Star & Furrow

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BACK GARDEN BIODYNAMICS

SEED CO-OPERATIVE

BEES IN PRISON

SOIL AND LIGHT

demeter

Biodynamic Association

vital soil, vital food

THE BIODYNAMIC ASSOCIATION (BDA)

The Association exists in order to support, promote and develop the biodynamic approach to farming, gardening 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 practical 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 biodynamic 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 Association from whom they also source their biodynamic preparations and books.

Biodynamic Certification

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 production 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 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.

Work Based Learning Programme

The Biodynamic Association offers a practical two year apprentice training in biodynamic 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, lodging and training. Their practical tuition is supported 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. Successful graduates will receive a Crossfields Institute Diploma accredited by Edexcel.

Biodynamic Agricultural College

The Biodynamic Agricultural College came out of a long history of biodynamic agriculture education at Emerson College in cooperation with the Biodynamic Association in the UK. It became independent in 2010 and is a limited company with charitable status.

The stated aims of the college are: to provide education in biodynamic agriculture.

At the moment the primary focus of the college is 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

Seed development project

The Association is working to develop a sustainable on-farm plant breeding programme, increase the availability of high quality seed varieties suited to organic growing conditions and encourage the establishment of a cooperative network of biodynamic seed producers. The breeding and development of appropriate site adapted varieties is of vital interest to biodynamic farmers and offers the only long term alternative to biotechnology. It also requires an ongoing research commitment that is entirely dependent on gifts and donations.

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 affiliated as a group of the Anthroposophical Society in Great Britain. It is also a full member of Demeter International, SUSTAIN and IFOAM.

Spiritual Purpose

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 contribution 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.

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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 contributions 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.

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Editorial

Welcome to this bumper summer issue of Star and Furrow. As I write, the days are long and very warm, the hay is being cut, the first vegetables have started to be harvested and the fruit is setting.

The annual theme from the Biodynamic Agricultural Section in Dornach this year is *'The Earth – a Global Garden? Cultivating an Active Relationship to Nature'*. This is the recognition of the garden as a place of work and creativity. In the UK we are blessed by rich and varied landscapes as well as beautiful, classical iconic gardens. Many of our biodynamic gardens and farms also reflect this, where so much care is put into making them beautiful. We kick off the gardening theme with a very inspiring and practical article by Rachael O'Kelly on backyard gardening. It is in our smaller gardens and allotments where big changes can take place.

The 'Year of the Soil' is still creating and inspiring a lot of activity and interest. We have more contributions to the theme in this issue, deepening what biodynamics brings to the subject. At the Demeter International Members Assembly in Egypt an afternoon conference was arranged to look at soil within the Egyptian and global context. There it was proclaimed that 'soil doesn't have a voice' so the conference was arranged to amend that. 90% of Egypt is desert leaving a population of 82 million *(and increasing by 1.6% p.a.)* to live on an area less than half the size of the UK. The only sustainable way forward is through organic and especially biodynamic agriculture. After all the presentations had been given outlining clear benefits that organic/biodynamic farming has to offer, Helmy Abouleish said 'we have now heard all the evidence that biodynamics is effective. What is stopping us getting on with it?' Indeed!

On page 36 is a very poignant image of a prisoner at Rye Hill Open prison contemplating a flower. This is the followed by a moving article describing the introduction of bee keeping into a prison context and the effect this has on the prisoners. Well done to the Natural Beekeeping Trust for this wonderful initiative.

Finally, I would like to extend a very warm welcome to our Irish colleagues. They have been receiving Star and Furrow for some years now and now we have the opportunity to read about some of their pioneering work on the Emerald Isle. The intention is to give over a regular space to hear how things develop and unfold. Céad míle fáilte!

Richard Swann

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© Peter Brown

FROM THE DIRECTOR OF THE BDA

Peter Brown

The Biodynamic Association has started planning another large conference for the late autumn of 2016. It is going to be based on the theme of next February's conference in Dornach, which is 'The Earth – a Global Garden? Cultivating an Active Relationship to Nature'. The theme of a garden, also in the context of a large farm, is fascinating and I would strongly recommend reading the piece on this theme, which is on our website http://www.biodynamic.org.uk/about-bda/biodynamics-worldwide/annual-theme-of-the-biodynamic-sect

In the meanwhile I would like to draw your attention to an event happening this autumn on the 23rd – 26th October up in Hebden Bridge in Yorkshire. It is the UK Food Sovereignty Gathering and I think it will be an important event and I would like to explain why.

