 years. There is a speculative land bubble as land yields more than gold currently. From 1994-2004 land prices grew by 41%. Since 2005, the price of prime arable land has gone up fourfold. Buying land at speculative prices bearing no relation to agricultural productivity is tough, and some say makes little farm business sense. Consequently, farm purchases may only be possible now in exceptional circumstances as with Oakbrook Farm at Stroud. There was a good farmer, Stroud Community Agriculture, with young farmers needing land, space for a home for the BDLT on the land to save office costs and build credibility as not just 'townies', a supportive local community, with BDLT reserves to bridge the finance gap. We could act quickly, with a complex community share offer launched within three weeks of the land being put up for sale. (Note: An extra challenge is the very high price of farm houses, which is why the BDLT has only been able to buy land into trust, not housing.)

Thirdly, there is now strong community shares, P2P and crowdfunding competition. This challenges the BDLT's ability to fundraise. When 'our' pioneering Fordhall Farm community buy out raised over £800,000 from over 8000 members investing, that was the only successful community share offer in 2004-5. Community shares for farmland at zero interest payable compares negatively with the now several thousand Community Benefit Societies raising community share offers which pay interest, such as renewable energy co-ops such as Ecodynamic which can also get significant tax relief for investors.

For example, in the UK biodynamic world, Stockwood Community Benefit Society has to date raised at least £450,000 since September 2015-aiming to raise £700,000. It can pay 5% because of a rental income stream from the farm business park. In comparison, over the same time period, the BDLT has raised only £36,500 community zero interest shares out of the £150,000 needed for Huxham's Cross Farm land and infrastructure. The figures speak for themselves. At the same time, the incredibly generous members of the biodynamic movement also consider carefully what other projects than BDLT land to invest into or donate to, such as training young farmers, bees, BDA work and research.

ACHIEVEMENTS AND LEARNING

If these are some of the challenges, what of the achievements and learning? Firstly, one of my most moving learnings was the impact of good biodynamic soil. When we handed round a bowl of Huxhams Cross' soil which was degraded by years of agribusiness, together with some biodynamic soil, people were powerfully struck by the teeming goodness, the health of the BD soil. Secondly, build trust in the Trust and value members. We have built a co-op of over 375 members around four farms. But, what benefits do members want and value? How do they want to be involved e.g. on expansion or not? Thirdly, how to link up with other land trusts? Though remarkable organisations such as the National Trust, have successfully shown the way with over three million members and over 1000 farms, thanks for example to far sighted farm donors such as Beatrix Potter, charitable community farm land trusteeship is still relatively unknown as an option. Whereas every county has a wildlife trust, there are not vet county farm trusts, for example to replace perhaps the county council farm estates. Though beyond the limited resources of the BDLT, there is work here to link up with other 'real farming' organisations for some kind of 'national farm trust' or county farm trusts for farmers to access land. Other learning included:

Motivated, entrepreneurial, competent BD farmers with a successful farm business track record attract community investment, as with Marina O Connell at Huxham's and SCA at Oakbrook.

Each farm project is potentially complex and may need a range of sometimes costly but hopefully pro bono or funded technical assistance such as land agency, finance, facilitation, fundraising, project management and farm business skills
 Land bequests and farm succession can take a long time. These need managing as well as dealing with the challenge of retiring farmers, if not also family members, normally needing capital /income from the land with the question of housing.

Where feasible, cross-subsidise land purchase and the farm business with housing, workspace, energy and other income streams -for example the Apricot Centre's ground-breaking USP of 'nature therapy' work with children.
 Good communications and community building is essential for building trust.

■ Keeping within the £24,000 investment and rental income hence keeping staffing and overheads lean, as the original founding donation has been invested. This is a challenge for the Board and members to be more stringent, e.g. in keeping any expansion costs within budget.

CURRENT PRIORITIES AND DESIRED FUTURE?

Currently, however the priority is to fundraise for building the Huxhams Cross Farm infrastructure, 'barn raising' for the Apricot Centre farmers, and to develop Oakbrook Farm for a starter farm and microdairy. Marina O Connell facilitated the design of these new farms from 'orphan' bare land, and the hope is that both will become biodynamic beacon farms. Oakbrook Farm is important as it was born from the dream of many people, not just in Stroud Community Agriculture CSA, for farm land 'we can belong to' as Jade Bashford of SCA once said. Oakbrook also offers a home for the BDLT and other biodynamic organisations, that can cross subsidise the farm and the Trust

So, as a reader of this article, I invite you to dream, to imagine your desired vision for the future of the BDLT in say seven years time as if its happening now? My future dreaming sees the BDLT as a lean, well governed, low

overhead community benefit society with a professional land agency led part time team. There will be a competent network of younger farmers with up to productive farms in trust and 1000 informed members. The BDLT is a learning organisation that works collaboratively with 'its' farmers, and the farmers are also co-operating and learning with each other. Bequests and land gifts will have helped grow the farm estate. Core income from leases, investments and member subscriptions will cover expenditure on running costs, so the BDLT lives within its means and is a credible land steward. The BDLT is an established member of the real farming movement, changing values around farm tenures, healing our relationship with land through education and the arts. The biodynamic farms will be green oases, enabling sustainable livelihoods for farmers, growing good food, enriching biodiversity, transforming the agricultural landscape, and be biodynamic beacons for training, research and community connection.

Marina O'Connell writes, 'Working in partnership with the BDLT has been of huge benefit to the Apricot team. I hope that we have also contributed to the capacity of the BDLT with our farm design and people skills and connecting with other sustainable farming groups. I hope that we can continue to do this, building bridges with other forms of sustainable farming to build skills and knowledge to create much needed farms of the future'.

Lastly, having retired as the executive director in October 2015, I would like to thank all members for investing in the BDLT, our original founding donor, Tim Brink as chair, the Board including Robin Evans (now resigned), Ella Hashemi, Rachel Harries, Chris Stockdale, Gabriel Kaye and Tom Brenan for helping cofound the BDLT and wish the new executive lead, Sebastian Parsons, well. And my blessing for the Biodynamic Land Trust is that, 'May great oaks from little acorns grow, and may land become a community to mhich we belong, that we treat with love and respect.'

Martin Large

Facilitator, social business and land trust enabler, academic, publisher and lecturer. Author of Social Ecology (1981), Futures that Work (2002), Common Wealth for a more free, equal, mutual and sustainable society (2010) and (with Pat Conaty) Commons Sense: Capturing Value for 21st Century Garden Cities (2013)



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Huxhams Cross Farm

By Sebastian Parsons



Marina O'Connell and Bob Meyhew at Huxhams Cross Farm 2016 The Biodynamic Land Trust hopes the pieces of land it has recently brought into biodynamic production will underpin the blossoming of the biodynamic movement as a whole. For example, in the Huxhams Cross Farm project, we aim to connect to and further the fundamental hopes, desires and principles of our movement for the benefit of all.

Huxhams Cross Farm near Totnes (the home town of the Transition Town network) is a part of the Dartington Hall Estate, a short walk from Schumacher College and very near to Riverford Organics and not far from the Embercombe project. This is an area from which alternative thinking emerges and goes on to successfully change the world for the better. It is also interesting that the farm is also only a stone's throw from the South Devon Steiner School and that there is an international conference at Dartington planned for 2017 to celebrate Rudolf Steiner's ideas of economic 3-folding and his lectures given at Torquay.

The team carrying the Huxhams Cross project is Marina O'Connel, Bob Mehew and Mark O'Connel. Building Huxhams Cross Farm will be third time that Marina has been involved in creating a farm from scratch – the first time was also at Dartington, and the second was her

Apricot Centre in Essex. I have visited the Apricot Centre where hundreds of children and adults come throughout the year to learn about nature and growing. There is a vibrancy to the place, it fizzes with the energy of life, and as you can see from the photographs, she really did create it from scratch. However, these things do not happen over-night, and the team has a development timeline that stretches right through to 2018.

When Martin Large (of the Biodynamic Land Trust) first approached Marina about Huxhams Cross (then called the Week Land), Marina wasn't sure, and gave the matter a lot of thought, mulling it over and over. Finally, one morning, she reached the point of deciding that, on balance, it probably wasn't for her. Just at that moment, her friend, permaculture trainee and senior local government officer, Bob Mehew came in, sat down, and said "Marina, have you got a project, a really big one, because I want to do something new and completely different?. Well that was that; she revealed that funnily enough, and as fate would have it, there was a project, in Devon, and would he be interested...?

Marina has a well-established practice teaching permaculture and biodynamic methods to growers around the country. This work began with her farm at Dartington and has built on these beginnings through the years since



then. A seasoned professional fruit grower, Marina is practical and clear, and has helped many people find their way into growing. I was particularly interested to ask her about permaculture as I had often heard of it, but never actually learnt what it is. I'm sure that there are many perspectives on this question, but Marina explained to me that it isn't actually a method of growing, more a set of principles for the farm. He has been building a team of volunteers and I will effective designing and maintaining of productive plots. In particular, a design is called for that creates a "closed loop" self-sustaining plot, and it is this which makes permaculture so popular with adherents of a sustainable life style. Some of the famous "forest garden" permaculture designs give a particular hue to the term, but, in fact, biodynamic growing, which also aims to be self-sufficient and self-sustaining, is absolutely aligned with the permaculture principles.

I was told that a particularly famous permaculture designed garden is Martin Crawford's agro-forestry garden, and that this is also located at Dartington, and so it was that I was able to close my own loop of understanding, worked out why Huxhams Cross Farm is so important, and realised what a wonderful opportunity it offers. The Huxhams Cross Farm and new Apricot Centre are located on a national hotspot of transformative thinking, and is a biodynamic project, emerging, with the help of the community around it, to

become a living embodiment of what we are working for.

Whilst Marina is the fruit grower at Huxhams Cross, Bob is bringing his 20 years of project management experience to the farm, vital skills needed in coordinating the development of the farm at this early stage, where there is infrastructure to be built for the future operation of the be sharing their stories and all about the building of the barn and centre in the future. I've also had some interesting conversations with the 3rd member of the team, Mark O'Connell, and look forward to also sharing how his connections and skills are contributing to this story.

For more information see: http://www.apricotcentre.co.uk

Sebastian Parsons is the Director of the Biodynamic Land Trust

See www.biodynamiclandtrust.org.uk for more information and how to join in and help this project succeed, email info@biodynamiclandtrust.org.uk or ring 01453 673233

From Koberwitz to the CAP-Biodiversity and Biodynamics

By Spencer Christy

In the seventh lecture of the 1924 lecture series 'Spiritual Foundations for the Renewal of Agriculture' Rudolf Steiner gave the following indication on what could be loosely termed 'biodiversity' or 'habitat' in today's language.

"The correct balance of woods, orchards, bushes, and meadows – with their natural growth of fungi – is so essential to good farming that your farm will really be more successful even if this means a slight reduction in your tillable acreage. There is no true economy in using so much of your land that all the things I have mentioned disappear. The resulting loss in quality will far outweigh the advantage of being able to cultivate a larger area at the expense of the other things. Without this kind of insight into the interconnections and interactions of nature, it is really impossible to engage in an enterprise like farming which is so closely bound up with nature." (Steiner, R., 1993).

In amongst the intensively farmed landscape that is prevalent in much of the United Kingdom, it is possible to see pockets of this insight living out in reality. In fact, with the latest reforms to the Common Agricultural Policy (CAP) further requirements have been placed on industrial farms over fifteen hectares to include a minimum of five percent of their land in 'Ecological Focus Areas' (EFA). These EFAs include buffer strips around fields, fallow land, cover or catch crops, hedges and nitrogen fixing crops and without these areas the landowners will not receive the full Basic Payment (BPS) from the European Union. This is an interesting advance for the CAP as, over the last nine years, the payments to farmers have been shifted from production subsidies – remember the butter-mountains and the wine lakes? – to payments based solely on the area of land with a variety of cross compliance measures aimed at basic environmental protection.

This important change in the use of public money has gone somewhat unnoticed in the recent referendum debate in the UK with politicians still referring to these payments as subsidies when a more accurate description would be environmental land management payments. Currently the environmental requirements are set pretty low but now the principle is established it enables further bolstering of environmental measures such as those mentioned above.

This is all well and good but for me, as a Biodynamic farmer and SSSI habitat manager claiming the BPS, it is more interesting that the new Greening Rules which include the EFAs do not apply to holdings that are certified organic which all Demeter certified farms are. In practical terms this means we do not have to change our land management system at all to receive the public funds from the CAP. This is a vital development for organic and biodynamic farms as it has, at last, confirmed in European agricultural policy that inherent in organic and biodynamic farming systems are environmental outputs sufficient to meet the current European wide demands for biodiversity, environmental protection and habitat protection.

It is easy so say we have already known this for many years and indeed there exists a plethora of scientific papers that confirm this relationship – Hole, D.G. (2005), Bengtsson, J. et al. (2005), Smith, J. et al. (2007) and Mondelaers, K et al. (2009) to name but four – but it has taken painstaking lobbying, much research and good organic and biodynamic farming practices over many decades to enable this encouraging change in policy. Indeed, the positive news



continues as in the UK, Natural England are now paying for organic land management beyond the old conversion payments into organic production of cereals, horticulture and fruits through the new Higher Tier Countryside Stewardship Scheme. These payments could be called production subsidies which may give a clue as to the future of CAP funding.

On our farm in Essex, we are fully engaged in a wide range of practical work aimed at maintaining and enhancing all the aspects mentioned in the Agriculture course. We are fortunate in that our farm has legal conservation designations which open the door to funding to support this work and the biodynamic method fits perfectly into these environmental objectives. The requirement for livestock, especially cattle, was key for us, as once the cattle arrived next came the insects and finally the birds. Such a simple loop and beautiful example of the 'interconnections and interactions of nature' Steiner spoke of in the Agriculture course. In addition, the cattle often most suited to grazing high conservation grade land are the rare breeds with their slightly lighter body weights and the intrinsic ability to thrive on non-industrial grassland. Also, many of the rare breeds still have their horns we have Shetland cattle but the Red Poll, Short Horn and the mighty Long Horn breeds are other examples of beasts with spectacular horns.

Our experience here also shows a clear relationship between the activity of the insects and the use of the biodynamic field sprays. This is a subtle effect and one that probably could be quantified but regardless, it undoubtedly exists – one only needs to apply the preps around a bee hive to get a feel for the relationship. In addition, the Agriculture Course gives clear evidence of the need for wet areas, boggy areas, trees and hedges way beyond the physical realm. The subtle interplay between the astral 'collecting' forces of the plants and trees and the distribution of these forces by the insects and birds is of continual wonder to me.

Naturally, this all leads back into the overriding principle of a self-sustaining farm organism with a wide variety of habitats required to offer all the kingdoms an opportunity to thrive and interact. It is therefore not surprising that ourselves and other Demeter farms have, over the years, won awards from a variety of bodies for their conservation work.

There is always a balance to be struck between 'production' and 'conservation', it is one that is unique to every holding. In my experience the biodynamic method - with the whole preparation work from production to application, working with the constellations and the planets and meditating on the insights from Rudolf Steiner - can enable the famer to more closely understand what the individual organism they are working on is asking of them in relation to this balance. The depth of the connection with nature it allows enables a sensitivity to develop within the farmer so they know, maybe only for a fleeting moment, that a balance has been reached. Then something changes and off the process goes again towards rediscovering this balance, such is the wonder of farming.

Spencer Christy is a farmer at Lauriston Farm in Essex. or more details see: www.lauristonfarm.co.uk

References

Bengtsson, J. et al. (2005). The effects of organic agriculture on biodiversity and abundance: a meta-analysis. Journal of Applied Ecology 42, 261-269. Hole, D.G. (2005). Does organic farming benefit biodiversity? Biological Conservation 122, 113-130

Mondelaers, K. et al. (2009). A meta-analysis of the differences in environmental impacts between organic and conventional farming. British Food Jour-nal III (10), 1098-1119.

Smith, J. et al. (2007). Organic farming and biodiversity: A review of the literature. Organic Centre Wales, Aberystwyth

Steiner, R. (1993) "Spiritual Foundations for the Renewal of Agriculture", Bio-Dynamic Farming and Gardening Association Inc. Rural Payments Agency (2015) "The Basic Payment Scheme in England 2015",

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In the following article Jonathan Powell addresses the subject of bees as we hardly know them. Wild bees living in trees. Of course, all bees are wild. But a few hundred years of ever more refined honeybee "management" and environmental degradation have taken their toll on the creature. Deprived of nearly all ways of expressing their innate preferences and instincts, the bees are losing their resilience.

Contrary to what beekeeping orthodoxy – and this includes purveyors of 'treatments', bee saunas, bee gyms and any other such contraptions – would purport, wild bees exist in our country, and are faring well. Most of them live in trees, lovingly observed over years by warm-hearted beekeepers who feel happy for the bees to have 'escaped', others live in hives, lovingly observed by human beings, former beekeepers mostly, who have connected with them and feel enriched by their company. But just as there are not enough pure and unadulterated blossoms for the bees to feed on, there are not enough trees allowed to get old enough to develop natural cavities for bees to live in. Nor are there enough beekeepers allowing the species to propagate freely. That is our world now, and it is not bee-friendly. The resurgence of interest in the ancient craft of tree beekeeping, of creating new habitat, guarding what is left and allowing the honeybee to live in freedom, inspires hope. Heidi Herrmann

Learning from Wild Bees and Tree Beekeeping

By Jonathan Powell

What if there was a completely different approach to beekeeping? Where the beekeeper makes a hive that suits the bees, or they do not come. A system where the beekeeper is required to give up control and complexity, and evolution is once again determined by the bees and nature.

I would like to tell you why tree hives inspire me, particularly so in the context of the environmental challenges that bees face in the 21st century.

Besides describing the history, dimensions and methods of tree beekeeping I will make mention of the transformative effects my engagement with tree hives has had on me, as a beekeeper, as a human being. It would be a disservice to the bees and their message for me to remain silent on this. The bees show me that too often I take when I should wait to receive. I can jump to quick solutions and miss the longer paths to better understanding, but this understanding only comes when I am open to the idea that I might be wrong and ready to receive. Therefore, if what you read here simply gives you a little more intellectual knowledge about tree beekeeping, or furnishes you with more ideas for the next beekeeping experiment or bee gadget, I will have failed. We live in a world saturated with knowledge and technology but I fear it is lacking in wisdom. Having kept bees as a child in the 1970s, I have seen in the short space of 40 years the decline of forage, the drop in queen fertility, and the vitality of bees being eroded. This has deeply affected me and prepared the ground for my present commitment to a form of beekeeping which really does give me a sense of cautious optimism for the future of the bees.

The evolutionary path of the bee is a story of imperceptible change over millions of years, where bees slowly evolved to fit each locality – or devolved to end broken relationships with the environment. Then, in a mere 150 years, a blink in time, under the stewardship of a new master, "modern beekeeping" together with the pressures of modern agriculture, the old order that shaped bees was swept away. We have taken control, but are we smarter? The bees have always selected on the basis of survival of the fittest, whilst we select on simpler parameters like honey yield and temperament. Add to that swarm suppression, bee importation, artificial splits, prophylactic use of antibiotics, sugar feeding and migration, and what emerges that we have woven a tangled and confused evolutionary path that has no direction for bees and is alien to their genetic history.

What if there was a completely different approach to beekeeping? Where the beekeeper makes a hive that suits the bees or they do not come. Where the density of hives is set by the bees, and there is no intervention to stimulate the hive or save it from failure. A system where the beekeeper is required to give up control and complexity, and evolution is once again determined by the bees and nature. A hive that can last a hundred years or more and cost nothing. This is not the fantasy of a dreamy idealistic beekeeper, but an old Eastern European traditional form of beekeeping called tree beekeeping, where a hive cavity is formed inside a living tree.

HISTORY OF TREE BEEKEEPING

Whilst the history of tree beekeeping does not span the millions of years of the bees' history, it can claim to be one of the oldest forms of beekeeping and one that perhaps most closely respects bees' innate preferences. Tree beekeeping can trace its roots back over 1000 years to Eastern European monks who provided the first written account of tree beekeeping in 900 CE. A Russian tomb from the 5th century was found to contain a complete set of tree beekeeping tools, and a preserved tree hive was recovered from the Older river dating to around the 10th century. In 940 King Otto I allowed tree beekeeping within the Teltowsche Heide (Grunewald forest, Berlin), but the last Zeidler (German tree beekeeper) gave up in 1550.

In the seventeenth century tree beekeeping saw its maximum development in the Polish-Lithuanian Commonwealth. In the most developed regions tree beekeepers formed communities, called 'Fratrum Mellocidarum', and members would manage registered areas of the forest called a 'bartny bór', a basic unit area of forest with 60 tree hives. They were bound by oaths, with their own laws and later some political power. A wealthy tree beekeeper could own/



Making entrance hole © | Powell

Etrance and entrance plug © J Powell

Hive-entrance © Nick Adams

lease as many as 400 hives. Unusually for the time, these organisations allowed women to inherit tree hives after the death of their father or husband. It was an important branch of the economy; profits from wax and honey could be 30 times higher than from wood. Tree hives belonged to kings, princes and cities, and tree hive keepers had a right to an inheritable timeless lease of the tree hives. In return beekeepers would pay tax in the form of hive products, wax and honey, tending meadows and, later, money. Historically, there was another advantage to the tree and bee relationship, most notably in Poland where there was legal protection and severe punishments preventing the felling of trees containing hives, and protection of the hive from robbery.