The Food Sovereignty movement has been growing strongly in the last years worldwide, as has the term agroecology and what it stands for. It was a delight for me to read the **Declaration of the International Forum for Agroecology** which was the result of a meeting in Nyéléni, Mali on 27 February 2015. (http://www.foodsovereignty.org/forum-agroecology-nyeleni-2015). The reason is that everything resonates strongly within me. As it says '*Together, the diverse constituencies our organizations represent produce some 70% of the food consumed by humanity. They are the primary global investors in agriculture, as well as the primary providers of jobs and livelihoods in the world.' 'They' are not representatives of corporate/industrial farming but of small-scale food producers and consumers, including peasants, indigenous peoples and communities (including hunter and gatherers), family farmers, rural workers, herders and pastoralists, fisherfolk and urban people. They see 'Agroecology as the answer to how to transform and repair our material reality in a food system and rural world that has been devastated by industrial food production and its so-called Green and Blue Revolutions. We see agroecology as a key form of resistance to an economic system that puts profit before life'.*

Putting profit before life, before our environment and human health is of course what is so prevalent today, especially in Britain and America. I am therefore very heartened to see a growing awakening and interest in the world and here in Britain too, particularly in the young. Having attended the Oxford Real Farming Conference over the last years the growing number of young people and woman attending every year is striking, and they need encouraging further. The Agroecology and Food Sovereignty movement is not specifically about promoting organic farming methods as the only alternative to what industrial farming and corporate power are doing but about acknowledging the broader picture and the realisation that society, growers and customers have to change and get involved to sort the problem.

Biodynamics recognises that people are central to everything and has therefore been at the forefront of pioneering Community Supported Agriculture, care farming, apprenticeship training and much more. I feel we have to help and support the Food Sovereignty movement, as no doubt biodynamics has an important part to play, together with other people and organisations, in helping realise an agriculture which is not dependent on industrial inputs and which aligns itself so well with the different pillars of agroecology as described in the declaration. Please look at http://foodsovereigntynow.org.uk for information about the gathering etc.

The fact that this year was declared the UN International Year of Soils is in recognition that the world's soils are deteriorating at a frightening rate and it is an attempt to draw attention to their importance and that something has to be done about it. The BDA has run two very interesting workshops on soil so far this year and we are going to be co-hosting the **'Growing soil' day on 1st August at the Soil Culture event at Bristol's Create centre**. The event, taking place through July and August, is being heralded as the UK's leading response to the UN International Year of Soils. The theme for the day we are involved in is **Experiences and skills to care for and restore living soils**. All are welcome to come and see the exhibitions and hear talks from the BDA, the Permaculture Association, the Centre for Agroecology, Water and Resilience and others throughout the day, it's free. You can find out more on page 9 of this issue with updates being made available on the BDA website, https://www.bristol2015.co.uk/events/create-centre-soil/ and touchstonecollaborations.com.

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BACK GARDEN BIODYNAMICS

nourishing the soul of the soil and the soil of the soul

by Rachael O'Kelly

This year's theme from the Goetheanum Agriculture section looks at the garden as a unique and individual place and recognises that the beauty gardens radiate offers a healing landscape across the globe. We are a nation of gardeners but can biodynamic agriculture actually work on a back garden or allotment scale?

Well, the short answer is yes! It can be easy when we read about 'farm organisms', 'planting calendars' and 'biodynamic preparations' to think *'that doesn't apply to me'* or *'I just don't have time'* and it can feel like a daunting task to get started but the principles underlying biodynamics are fundamental to all of us if we are to contribute to the Earth's regeneration rather than just plundering its almost exhausted resources.

I had the privilege of being part of establishing, growing and running a biodynamic market and teaching garden in the Forest of Dean. The ASHA Centre is a 4.5 acre site with orchards, fruit and vegetable gardens, a stream, flower gardens, meadow and surrounded by woodland. An idyllic setting where I was able to immerse myself in the rhythm of biodynamics on a daily basis, living and breathing every aspect of it. So, when I left that role to have my son over 2 years ago my passion for biodynamics hadn't disappeared but my time, space and energy to garden was severely limited! This new reality has taken me on a journey of discovery to see whether biodynamics can fit into a busy daily schedule, how it can be applied to small scale vegetable and fruit growing and what resources are available to make this possible.