From the mid 19th century the economies of wood and honey changed. Wood became more important to fuel war and industrial development. Legal bans on tree beekeeping were imposed by the rulers of Austria, Prussia and Russia to make way for the felling of the trees. However, even after some decline, the Polish census of 1827 recorded over 70,000 tree hives. In Belarus there are still more than 800-1000 log hives in trees, but only a few tree cavities with bees. In the Polish Bielowieza National Park there are still 112 tree hive cavities, made before an 1888 ban, when the forest was declared the Russian Tsar's private property. These hives are now abandoned, their entrances are closing and they have no bees. The last Bielowieza tree beekeeper, Filimon Waszkiewicz, died in 1967.

Gradually, for the convenience of beekeepers, tree hives migrated to log hives on platforms, then to logs on the ground, and then, with the start of modern beekeeping, to thin-walled hives with frames, the "filing cabinet" style hives we know today. With modern commercial beekeeping also came sugar, antibiotics, genetic dilution, migratory beekeeping and dense apiaries.



RENAISSANCE OF TREE BEEKEEPING

The tree hive tradition in Eastern Europe was all but lost by the 1930s. Then in 2002, Dr Hartmut Jungius and Dr Przemysław (Przemek) Nawrocki of the World Wide Fund for Nature (WWF) discovered during the establishment of woodland nature reserve of 22 000 hectares, that tree beekeeping was still being practiced in the Southern Urals of Bashkortostan in Russia. Over 700 hives can be found here, of which, in an average year, 30% are naturally populated by swarms and managed by the Bashkir.

Thanks to knowledge gathered from the Bashkir together with historical information from countries such as Germany and Poland, we know how traditional tree hives are constructed, and what lengthy preparations were made for a tree destined to become host to a hive.

The majority of tree hives are created in pine trees that are typically older than 150 years; larch is another common tree, and to a lesser extent oak, fir and spruce. First, the crown of the tree is removed so that the tree grows in girth. Traditionally, after a further 70 years, the third generation of tree beekeeper made the hive. Ideally the tree needs to be at least 80 cm in diameter. The family line then managed the hive for 200–300 years.

When all of this work is carried out correctly to the traditional design (the old tree beekeepers could rely on their instinctual nature wisdom for that) the tree is not harmed; indeed, it is believed that making the cavity invigorates the tree. Part of the longevity of trees with tree hives may have to do also with the fact that bees will line any cavity they inhabit, with the powerful substance of healing propolis. Tree beekeeping must be approached with the same respect and specialist skills that the Zeidler of old applied to the craft.

Understandably, the image of a chainsaw cutting a hole in a living tree arouses complex feelings in people. Let me re-assure you: cavities intended to serve as tree hives are only cut into trees of a large diameter and consequently the ratio of the cavity entrance width to the tree circumference is less than 7%. This is no problem for the tree. Detailed examination of mature trees will show that many have natural breaks in the trunk, such as woodpecker and squirrel holes

Germany 2015 - Bavarian Course

and broken limbs from wind damage, often enlarged into sizeable cavities by the action of rot or fungus growth. In the case of the cavities provided in trees for the purpose of hosting colonies of honeybees, nearly all the wood removed from the tree is so-called "heartwood". This wood is dead, indeed a tree can thrive with its heartwood completely decayed. The height of the hive, at least 4m above the ground, the depth into the tree of 35cm and the position relative to limbs are all carefully selected to ensure that the structural integrity of the tree is not compromised. Contrast this to the traditional bee hive or even your own home where the wood is from felled trees.

In this tree hive management system, the top one third is respected and always left undisturbed for raising brood and for winter stores. If there is any spare honey it is harvested from the bottom two thirds of the hive. Typically 10–15kg is harvested in a normal year. The hives are opened just twice a year: once in spring to check if the hive is populated, and then in the autumn for the honey harvest. In this way the medicinal hive atmosphere, the integrity of brood nest scent and warmth, is guarded and maintained.

The hives are not treated for mites with acid washes or pesticides and yet remain healthy. Interestingly, many beekeepers in the West, often referred to as natural beekeepers, are similarly discovering that bees will slowly adjust to mites and diseases. They can only do so if they are left to manage themselves, i.e. rarely disturbed, their winter honey stores left intact, and overwintered on their own stores as opposed to sugar, which has been clearly shown to weaken bees' immunity¹.

Tree hives naturally populate at a density of three hives per one square kilometre; however this varies greatly depending on the weather. In good years almost all the Bashkir hives will fill with bees, but in very poor years only 10% may have bees. The low density of hives greatly reduces the problem of disease spread whilst matching forage level to bee density. By allowing the weather to test the bees, weak colonies fail and only strong colonies propagate their genetics. Tree hives being static allow bees to build longterm bonds with their local environment as well as other colonies. The role of the drones in such stable environments and the effect of long-lasting drone congregation areas remain unexplored.



CONSTRUCTION OF TREE HIVES

sizeable cavities by the action of rot or fungus growth. In the case of the cavities provided in trees for the purpose of host-ing colonies of honeybees, nearly all the wood removed from the tree is so-called "heartwood". This wood is dead, indeed a tree can thrive with its heartwood completely decayed. The height of the hive, at least 4m above the ground, the depth

Construction of a tree hive starts with a slot that forms the 'human entrance' to the hive, at 4–5 m from the ground. The slot is typically 800-900 cm long and 12 cm wide. The internal diameter of the hive is around 35 cm and has a volume of approximately 80–90 litres. This leaves thick walls of at least 5 cm to insulate the hive. A cavity is normally left open for a year to let the wood season. When the hive is occupied, the bees will gradually cover the walls with protective propolis. A slot door of similar thickness to the walls and with insulating foliage completes the hive's human entrance. The bees' entrance is located one third of the way from the top of the hive, by forming a 8cm x 8cm hole that is positioned approximately 20 cm away from the human entrance.

A carving axe is used to create a long-tailed plug that fits inside the entrance hole leaving two vertical 1cm x 8cm slots either side of the plug. The tail of the plug goes into the cavity and marks the point above which the beekeeper must never disturb the colony. Honey may be harvested below the tail of the entrance plug. Inside the cavity two sets of two spales are arranged in a cross that fit above and below the entrance plug.

Each spale is approximately 1 cm x 0.8 cm x 40 cm and pointed at the ends. The length is adjusted to be a tight fit inside the cavity with the pointed ends digging into the side walls. Spales are not necessary if the hive is not harvested for honey.

The final internal components are eight thin hardwood spikes used to fix 8 cm x 8 cm bait comb to the top of the hive. I prefer to call it 'welcome comb', as we are not trapping the bees for collection, instead we are inviting them to stay. The welcome comb is arranged to encourage the bees to build comb parallel to the door, which simplifies inspection.

The final internal components are eight thin hardwood spikes used to fix 8 cm x 8 cm bait comb to the top of the hive. Personally I prefer to call it 'welcome comb', as we are not trapping the bees for collection, instead we are inviting them to stay. The welcome comb is arranged to encourage the bees to build comb at right angles to the door opening, which simplifies inspection.

The traditional tools for hollowing out the hive include: hand forged adze, round scorp and heavy duty chisel/lever. A carving axe is used to make the internal components and this also doubles as a hive tool. More recently, tree beekeepers use chainsaws to speed up the process of making the hive and working platform. The process takes one to two days.

The final stage is to add the tree beekeeper's family mark on the tree. In Bashkir this is called a tamga, and historically in Poland, a signum (more recently it is called 'ciosno' and 'znamie'). This is cut into the bark at the base of the tree. The mark shows ownership, and was once also used for tax collecting purposes.

Should you be interested to delve deeper into the subject and perhaps even contemplate preparing a tree for

hosting a bee colony, please visit the website of the Natural Beekeeping Trust and follow the link http://naturalbeekeepingtrust.org/ebook to preview the Field Guide to Tree Beekeeping available there.

COMPARISONS BETWEEN WILD COLONIES AND MANAGED COLONIES

But just how well do tree hives match the natural preferences of bees? What would bees do if we did nothing at all? Only when we know this can we judge if our interventions are supporting them or not. For more understanding, we therefore look to the bees in the wild and how they live.

The study of bees in the wild is difficult and there are very few large traditional non-commercial forests with very mature trees. Additionally, spotting a colony high in a tree in a forest is hard, and studying one is even harder. However, there are useful studies on bees in Arnot Forest (USA) by Prof Thomas Seeley² and others which provide some possible benchmarks.

In one of his lectures in Switzerland in 2015, Professor Seeley outlined differences between how wild bees live compared with those in a typical apiary, as shown in the table below. I have included a tree beekeeping hive column and additional parameters, though I appreciate that not all of the apiary traits are common to all beekeepers.

Clearly there are many differences between tree hives in the wild and their ground based apiary cousins, but do these affect the health and vitality of the bee?

Professor Seeley firmly believes that the attributes of natural tree hives have a measurable and significant positive effect on hive health. The Arnot Forest bees he studied had adapted to the deadly varroa mite, and no signs of foul brood diseases were found in forest studies spanning 33 years. In one of Seeley's studies, inspired by forest bees, he recom-

mended apiary hives be spaced much wider: at 10m, to reduce transfer of disease.

But could more extensive tree beekeeping with its minimal inspection or the introduction of unmanaged tree hives be a problem for conventional apiaries?

Catherine Thompson's 2014 paper on "Parasite Pressures on Feral Bees" touches on this concern. However it showed established feral bee colonies apparently able to tolerate high values of deformed wing virus (DWV) that would normally lead to colony mortality [feral is used to describe likely escaped swarms from apiaries, though I prefer the term "wild" and will use that from now on]. This tolerance may be related to the work of Gideon et al [2015]³ on DWV and 'superinfection exclusion', in which they highlight honeybees, varroa and DWV reaching a stable state by natural selection.

Papers by Miller 1935⁴, Bailey 1958⁵, and Goodwin 1994⁶ all indicate that wild bees do better than managed colonies concerning disease, and the main threat to wild colonies are local dense populations of "managed" colonies. This may not be a surprise when we consider that horizontal transfer of pathogens, not seen in wild hives, is common in beekeeping. We also know that the microbiota of honey bees can be damaged for several decades by the use of antibiotics⁷ . Furthermore, it is well established that the effects of sugar on the gut of bees compromises their immune system¹.

In the UK it is likely that many conventional apiaries already exist close to wild hives; in the Andover (Wiltshire, UK) locale alone there are reportedly over 80 wild bee sites, many with strong colonies continuously inhabiting their hives over many years.

So, there is a picture emerging of wild colonies retaining vitality through normal selective pressure. Concerns that

Natural tree hive	Tree Beekeeping Hive	Common Apiary
High off the ground 4-8m, where the humidity is lower, and it is warmer in winter	4m above the ground, where the humidity is lower and it is warmer in winter	Very close to the ground
Small nest (40 ltrs median volume)	Large nest (80 ltrs volume)	Large nest (70+ ltrs volume)
Small hive opening	Small hive opening	Large ive opening
Thick hive walls covered in propolis	Thick hive walls covered in propolis	Thin wooden floor and walls. Propolis removed and floor cleaned at least annually
Queens live long on small brood comb (1m2)	Queens live long on small brood comb	Queens often replaced by beekeeper (1-2 year cycle) on large brood comb (2 m2)
Hives well spaced (1-3 hives per km2)	Hives well space (1-3 hives per km2)	Hives closely packed together
Regular annual swarming	Regular annual swarming	Swarm prevention
Brood nest not restricted and follows the bee preference (17% drones)	Brood nest not restricted and follows the bee preference	Brood nests often culled to remove or restricted to reduce drones
No chemical or antibiotic treatments	No chemical or antibiotic treatments	Regular chemical treatments for mites and common diseases
No honey harvest	Limited honey harvest	Extensive honey harvest
No opening of hive	Hive opened twice a year: Spring check and September harvest	Regular opening of hive, sometimes weekly
Bees never fed sugar	Bees never fed sugar	Bees routinely fed sugar
Hive consists of empty cavity	Spales added to support comb during harvesting	Frames for easy honey removal and transfer of combs and brood (and pathogens!) between hives
No intervention to prevent loss	No intervention to prevent loss	Intervention to prevent loss
Natural comb managed by bees	Natural Comb managed by bees	Foundation comb (often contaminated), rotation of comb, supering, queen exclusion from supers (honey harvest areas)
Static position	Static position	Sometimes migratory
Key	Same as Natural Tree Hive	Different to Natural Tree Hive

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Newly completed hive with wood pegs for securing door © J Powell

100

4





newly completed hive without insulating cover.©J Powell



Hive sealed ready for bees - with insulating cover ©J Powell



View up inside compleyted hive © J Powell



Honey and schnapps ©J Powell

Hive in Poland © Piotr

they may be potential pathogen reservoirs are not borne out by studies or anecdotal evidence. Furthermore, Gideon's and Seeley's research has shown that natural selective pressure uncompromised by treatments and alien inputs has been a positive to bee health and created an important genetic reservoir. This has worked well over millions of years, and rather than shun this natural wisdom, we would do well to embrace it by creating tree hives.

With the resilience of wild bees in mind, it is no wonder that tree beekeeping has caught the imagination of many beekeepers across Europe. The Natural Beekeeping Trust⁸, Gaiabees⁹ and Free The Bees¹⁰ promote tree hives, and new organisations such as Bractwo Bartne¹¹ and Tree Beekeeping International¹² have formed to teach tree hive making and tree beekeeping skills. Additionally, tree beekeeping is being used to protect four different races of dark bees (Northern, Augustowska, Kampinoska and Asta) in Polish forests and, in Bashkortostan, tree beekeeping is bringing additional income to the local community. In Germany, habitat forestry initiatives are attempting to increase forest biodiversity by incorporating tree beekeeping.

I believe that tree hives, which draw closely from the innate preferences of the bees in the wild, can offer new directions to apiculture. Recent hive designs, such as those by Lazutin, Somerville and Haverson¹³, have mimicked the high insulating properties of tree hives. This is supported by the work of Mitchell¹⁴. Increasing numbers of beekeepers are rejecting treatment of bees, and the practice of leaving enough honey for overwintering bees and rejecting the use of sugar is becoming more common.

For me, a narrow focus on apiculture misses the full inspiration of trees and bees.

In recent weeks I was privileged to embark on a project to bring this craft to the UK for the first time. It had been something of a dream of mine ever since I was introduced to tree beekeeping by a group of Polish Zeidlers in Switzerland some years ago. Needless to say I got many requests from people wishing to establish a tree hive on their property, so strong is the allure of this ancient craft and many people's desire to let bees be bees. But finding the right place for creating a tree hive is as difficult as finding the right tree in our much depleted environment. I had to learn to wait, to let the desire to do something rest. After a long search I finally found a wonderful tree in one of the oldest organic farms in this country. I had an immediate sense that the "right" place might be beckoning. And so it was, I am happy to say. With tremendous support from the farm team I created, a few weeks ago, Britain's first tree hive on Pertwood Farm in Wiltshire, Pertwood is an exemplary mixed farm. It was greatly affirming to meet scout bees exploring the new cavity as I was applying the finishing touches. But I have no words to describe my feelings upon hearing, whilst at work in my office, that a huge swarm of bees had taken possession of the home prepared for them only 2 days earlier. There were tears of joy! Our human connection with bees is deep, and when they respond with resounding approval to something we have made for them, with love and conviction, it is a very momentous experience. An experience that has enriched me every day since their arrival. I told the wildlife expert at Pertwood that when you put bees and trees together something magical happens. He now under-

stand this, and the bees and tree are both now in the hearts and minds of so many people.

Bees, as we all know today, have suffered from a catastrophic loss of quality non-toxic forage, variety of forage and habitat, and have been subjected to inordinate genetic damage and mechanical manipulation. To have any hope of regaining their vitality they need our support. It goes without saying that beekeeping as practised and taught today has no place in preserving what is left of the bees' integrity, let alone enhancing their vitality. Whereas the creation of tree hives, alongside the creation and nurturing of pure and varied sources of forage, strike me as an appropriate response to the needs of the bees today, especially so, if the hives are not harvested for honey. The bees need us to help restore the environments in which they unfold their existence, and they emphatically do not need our "help" with managing their hive life! My fear is that beekeepers will try and take from the wild bees and repeat exactly the same mistakes as the past (we have already seen failures in breeding from wild bees), but my hope is that we apply some humility, take a longer path to understanding and instead of taking, receive the wider message of the bees. We have a lot to learn.

Already many new extensive networks of tree hives are being established, including those in protected habitat forests, promising to provide new environments for bees, free from human intrusion and economic imperatives. These will be places to recover what has been largely lost. After more than a century of continuously taking from bees, there is a strong need to redress the balance. Interest in providing trees for bees is buoyant, and many new host trees have already been established by dedicated teams of bee guardians in Poland and Germany. The time is ripe for putting the needs of the bees first, and in that sense the revival of tree beekeeping provides a new direction.

Jonathan Powell is a Trustee of The Natural Beekeeping Trust and Founder Member of Tree Beekeeping International My thanks to Piotr Pilasiewicz of Bractwo Bartne http://bartnictwo.com/en for many of the pictures in this article.

References: | Johnson 2013:

- http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0031051
- ² Seeley: http://www.nbb.cornell.edu/seeley.shtml
- ³ Gideon 2015:
- http://www.nature.com/ismej/journal/vaop/ncurrent/full/ismej2015186a.html
- ⁴ Miller 1935: Natural comb building. Canad. Bee J. 43(8) : 216-217
- ⁵ Bailey 1958: Wild honeybees and disease. Bee World 39, 93-95
- ⁶ Goodwin 1994: Incidence of American foulbrood infections in feral honey bee colonies in New Zealand. NZ J. Zool. 21 285-287
- 7 Tian 2012: http://mbio.asm.org/content/3/6/e00377-12.full
- ⁸ Natural Beekeeping Trust: http://naturalbeekpingtrust.org/
- 9 Gaiabees http://gaiabees.com/apis-arboreal/
- 10 Free The Bees: http://freethebees.ch/
- II Bractwo Bartne Foundation: http://bartnictwo.com/en
- ¹² Tree Beekeeping International: http://tree-beekeeping.org/
- 13 Somerville & Haverson: http://beekindhives.uk/the-modified-golden-hive/
- ¹⁴ Mitchell 2015: http://dx.doi.org/10.1007/s00484-015-1057-z

Tree Beekeeping International supported courses for 2016 Details will appear on http://tree-beekeeping.org

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	Essen	2010 König October
	Paderborn	August September
	Düsseldorf	June Lecture.
Belgium	October	
Poland	Augustow	July festival, April Course
France	Normandy	September

This article first appeared in The Beekeepers Quarterly, issue 123, 2016

LETTER TO EDITOR

Wild honey bees and the Bee Gym

In his article entitled 'Varroa and the Bee Gym – helping bees to help themselves' (S&F 124, pp. 27 & 30) Stuart Roweth writes 'Since the invasion of the honeybee's number one enemy Varroa destructor, this parasite has wiped out virtually all 'wild' honeybee colonies, so beekeepers have become the guardians of honeybees and will have to safeguard their future.' Aside from the old beekeeping joke that the honeybee's No. I enemy is the beekeeper, this raises several issues, the main one being that wild honeybee colonies have not been wiped out. Much depends on how you define 'wild' honeybees and where you look for them.

A moderately authoritative report on feral/wild colonies in Britain was presented in Catherine Thompson's Ph.D. thesis in 2012.¹ Most of the thesis implicitly defines a feral colony as one that is not managed by beekeepers. She considered only 68 colonies in England for her research on feral health, narrowing it for further study to 34 ferals that were paired with nearby managed colonies. But in Hampshire, i.e. in just a small part of that area, John Haverson and colleagues are monitoring over 80 long term ferals with a radius of 10 miles. In a radius of about 15 miles around my home in NW Wales the number of ferals monitored by myself and associates are in the dozens.² And data are also available from Scotland. By considering land area only below the 300 metres contour we can reasonably estimate from these limited samples that Britain-wide, the numbers of ferals could be in the many thousands, if not tens of thousands.

What is the difference between feral colonies and the 'wild' colonies to which Roweth refers? The answer is there is no difference. Indee d Thompson appears to use the terms 'feral' and 'wild' interchangeably, a usage which accords with dictionary definitions of the term. She also quotes a paper published as long ago as 2000 indicating that

""mild" honeybee populations are starting to rebound'. That was 16 years ago and now so many accounts from round the UK support the proposition that wild/feral colony numbers have completed their rebound. Well studied populations of unmanaged colonies in Europe and the USA are coping with Varroa without any kind of treatment.^{3/4/5} In my county most members of its two beekeepers' associations have long since stopped any chemical treatment for Varroa.⁶ It has even been found in our surveys over the past five winters that those who do not treat have lower colony losses each winter than those who treat.⁷

We must next consider that Roweth is using a stricter definition of a 'wild' colony than is commonly the case. He could mean colonies that comprise solely Apis mellifera mellifera (AMM), the northern European black bee that inhabited these isles before beekeepers started importing other races from southern Europe more than a century ago,

resulting in a mixture of AMM, Italian and Greek races. Indeed, a sentence after the quote in the first paragraph Roweth writes 'With the loss of the 'mild' honeybee colonies we have lost their part of the gene pool, at a time when bees dearly need it.' However, that gene pool is still available in AMM populations in the UK especially in remote parts of Scotland, as well as in less remote places in many other northern European countries. Furthermore, as a gene pool, a kind of 'memory' stored primarily in the DNA, is a reflection of the adaptation of an organism to its particular circumstances, in this case the honeybee to the available forage and climate, a wild honeybee in today's climate and highly modified cultural landscapes would very likely have characteristics that differ to some degree from those possessed by the indigenous AMM of over a century ago. Even so, there are breeders of AMM in several European countries who are only too willing to sell you AMM queens.