Put very simply, when Rudolf Steiner gave his lectures containing indications for farmers on how to progress into the future of agriculture it was in answer to questions about soil fertility, seed viability and animal husbandry which were already becoming a problem. He spoke about the question of agriculture being a question of nutrition, that the food being produced was failing to nourish the spirit.

'Nutrition as it is to-day does not supply the strength necessary for manifesting the spirit in physical life. A bridge can no longer be built from thinking to will and action. Food plants no longer contain the forces people need to do this.'[1]

He spoke about preserving organic gardening and farming practices that use no chemicals what so ever but use certain 'substances' on the land to effectively give back more than you take, to enable the farm and everything in it to become more sentient and connected in order to facilitate this manifestation of the spirit in human beings and to regenerate the Earth. These substances, known now as the biodynamic preparations, when used in conjunction with cosmic rhythms (the planting calendar) help to create a farm organism that produces what it needs to balance and grow healthy and vital plants, animals and people.

'The benefits of biodynamic compost preparations should be made available as quickly as possible to the largest possible areas of the entire earth for the earth's healing'[2]

THE BIODYNAMIC PREPARATIONS

2015 is the International Year of the Soil and with mainstream reports citing research[3] suggesting that Britain may have less than 100 harvests left before we have fully depleted our soils, biodynamics has never been more pertinent. The biodynamic preparations strengthen, enliven, sensitise, enrich and support the soil, plants and animals within a farm or garden. The application of these preparations is a conscious act of will by the farmers and growers that steward that land. This is one area that people can find quite inaccessible in biodynamics, as it can seem very mysterious and the results initially intangible. Firstly, understanding how the biodynamic preparations work involves trusting, trying and testing. Ultimately it requires you to actively develop your relationship to them over time. This journey will reveal improved soil structure and microbiology, stronger and healthier plants, resilient animals and greater sensitivity to name but a few benefits. The preparations also take time to administer and this is probably the toughest bit

All photos © Rachael O'Kelly except where marked

for someone with a tight schedule to work with. But horn manure and horn silica do not need to be sprayed often and if you are able to make a social event out of the stirring and spraying you will find that the riches it brings far outweighs the time you give. This, for me, is one of the greatest gifts of biodynamics; that the time and consciousness you put in, is your gift to the land and in exchange your garden or farm responds with stronger plants, more nutritious food, and balanced ecosystems.

THE PLANTING CALENDAR

When people talk about the planting calendar they are talking about a body of work that has been built up out of research in the years since Steiner gave his lectures. There are several different calendars, but the basis of them all is to look at the cosmic rhythms (usually with particular emphasis on the movement of the moon, sun and planets through the zodiac) and their effect on plant growth. The reader will then be provided with directions as to when it is best to work with what plants. Basically these researchers have done the hard work for you! Maria Thun[4] was one such researcher who developed a calendar out of 50 years of research and her son now continues her work. The basic premise is that the zodiac constellations in the cosmos exert an effect on plant growth and as the moon, sun and planets move around the earth they cross between a specific constellation and the earth. Each constellation has a classic element associated with it (earth, fire, air and water). In essence, what Maria Thun found was that when the moon passed in front of a constellation in a water element for example it had an effect on the leafy growth of plants, when it passed a constellation in a fire element the fruiting parts of the plants were influenced. She showed that by identifying the part of the plant you want to harvest (i.e. leaf of a lettuce or root of a carrot) and working with those plants when the moon was in a corresponding constellation/element (water for leaf, earth for root) you could enhance the quality, vitality and properties of that part of the plant. This extends even into colour of flower and storage properties and enriches the interconnectedness of all things.

When you are able to garden every day, the planting calendar can act as a wonderful guide to work with, but I meet many people who are inspired and interested in the idea of gardening in relation to the natural rhythms but who are either terrified of 'getting it wrong' or just don't see how it can actually fit into a busy schedule. But it should be noted that the planting calendar is not written in stone, it is never superseded by weather or necessity. If you can't work on a certain day because you have other commitments, do it when you can and realise that there will be many times in the future when you will be able to use the calendar. Biodynamics has few sets of rules, rather it is a space in which to develop your own and your garden's sensitivity, and a place to enjoy the wonder of the rhythms of nature and the cosmos.