Are feral bees strictly wild? If you ever try keeping bees, you will soon learn that there is nothing particularly tame or domesticated about them, even if some beekeepers try to breed out defensiveness. Norman Carreck, a distinguished apiologist, science director for the International Bee Research Association, researcher at Sussex University and editor of the Journal of Apicultural Research has stated that in his view all bees are wild.⁸ Prof. Thomas D. Seeley, who has worked for decades on wild honey bees in tree cavities, writes: 'I too prefer to refer to colonies living on their own as 'wild colonies' rather than 'feral colonies' since to my mind honey bees were never really domesticated, so the term 'feral' (= having escaped from domestication and become wild) is inappropriate for honey bees'.⁹

Thompson reasonably assumed that if 'wild', i.e. AMM, bees exist in England and Wales, then she should have been able to lure them with hot wax and honey or trap them in areas where there was no beekeeper activity, i.e. at least 10 km from any apiary. Unfortunately, she was restricted in her choice to large tracts of either conifer forests or clear felled land recovering from conifer afforestation, places where established feral populations were very unlikely to exist, let alone beekeepers. So the result was not unexpectedly: no honeybees. This contributed to her conclusion that 'It seems likely therefore, given that feral honeybees have a low survival, and closely reflect managed colony genotypes, that there are no remaining wild populations of Apis mellifera mellifera in England and Wales'. Possibly this conclusion has given rise to a belief that there are no wild honeybees. Had Thompson used the term 'native' instead of 'wild', as she did in an article published before her thesis, less confusion may have resulted about wild honey bees in Britain.¹⁰

Most beekeepers I am in contact with who try to keep bees in as natural a way as possible take a close interest in wild honey bee colonies around them by learning how they live and what their preferences are so as to be able to inform their beekeeping with an apicentric, bee-centred understanding. So Roweth's concluding question, 'Could the Bee Gym have a role to play in honeybee conservation, creating sustainable 'wild' colonies away from managed apiaries?' causes me some concern if it means fitting Bee Gyms in feral colony nest cavities. Would such colonies any longer be truly wild? Why not let the feral population of honeybees carry on towards completion of its process of natural coadaptation with the Varroa mite?

Regarding use of the Bee Gym in hives: clearly in the context of biodynamic organic apiculture, this method of treating for Varroa – and let us be clear, it is a treatment – is certainly preferable to putting chemicals into the hives, however organic the chemicals may seem. But those of us who use no form of treatment for Varroa, preferring to let nature take its course, await the publication of the results of properly conducted trials that show how effective the Bee Gym is in promoting colony survival and therefore increased colony longevity.

David Heaf david@dheaf.plus.com www.bee-friendly.co.uk

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References

Thompson, C. E. (2012) The health and status of the feral honeybee (Apis mellifera sp) and Apis mellifera mellifera population of the UK. Ph. D. thesis, University of Leeds.

² Hudson, C. & S (2015) Wild honey bees of the Glaslyn. The Welsh Beekeeper; No. 190, 26-31

³ Locke, B. & Fries, I. (2011) Characteristics of honey bee colonies (Apis mellifera) in Sweden surviving Varroa destructor infestation. Apidologie 42:533–542

⁴ Le Conte, Y., de Vaublanc, G., Crauser, D., Jeanne, F., Rousselle, J-C. & Bécard J-M (2009) Honey bee colonies that have survived Varroa destructor. Apidologie 38: I-6.

⁵ Seeley, T. D. (2007) Honey bees of the Arnot Forest: a population of feral colonies persisting with Varroa destructor in the northeastern United States. Apidologie 38: 19-29.

⁶ Heaf, D. J. (2015) Winter Colony Losses: Does Varroa Treatment Alter Outcome? BBKA News, 270.

Pritchard, D. (2015) Varroa Treatment and Colony Losses. BBKA News 435. ⁸ Carreck, N. (2014) Quoted by Zoe Gough in Wild honey bees: Does

their disappearance matter?', http://www.bbc.co.uk/nature/28290890. Seeley, T.D. (2016) Personal communication to Jonathan Powell.

¹⁰Thomson C. E., Budge, G. & Biesmeijer, J. (2010) Feral Bees in the UK: The Real Story Bee Craft April, 22-24.

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Earlier this year Demeter International took the major step to appoint a General Secretary to help administer some of their day-to-day business. This is an important development, with the hope that it will support the effectiveness of the international biodynamic movement. Here I ask Christoph about his new role.

Richard

When did you start with your new role in Demeter International and what are your main tasks? Christoph

I started on January 1st this year. As the position of a General Secretary is new in Demeter International, my role will develop. For the beginning I am a member of the staff and responsible for the tasks of trademark and finances. But I will also take care of the process of the 'paradigm change'.

Richard

Why did Demeter International think it necessary to create the position?

Christoph

A growing organisation needs more professionalism. That means that the necessary tasks cannot only be executed by Board members that have a main job in their respective organization. We needed someone whose main task is Demeter International.

Richard

You say that trademark protection is part of your work. What are the main principles, challenges and concerns in that area?

Christoph

We monitor worldwide all registration of the Demeter and Biodynamic trademarks. As soon as there are registrations with Demeter, Biodynamic, or trademarks that are very similar to them, we try to oppose those registrations that affect us in the classes where we have registered our trademarks.

Richard

There has been some debate about protecting the word 'biodynamic' as is the case in the US. Some people say that leaving it open helps the free development of biodynamics, whilst others say that if unprotected it could lead to abuse by say GMO companies. Where do you stand on that?

Interview with Christoph Simpendorfer – General Secretary of Demeter International

By Richard Swann

Christoph

This topic was intensively discussed in our Members Assembly in Finland last month. The question is quite complex because some trademark registration authorities consider the term Biodynamic as being descriptive and generic. Therefore, they refused the registration. On the other hand, we own some trademarks that have already allowed us to oppose successfully some registrations by third parties.

Richard

For the past six years, Demeter International and the wider biodynamic movement has been working on formulating biodynamic Mission, Values and Principles. Why is this work so important? How can we in the UK understand and contribute to the process? Can you summarise the situation as it stands.

Christoph

We have just adopted the latest version of our Vision and Mission statement (see page 44 in this issue). On one hand, it can give an orientation for each country and each regional group to reflect on its own work. Do we cover all working areas? Do we agree on the goals that we want to reach within the international community? On the other hand, we need the principles that have been worked out to reflect the concrete work on the farms and in the companies. Our leading picture of a farm as an individual place cannot only be reflected through standards. The farmers need recognition for their dedicated work.

Richard

The Demeter Members Assembly has also been working on the 'paradigm change'. This is exciting work. Can you explain to readers what it is and how they can engage with it?

Christoph

'Paradigm change' means that we want to change from judging all farms against the same standards to a system of recognition of what has been achieved, of reflecting where improvements are possible and of supporting these developments.

We would like to develop the concrete principles together with the farmers. This is meant to be a participatory process.

Richard

Do you think we could reach the point where we do not work to any standards, but work out of a wish to improve the land through biodynamics and for that to be recognised?

Christoph

I hope that soon we will develop the new way of recognition of the farmers, but as well of the processors and traders. But we certainly will need still some standards to define bottom lines, especially where there are real risks, such as GMO etc...

Richard

How do you think this recognition of farmers' achievements could be carried out?

Christoph

In the Netherlands and in Germany we have already experiences with what we call "farm-talks". A farmer invites other competent people on his farm. This could be other farmers, but as well advisers or even consumers. The farmer presents his farm and explains his motivation; the visitors appreciate this, but reflect as well how they see the realization of Biodynamic principles. Through this dialogue the farmer can be inspired to make a next step in the development of his farm towards our common Biodynamic ideals.

Richard

What do you see as being the main opportunities for Demeter within the organic movement? Christoph

Demeter has the role to hold up the idea of a farm as a living organism. That is where the name of the organic movement comes from. We can see more and more specialisation on organic farms, which works against this ideal. The integration of animals as the element of building relations within the farm organism is one of our main contributions to the organic movement.

Richard

What do you see as being the challenges we face? Christoph

Next to that struggle to keep diversity on our farms, the main challenge will be to find enough young people to carry on our ideals of a real sustainable agriculture. We need new ownership solutions and new ways of sharing responsibilities on farms so that the next generation can find a balance between work, family and personal development.

Richard

You also have a farm in Germany. Can you tell us a bit about it? Where is it? How long have you been farming? What have you learnt as a biodynamic farmer that you would like to pass on?

Christoph

For more than thirty years, I have been a farmer on the Reyerhof in a suburb of Stuttgart in the South of Germany. We have 38 ha of land. As we are in the middle of the town, we do not have space for more than 10 cows. All calves that are born on the farm are brought up and their meat is sold in the farm shop. The milk is sold as raw milk and we produce yoghurt, quark, and ice cream. We plant vegetables, potatoes, strawberries and wheat. Half of the harvest is sold in the farm shop; the other half goes to a CSA.

We have also a small restaurant on the farm.

For me to be a farmer is the most challenging profession, but also the most satisfying. You can follow living processes from the beginning to the end result and even get feed-back from the consumer you are working for. You can develop a broad spectrum of abilities.

Richard

What message would you give to young people wanting to start in farming and gardening today? Christoph

To make the best training possible, to invest in social competence and to look for reliable relations with those who buy your products be they consumers, processors and traders.



demeter

Biodynamic Quality Vision, Mission, Principles & Values Agri-Culture for the Future

By Demeter International

The future of the Biodynamic Movement, inspired by people from agri-culture, processing and trade, scientists, and consumers is characterized by both internal and external openness. This movement is striving towards connecting with other movements and engaging in honest and open dialogues with the society. This is seen as essential for the further development and dissemination of the practice of Biodynamic agri-culture firmly backed by the International Biodynamic Association (IBDA), the Section for Agriculture at the Goetheanum, Demeter International and the national Biodynamic and Demeter organizations worldwide.

In the course of this, the movement holds its source of inspiration and strength beyond the Biodynamic principles in its inner core of Rudolf Steiner's anthroposophy; thus including the Agricultural Course and its holistic understanding of healthy personal and societal development, conveyed in education, cation, fundame are in cation of Earth and evolution of Earth and manual costic and spiritual impact and evolution of Earth and manual manual for the spiritual impact and evolution of Earth and manual for the spiritual impact and evolution of Earth and the spiritual impact and the spiritual impact and evolution of Earth and the spiritual impact and the spiritual impact and evolution of Earth and the spiritual impact and the spiritual impact and evolution of Earth and the spiritual impact and the spiritual impac consultation and information.

Relationship

Agri-culture

for the future

inspired by

intuition and

responsibility

Human

Development

The title "Agri-Culture

VISION Where do we want to go?

We want an agriculture that ... … encourages mankind to take over the responsibility for the holistic development of the earth (Ecology). ... impels and enables people to unfold their individual potential and develop their full consciousness (Human Development), ...produces wholesome and healthy food and other agri-cultural products that are of high quality and nourish body, soul and spirit (Economic Value Creation), ...fosters people to live and work together in dignity, mutual respect and tolerance (Social Relationship) embraces the material and spiritual world and

empowers mankind to be conscious of and embed the cosmic and terrestrial forces and substances (Cosmic and Spiritual Impact).

for the Future" with highlighting the word "Culture" emphasizes that it is not only about cultivating farming land as well as processing and trading good food, but really about the development of humans and the earth. We therewith conceived the term and concept broader than previously done, and have to further deal with the concept formation in the future. Hence, we will continuously develop our mission, vision and principles with all involved and interested parties.

It shall also be emphasized, that agri-culture is seen as an essential foundation for both personal and societal development and that it will gain in importance as it provides solutions for all burning issues of the present including the economic, cultural, social, and ecological ones.

We express our vision, mission and principles in the four dimensions of holistic sustainable development including a fifth sphere of cosmic and spiritual impacts. This shall contribute to a better structural understanding and

> Value Creation Economic

overview but is not antithetic to the holistic fundamental view. The dimensions are integrated with each other and mutually reinforcing.

MISSION What are we doing?

In order to attain our vision we want to: Ecology

Create living soil and lasting fertility. Create a living context within which human beings, animals and plants can thrive and develop.

Advance the continued evolution of domestic animals and cultivated plants.

Human Development

Find innovative social and technical solutions to the challenges we face and develop a new comprehension of nutrition and food quality with adequate methodologies to evaluate food quality. Enter into dialogues with those working with traditional, organic, spiritual and alternative growing methods as well as with those engaged with conventional agri-culture. Educate consumers and raise awareness of their responsibility.

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Enable farmers, processors and traders to practice agriculture for the future.

Continue developing the vision, mission and principles with all interested parties.

Economic Value Creation

Handle resources with care during the processes of both production and consumption.

Develop a cooperative approach throughout the production chain and create partnerships with supporting businesses and civil society groups.

serve our objectives.

Support producers in our movement to recognize and adapt to increasing market demands and encourage consumers to understand the importance of seasonality and regional production.

Social Relationship

Encourage individual communities to pursue and develop agri-culture in their specific context.

We actively campaign to create the conditions needed for sustainable and holistic development.

Formulate guidelines and standards that include social values and develop appropriate ways of assessing them to ensure that our brand is protected and remains trustworthy.

Cosmic and Spiritual Impact

Develop spiritual abilities and seek knowledge.

PRINCIPLES How do we work? Ecology

With ruminant husbandry (especially cattle with horns) diverse crop rotation, targeted cultivation controlled composting of organic manure and the usage of Biodynamic preparations we vitalize the soil and increase its fertility.

All over the world farms adapt to the regional context to form an individual organism, which is viable by itself creating manifold ecologic, cultural and social living spaces/ habitats for the future development of plants, animals and human beings.

Through the use of Biodynamic and holistic breeding methods, we create conditions for healthy, characterful, mellow and beneficial food and we treat animals as fellow creatures and enable their inherent development.

Human Development

We follow an inter-disciplinary, action-oriented approach to research to continuously develop and improve the Biodynamic methods, food quality and associative economic activity.

We foster mutually enriching and open-ended dialogues based on mutual respect. We offer full transparency regarding origin, production, processing and consistency of products to strengthen self-responsibility and free

choices of consumers and continuously develop "True Cost Accounting"-methods that consider all external costs of food production and make these real costs understandable. We provide our farmers with the knowledge and skills needed to improve the quality of their work and in the same time stay competitive, and create a corporate culture, which puts human beings, their need for individual development, their entrepreneurial behaviour and innovative strength in the focus.

The Demeter-community enables contact and decision-Make use of technology in a conscious and focused way to making in the Demeter-association along the value chain, from producers to consumers, with a continuous improvement of working processes and governance structure. **Economic Value Creation**

We aspire to use resources in the production and consumption in an attentive, sustainable and innovative way towards a closed-value chain economy that makes use of renewable sources and preserves the goodness as well as to unfold formative forces, wholesomeness, and savouriness of

We cooperate with ecological organizations, civil society and companies from different industries, which share our goals for a better future in a balance with regional value chains and international trade and offer them appropriate prices for their goods. In case of competition between members, they avoid indecent and adverse dealing with each other.

All activities should be done without disproportionally harming or interfering with living organisms with the sustainable, living ecosystem as the highest value.

We communicate transparently and provide farmers and consumers with comprehensive and transparent information about the market as well as the backgrounds of the production conditions.

Social Relationship

the products.

We are aware of different local cultures, climate, and geographic conditions

Among the different member countries and are open for purposeful and transparent adaptation of best practices. • We lobby for a pricing structure based on values that reflect the true costs of production, including the social and ecological costs and actively bring our agri-culture mission and values to the public discourse.

We lay down conditions for a fair and respectful interaction between all members of the value chain and secure the Biodynamic method in the processing of raw goods and trade with the brand "Demeter".

Cosmic and Spiritual Impact

We are receptive and aware of personal spiritual abilities, vigilant and sensitive to our environment and the emotional life of those who surround us. Thereby we strive for perception and enlightenment.

VALUES Dimensions	Core Values	Inner Attitude	Outer Approach
Ecology	Sustainability	Respect	Responsibility
Human Development	Freedom	Open-Mindedness	Interest
Economic Value Creation	Solidarity	Empathy	Partnership
Social Relationships	Equality	Sense of Justice	Fairness
Cosmic and Spiritual Impact	Holism	Spiritual Quest	Connect with whole Context

The parts and the whole: Encountering a kestrel and the farm organism.

By Ed Berger

For several years I have been occupied with the idea of developing the farm as an integrated 'organism'. One of the key assertions of Rudolf Steiner's eight agricultural lectures was that "a farm comes closest to its own essence when it can be conceived of as a kind of independent individuality" (Steiner 1993, p27). Within the

biodynamic movement, this 'independent individuality' is also referred to as 'the farm organism'.

As a practitioner of biodynamic agriculture, a farm manager and an educator, the question of what is a farm organism remains a consistent theme for me. Is there ways to experience the farm organism, to see it and its state of health as a whole?

Standing above the farm on a nearby hill I have the impression of the farm being just part of the general patchwork landscape of hedged fields, wooded copses and occasional farm buildings. So where is the cohesive organism? Just in my head? In his article 'Counterfeit and Authentic Wholes' Bortoft describes how; "....we cannot perceive the whole by standing back to get an overview". On the contrary, because the whole is in some way reflected in the parts, it is to be encountered by going further into the parts instead of standing back from them."(Seamon 1998, p280)

Recently, a male kestrel arrived on the farm. He brings a new layer of activity to the farm or the air above the farm; a sleek, pointed being swerving and veering over the contours of the fields, hanging on the wind, absorbed in pursuit of quarry. He is a regular participant out around the fields, darting past in the periphery whilst I work. I'm quietly pleased he's there; alongside appreciating his beauty, I feel a sense of completeness in his arrival – kestrel fulfils something in the place.

A kestrel's main food source is field voles. They catch between 4 and 8 per day, caching some for consumption at dusk. To sustain a single kestrel, a plentiful population of field voles within a 1km radius of its roost is a necessity. The kestrels' arrival signals the theoretical crowning of the farms' 'trophic pyramid'; a graphic representation used in ecosystem modelling to show the bio productivity at each level of a food chain in a given ecological community. So what does this relationship between field voles and a kestrel tell me about the emerging ecological dynamics of the farm? And can this ecological understanding contribute to the notion or realization of a farm as an organism?

Several years ago I decided to limit reseeding grass-

land in favour of allowing a localized natural sward to develop. Alongside this the sheep flock was sold and replaced by goats and cattle. They both graze much less uniformly than sheep and also leave the remaining grass longer after grazing. Low staffing levels due to financial constraints on the farm decreased the intensity of mechanical mowing throughout the garden and along paths. All of these factors contributed to creating significant areas of longer tussocky swards, predominated by meadow grasses, bromes, fescues and bents, an ideal habitat for voles for both nesting and feeding. Although I have not formally tracked the vole population, the kestrel's presence likely signifies an increase in the voles, due to habitat creation and greater availability of suitable food. A simplified formula would describe it something like; partially grazed permanent pasture (producers) > field voles (primary consumers) > kestrel (tertiary consumers).

A trophic pyramid does not attempt a detailed description of an eco-system; it approximately represents degrees of nutritional hierarchy between organisms and their environment, proceeding from producers (generally plants) to herbivores to 'apex' predators like kestrels. The arrival of apex predators therefore describes healthy trophic dynamics below it. The model points to the movement from parts to wholeness. As Bortoft writes; 'In this conventional way of seeing, we see the whole developing by "integration of parts"... The implication is that the whole always comes later than its parts' (Seamon 1988, p282)

Bortoft goes on to suggest that another reality co-exists where the whole is already "immanent" (p284); the parts show us the way to the whole. But how can we know the authentic whole when it is both emergent and incomplete in a certain sense? An overarching image of wholeness grounded in the motif of an organism guides the biodynamic farmer in his or her practical work. So what is an organism in this sense? Nastati describes it as; ".....a group of organs, each with its own specific roles and functions, which collaborate to enable some higher activities or function..... Consequently it is essential that the organs are both healthy and balanced with the others....." (Nastati 1984, p5)

From the biodynamic perspective, the organs of this organism are the various facets and processes of the agricultural holding; forests, pasture, livestock, flora, fauna, horticultural operations, economic and social activities, the farmer/s and so forth. The human being is placed firmly into the frame; his or her contribution is to initiate and integrate out of an ongoing enquiry into that particular place. It is both the farmers' inner sense for unity and balance within the complexity of a holding, alongside his or her agricultural adeptness and creativity which becomes the catalyst for coherency within the farm organism. The kestrel's arrival here both describes an attribute of healthy integration of parts, as well as a further opening of the "emergent whole that comes forth into its parts". (Seamon 1998, p283). My experience of the drama of Kestrel reflects this; in its vibrant being-ness played out over the farm landscape something both is and feels fulfilled.

The trophic pyramid is a narrow representation of an aspect of the natural order, but the image is an abstraction which doesn't capture wholeness and bears only a partial relationship to the richness of my experience of the living world. Where the sole aim is to assess healthy farm ecology, then, a trophic pyramid gives quantitative representation to this, describing unity as the summation of a logical sequence.

The notion of a farm organism expands on and challenges this view; unity is innate and precedes the innumerable complex relationships within the components. The trophic pyramid is therefore a momentary snapshot; useful for taking stock of a particular range of biological connections but one which may be too fixed to fully portray the nuance and complexity within it. The image of an agricultural organism is dynamic and emergent; it allows for wider interplay, for growth, for surprise and change and crucially, it places the human being in the natural order. In agricultural and managed landscapes this is fundamental, we too are situated in life as organisms, orientating through our body and our particular mode of consciousness and affecting organisms around us. Thus, to be able to grasp anything of the transience and complexity in a biological system, a biodynamic farmer must become a discerning observer of ... 'organism and organs..... not only to observation of plants and animals but ultimately to ourselves...' (Bockemühl 2006, p114).

The farm organism model embeds the human as the key facilitator within the web of interaction and the archetype of integration to which the facilitator refers. My presence to myself, to the kestrel, the voles and "the tangled, unkempt places" they live (Macdonald-Lockhart 2016, p169) is where the information about the whole arises. Not as a thing, but as a developing receptivity for unity and dissonance which can guide my actions as a sensitive participant in the unfurling coherency and health of the farm organism.

Ed Berger is farm manager and deputy principal at Glasshouse College, near Stourbridge. He is also a student on the postgraduate course Researching Holistic Approaches to Agroecology, run by the Crossfields Institute. This article contributed to Ed's portfolio of work for studies in Holistic Science, a module which explores the entwined developments in agriculture and science throughout history and investigates innovations in these domains for the 21st century.

For further information about the postgraduate course see: www.researchingagroecology.org.uk



References

Books

Seamon, D. Zajonc, A. (1998) Goethe's Way of Science (Suny Series, Environmental & Architectural Phenomenology). Edition. State University of New York Press.

Steiner, R. (1993) Agriculture: Spiritual Foundations for the Renewal of Agriculture. Reprint Edition. Bio-Dynamic Farming & Gardening. Bockemühl, J. Järvinen, K. (2006) Extraordinary Plant Qualities for

Bockemuhl, J. Jarvinen, K. (2006) Extraordinary Plant Qualities for Biodynamics. Floris Books

Macdonald Lockhart, J. (2016). Raptor: A Journey through Birds. Edition. Fourth Estate.

Websites

Biodynamic Association (2016) The Farm Individuality [www.document] https://www.biodynamics.com/farm-individuality

Fancher, L. (2004) Trophic pyramids [www document] http://www.cod.edu/people/faculty/fancher/TrophicPyramids.htm

Nastati, E (1994) Four Aspects of the Agricultural Organism [www.document] http://www.moodie.biz/pdfs/4Aspects.pdf

The Mammal Society (2014) Species Fact Sheet: Field Vole (Microtus agrestis) [www document]

http://www.mammal.org.uk/sites/default/files/factsheets/field_vole_ complete.pdf

The Royal Society for the Protection of Birds (2016) Bird Guide – Kestrel [www.document]

https://www.rspb.org.uk/discoverandenjoynature/discoverandlearn/birdguide/ name/k/kestrel/

The Nature Institute (2016). When Holism Was the Future. [www document] http://natureinstitute.org/pub/ic/ic22/russell.htm.

New Developments at the Biodynamic Agricultural College

By Kai Lange

Last summer the successful Biodynamic Work-Based Learning Diploma moved from the Biodynamic Association to the Biodynamic Agricultural College. This enables the Biodynamic Association to focus on its core aims and the Biodynamic Agricultural College to carry much of the responsibility for biodynamic education in the UK.

This is part of a wider aim to create a family of collaborative biodynamic organisations, with the Biodynamic Association at its centre, surrounded by more specialist organisations – BD Certification, the Biodynamic Agricultural College, the Biodynamic Land Trust and the Seed Cooperative – all of which have been inspired and often born out of the impulse of the Biodynamic Association.

BIODYNAMIC WORK-BASED LEARNING ACHIEVES OFQUAL ACCREDITATION

This spring, the Crossfields Institute level 3 Diploma in Biodynamic Farming and Gardening (VRQ) became the first OFQUAL accredited biodynamic qualification in the UK. This is the fantastic result of much work by Crossfields Institute and the Biodynamic Work-Based Learning programme, to move from a Pearson Assured certificate (achieved in 2010) to a qualification, which is on the OFQUAL register, recognised in the same way as NVQs, BTECs, GCSEs and A levels. So for the first time units such as Introduction to Anthroposophy, Farm Organism, Agricultural Astronomy and Biodynamic Preparations appear on the OFQUAL register.

The average age of farmers in the UK is now 58 and rising. There is a clear need for young farmers in the UK and beyond, who are both inspired to manage our agricultural landscape in a holistic way, and are knowledgeable in providing care for our environment and producing vital food. The Biodynamic Work-Based learning offers students two years of structured on-farm learning on biodynamic farms and gardens, working alongside experienced practi-



Farms currently offering work placements in the UK and Ireland

tioners and supported by ten weeks of seminars and a professional individualised approach. On successful completion, students will receive a full level 3 Diploma in Biodynamic Farming and Gardening (EQF level 4 EU equivalent).

To fulfil the current need, we need students who are inspired to work for a better future, and we need farmers and gardeners who want to share their passion for biodynamic agriculture, pass on their knowledge and skills and to ignite inspiration in the next generation of biodynamic farmers.

BIODYNAMIC PRINCIPLES AND PRACTICE OFFERS NEW COURSES

The Biodynamic Principles and Practice course offers distance learning courses which can be taken from anywhere in the world. By providing live (and recorded) seminars with teachers and farmers, and combining these with customised reading and external resources, we aim to make distance learning that connects to students' experience, providing context and meaning to accompany working with the natural world. Having gained five years of experience in distance learning, the Principles and Practice course is now being restructured to offer the following courses beginning in autumn 2016:

Introduction to Biodynamics is a four-week course for anyone interested in biodynamic agriculture – producers, consumers or anyone else interested in eating vital food and working with nature to save the planet. The course sets out the context and principles of biodynamic agriculture and gives some examples of current practice.

For students who are interested in more, the **Biodynamic World View** ten-week course explores the human relationship with nature that informs the practices of biodynamic agriculture. This is a course that articulates the experiential relationship with nature that can contribute to agricultural practice that works in harmony with nature.

For those wanting to work actively with biodynamic agriculture, our **Core Biodynamics Course** (16 weeks) explores the practice of working in biodynamic agriculture in a wide variety of situations and farm organisms. This is done by bringing students into contact with farmers and gardens from all over the world, through conversations, seminars, and written resources, students will learn about biodynamic practice on different continents, with different farmers, scales and enterprises.

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EAT RIGHT: Traditional food wisdom to sustain us today

Nick Barnard, 2016, Kyle Books; available from BDA shop, £25 *Reviewed by Lynda Brown*

It is not often I am impressed with a food book these days, but my admiration for this book grows every time I read it. For me, it qualifies as an 'important' book. Its author, Nick Barnard, a committed supporter of Biodynamic food & farming, and regular volunteer at Tablehurst and Plaw Hatch biodynamic farms, is co-founder of organic Rude Health Cereals www.rudehealth. com, and the man behind the now famous rants session at Abergavenny Food Festival. Both give clear clues about what you can expect from this book.

For Nick Barnard believes passionately in taking responsibility for your own health; that rude health begins and ends with naturally nutritious foods, produced the right way; and that the way forward out of our dismal modern nutrient-light food dessert, populated by disease-promoting processed foods devoid of soul and nourishment, is to return to the food wisdom of our food forefathers.

That itself is pretty impressive, but the fact that Nick Barnard stands up for what he believes in – and is not prepared to compromise to court populism or political food correctness – makes his book really exciting. In short, cocktail nibbles are out, Right On food ethics is in.

For, like the nutrient- dense food he advocates, Eat Right is first and foremost a thought – dense, provocative book. Most new cookery books are filled with life-style platitudes and vacuous copy whose prime function is to act as padding between the on-trend photography of yet more twists on dishes you are never going to cook. Books that you can read in 15 minutes flat, get nothing out of, and learn nothing from (Nick Barnard is not the only one partial to a rant). Eat Right, on the contrary, demands you think first, not mindlessly follow.

His stance on raw (unpasteurized) milk, for example, is a case in point. I would expect anyone reading the Star & Furrow to be receptive to the arguments for, and health benefits of, raw milk (delicious stuff). Nick Barnard goes one step further. Every recipe requiring milk states 'raw milk 'as the preferred ingredient. As far as I am aware this is a first for a food book designed for the consumer market. It puts raw milk right up there in the reader's consciousness, so by the time you get to the end of the book, raw milk seems normal, and you find yourself wanting to seek it out and drink it. To put this in perspective, until very recently, most publishers and newspapers would veto the use of, say, organic chicken in a recipe. Many still do - the argument being it's too expensive, readers can't get it sort of thing - that's how difficult it is to move the food debate forward when it comes to anything that seriously challenges the status quo.

This is just one example of why I think this is an important book: it expands food horizons. But before you get

tore before phoning the office.

too excited, don't expect a quick – fix instant road to health and nourishing happiness. This is not a book you can nip down the supermarket with, scan the shelves for a few extra ingredients, mindlessly stock up on the rest, and away you go. Eat Right requires you to put effort into nurturing

yourself, and to develop a lasting relationship with food again. It requires you to be knowledgeable about your food, to see through the nonsense of the latest food fads and food marketing scams, to take back your taste buds from celebrity chefs and supermarkets; and to become not just a scratch cook but to rethink the basics of a modern diet, and – critically – learn some ancient skills. You are also going to need a dehydrator and yoghurt maker to go with your juicer; to invest in Rude Health's latest brain wave, sprouted flours; and to acquaint yourself with a new phrase " pastured" to describe livestock and eggs produced from hens that actually spend their lives enjoying proper pasture. Quite right, too – free range has been so bastardised as to mean virtually nothing these days.

Not surprisingly, then, the book kicks off with the nononsense Eat Right view of a modern approach to traditional foods, and the Eat Right's store cupboard: dairy, meat, fats, fish, eggs, fermented foods, sprouts, grains, lots of veggies, a bit of fruit, wild sweetness, and drinks. It follows with a lengthy chapter on techniques. No, not how to boil and egg, or bake the ultimate cup cake, but detailed instructions on how to make your own nourishing dairy products – kefir, yoghurt, butter, etc.; how to ferment vegetables; sprout grains and activate nuts; how to produce your own cider vinegar; render animal fats, and so on. These are the new basics and they swallow up 82 pages of the book. Which already makes it at least 10 times more valuable than most other cookbooks likely to be on your shelves.

The remainder of the book comprises recipes: a do-able selection of tasty – sounding familiar combinations, plus a few unusual ones to expand your culinary horizons, such as Bubur ayam (Indonesian rice and chicken porridge) and a fragrantly spiced Dutch-style gingerbread. Breakfast, soups, meat, eggs & cheese, fish, vegetables, sweet things (puds, baking, snacks), breads and drinks are all given the Rude Health treatment. Of particular interest for the newly converted Eat Right cook is the drinks section: home- made kvass, turmeric tonic, nut and grain milks anyone? Yes please!

Only one minor carp: many people will no doubt enthuse over its design and photography. Sadly, unfathomable though it may seem to those of us who want to read the book, that includes the use of coloured pages to highlight a selection of interesting mini –essays and useful knowhow on topics such as "what is real chocolate?" and "water is life". This, combined with the small typeface, renders them difficult to read without a magnifying glass. A question of style – aka 'branding' – over substance, which is a shame as Eat Right is stuffed full of the stuff.

MEMORIES OF GRANGE I. KIRKCALDY

Edited by William Milne Private Publication Reviewed by Vivian Griffiths

Readers of Star and Furrow might have come across The Grange Kirkcaldy Charitable Trust and wonder about its origins and purpose and who was its founder?

Recently two very readable books have been published in Aberdeen to answer that very question and they open a door on this very important time for Grange and Mildred Kirkcaldy when Biodynamic farming and gardening was establishing itself in Britain. It moreover widens the history to include the remarkable developments in North East Scotland between the 1930s and 1950s reflecting on the fact that Aberdeen had the largest Membership of The Anthroposophical Society outside London in the late 1940s.

Grange and in another way Mildred Kirkcaldy represent a particular strong, deeply grateful, absolutely dedicated and perhaps you could describe "military" type of approach to Biodynamics in the early years of The Movement where one's whole life is naturally an extension of the cause of furthering the body of knowledge that is Anthroposophy. This is actually a response of deep gratitude to Rudolf Steiner. Indeed with many who came across Rudolf Steiner's indications, the discovery of Anthroposophy was a ray of hope from the carnage and loss of The First World War which caused a deep life crisis and trauma in so many.

The books make reference to Mildred's relation Maurice Nicol, a truth seeker and follower of Ouspensky, so a sign is set. Strange to say, or perhaps not so, in the recovery of this trauma at The TorNa' Dee Hospital on the outskirts of Aberdeen in 1931, Grange found solace and healing. Firstly in the encounter of a young woman there who told him about reincarnation, and secondly in walks in the very place where 10 years later Dr Koenig and his Youth Group would come to settle and found The Camphill Rudolf Steiner Schools.

Mr William Milne, who has written these two books on the Kirkcaldys and who was a teacher at The Aberdeen Waldorf School until recently, is to be congratulated in his writing of their biographies as he brings out these salient points and moreover the human story that ensued. So Grange was no fierce, army, unforgiving military man, although his military training influenced his approach. He was more a deeply interested person in those who came across him seeing it as destiny that they should meet and a deeply held duty that he show them the rudiments of Anthroposophy and his particular love and devotion, biodynamic farming.

Milne goes on to describe the slightly eccentric Kirkcaldy household where, when a fuse went with the electricity, the elemental beings were playing up or the diet of rough porridge and wholemeal bread much to visiting children's concern! All this of course highlighting the quest for a much



GRANGE I. KIRKCALDY

better nutritional standard gained from reading Rudolf Steiner's Agricultural Course. The awareness of the effects of refined sugar decades before it was discovered to be harmful is noteworthy even if it meant a total ban on sweets and chocolate! It should also be mentioned in a surprising way that Grange organised painting classes on Saturdays, much

appreciated by local children.

Many people after The First World War turned to farming as a kind of healing. Perhaps a very good example of this is Maurice Wood of Huby Mill, north of Leeds, where Maurice, a Quaker from a city building family who had been to Daniel Dunlop's World Conference in London in 1928 had heard Karl Mirbt from The Koberwitz Estate talk about Biodynamic Agriculture. Consequently taken up, it led to George Adams on the farm translating the Agriculture Course of Rudolf Steiner into a very practical English.

The all important business of farming had to be mastered as well and that was a big challenge when after Grange's, you could say, "conversion" he resolved to take on a farm and practice Biodynamics. Therefore, the 1930s with Grange, now retired from the army and full of interest and concern for a better form of agriculture, the Kirkcaldy family spent the decade at The Lodge at Auchindoir bought from the Church of Scotland 40 miles west of Aberdeen near Insch. Interestingly it was near The Williamson Estate with visions of creating a "Biodynamic Republic" and managed by Mr Haughton who is seconded by Grange for The Anthroposophical Society of Great Britain Membership.

The story continues in 1935 with the purchase of 2 Fonthill Crescent in Aberdeen for the daughters to attend day school and the subsequent move there by Grange leaving the farm in the capable hands of a Manager. This house, as is remembered by the Kirkcaldy family and related in the biography, becomes a centre of Anthroposophical study groups precisely conducted by Grange and the making of the biodynamic Preparations for local distribution and all that entailed including forays to collect dandelion heads and the subsequent drying in the kitchen over the AGA! What Mildred thought is not recorded, indeed her support for all things Anthroposophical deepens with her literary and editorial talents being employed in the establishment of The Anthroposophical Quarterly with Mr Harwood and her work with a Church of England Canon, A P Shepherd of Worcester Cathedral who had come across Steiner's work at the Sunfield Children's Home. Their collaboration produced a very fine and important book, which has been much underrated 'The Redemption of Thinking'.

One point, which emerges in this description, is Grange's interest in young people; sometimes university students at Aberdeen are roped into Preparation making. This was a sacred task, and their reward a thoroughly fascinating conversation on elements of Anthroposophy including Christian spiritual elements, which would be food for the soul for a lifetime.

Milne gives a glimpse of this Aberdeen household through asking Grange and Mildred 's children to describe their impressions of their mother, father and grandparents. They portray a strict but kind, unusual and interested human being who had such a treasure of knowledge not always appreciated at the time, but on reflection a deep reserve of practical spiritual teaching. The wearing of three layers of grey coat and a woolly hat is a constant theme thought to be as a result of the contrast of the warmth of New Zealand South Island, where he was born, and cold windy and damp Aberdeen. He also had a preference for staying at home and getting on with the important work in hand, so missing important weddings and christenings.

Yet Grange was no hermit. His total commitment to Biodynamics would spill over into daily life when asking for Biodynamic Preparation material and visiting abattoirs and University departments, they would equally be consulted with great respect for their knowledge and interest.

It was Grange's wish upon his death to help Biodynamic Farmers and Growers with purchases of tools and equipment but also, and perhaps more important, to support the attendance at BD Conferences and Study Tours to gain further knowledge and practice. When Mildred died, a generous legacy to The Trust reflecting her deep and strong devotion to the work for what comes out of this narrative is the partnership of this work Grange and Mildred showed even if in different aspects of Anthroposophy.

Thus, today the Grange Kirkcaldy Charitable Trust has been an enormous help to the Biodynamic Movement in The British Isles over the years and is now administered by The Biodynamic Association to which applications for financial help should be sent.

A thoroughly good read and a valuable contributor to Anthroposophical and Biodynamic History putting a lot of biographical information into context for our history is in the end the endeavours of human beings.

(Published privately by William H Milne, 42 Kirk Brae, Cults, Aberdeen, AB15 9QQ)



BDAC launches a new Introduction to Biodynamic Agriculture distance learning course



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This creates a difference between the land and the sea. On land the individual can apply whatever system they wish, whilst any application to utilise the three dimensional world of the sea and its seabed is licensed by a Government Agency. A further difference is that most of what happens at sea is out of sight and, so long as the application delivers money to the Government, is also out of mind.

Marinet has a ten year history. It has developed a library and educational resource on its website, along with a campaigning element to encourage change by Government.

Marinet's educational principles certainly mirror the work being done by the BDA. We share the concepts of following natural solutions to managing resources and ensuring that people are educated towards these ends, whether they be on land or at sea.

Marinet's roots originate with Friends of the Earth, and we spoke on behalf of that organisation on marine issues. Our work took us within OSPAR – the Oslo/Paris Convention for the Protection of the North East Atlantic – where we worked closely with its Secretariat to help deliver the eco-system approach for the organisation. We were thanked by them for our inspiration in these efforts.

Two years ago we parted from FOE in order to concentrate on the development of Marinet which we see as having two wings, separately managed. One wing we have already created and it is focused purely on campaigning on marine issues, whilst the other is at an early stage of conception and will be purely educational.

We have discussed our ideas with executive members of the BDA, and particularly so with regard to the educational side of our work and the need to create a unified vision for the management of the land and the sea.

Once we have created our new educational charitable wing we will seek to develop and explore further possibilities for a joint vision with the BDA, both philosophically and practically. In the meantime, we introduce ourselves and provide greeting to all BDA members.

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Seed

Biodynamic and organic seeds now available from the SEED SHOP on our web site.

Vegetable, flower and herb seeds. Popular, welltried older varieties and new ones that have been bred by biodynamic breeders.

All our seeds are from open pollinating plants, grown by small scale biodynamic and organic growers in the UK, or bought from other seed companies in Europe who also have a local network of growers producing the seeds.

www.seedcooperative.org.uk

Biogynamic and Organic Plant Breeding and Seeds Limited, trading as Seed Co-operative. Registerias under the Co-operative and Community Benefit Societies Act 2014 as a Community Benefit Society, registration number 7013.

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Biodynamic Association vital soil, vital food Revitalising our Earth, one garden at a time

A two-day conference at Ryton Organic Gardens, near Coventry

17-18th September 2016



open pollinated seeds



biodynamic gardening

Packed with hands-on practical advice, workshops, and captivating lectures, our conference this year devotes itself to the biodynamic approach to gardening, and how to take your organic gardening to a new level of well-being and holistic health.

Highlights include:

- The critical importance of open-pollinated seeds
- Seminar from an international biodynamic plant breeder
- Expert advice on biodynamic gardening, 'no dig' gardening, meadow and urban gardening
- How to make biodynamic compost and improve your soil health
- Natural beekeeping

Keynote speakers:

- Tom Petherick Biodynamic Gardener and writer
- Charles Dowding Organic, No dig expert
- Ute Kirchgässer Biodynamic Plant breeder



natural beekeeping

£145 including meals and social evening (BDA members £120) See the full programme at www.biodynamic.org.uk

For more information and to book, contact office@biodynamic.org.uk

Special Share Launch of UK Seed Co-operative

The first of its kind in the UK, your chance to be involved in this new exciting venture. Meet the directors and discover how you can help safeguard the future of our organic and biodynamic seeds.