THE FARM ORGANISM

The concept of the farm organism is fundamental to biodynamics; the idea that each farm is a self-sustaining entity without the need for external inputs, a place where the cycles of the plants, animals, soils, and wildlife all grow together over time until biodiversity and ecosystems, rhythms and practices inform each other and provide answers for all the problems that may come their way. But how can a small back garden possibly be a 'farm organism'? Where are the animals? Having no external inputs is largely impossible. Well here again comes the gift that biodynamics is nothing if not adaptable. The farm organism is an ideal that we can all strive for, but the fact that we can't achieve it fully does not exclude us from practising biodynamic techniques to the best of our ability. In the striving for this comes learning, a greater empathy and understanding for our small patch of earth and a realisation that the more and more of us that use the preparations, recognise the rhythms, support our soils and consciously work with the idea that we're are all connected and sentient, the more healing our global garden can become.

SO WHAT DOES THIS MEAN IN PRACTISE?

Get together:

Stirring the biodynamic preparations for one hour on your own when you have a busy life usually means you won't do it (especially if you have a small child throwing toys in to the bucket as you do it!) But applying the preparations is one of the most valuable gifts you could give your garden and the universe.

■ Contact your regional group, find people near you who are also interested in biodynamics and suddenly you can share the task. The only way I am able to spray the preparations on my land is because I have wonderful friends to do this with (who even do it for me), everyone takes a little home to spray on their garden or allotment and my son doesn't get neglected!

■ Make a day of it – gather a few people together in the autumn time, make horn manure preparation, bury it, do a stir and a spray, bring a soup and suddenly you have a harvest festival!

Encouraging ecosystems:

■ Gardens by their nature are generally very diverse but think about how you can make even more of your space. Add a bucket pond, insect houses, encourage beneficial predators. A baby blue tit will eat over 300 aphids or 100 caterpillars a day[5]! Hang a bird feeder in your garden with a little (but not enough) food and you will find that the birds will search out more food (like aphids) close by, provided you also have shelter belts, if you don't maybe you can find space for a shrub or two!

Find your rhythm:

■ Using the planting calendar doesn't have to be a limiting, binding exercise. On the contrary, I find it helps me focus on the most important tasks. Sow, transplant, hoe, tend and harvest your plants according to the calendar when you can and you will find that it will give you a real sense of working in harmony with the greater whole.

Photo © Ella Hashemi

Consider your compost:

Using the biodynamic preparations in your compost heap is still possible in a small space. The ideal is to have an open heap that you can build with layers of garden and kitchen waste gathered over time and then add the preparations when you build the heap but most of us just don't have the space to do this, I certainly don't. There are no straight forward answers, it is for you to discover what works for you but here are some suggestions:-

I use a compost bin (I am planning to change to a wooden pallet structure soon), open at the bottom and I just keep adding my waste to it but I make sure I include carboniferous waste in layers too – more substantial stick-like garden waste cut up small, plain cardboard etc. The way I add the preparations is to water my compost with CPP[6] or barrel compost which is a preparation that has been made using all 6 compost preparations. Once it is full I leave it and start a second bin. You can also use Mausdorf starter[7].

You could buy organic compost, heap it and add the compost preps to this.

If you really cannot make compost you could use Cow Pat Pit as a spray on your garden which will apply the compost preparations to your land without the need for adding it to compost.

All of these are compromises but all enable you to become active in working with your soil and garden on another level into the future.

Stop, look, listen, breathe, enjoy:

'The best fertilizer is the farmer's footprint'

One of the first things I was taught by my mentor during my biodynamic apprenticeship was to walk around the garden without looking for anything in particular. Over time, as you do this you will find you are drawn to stop in a certain space, look at a certain plant or notice a patch of soil. You may then find you notice that aphids are on the tips of your broad beans or that a fruit bush is not doing so well. This is actually one of the hardest things to do as, when you are short of time you always just want to get on immediately, but if you can do it, you will find that you will enter into a communication with your garden that will continually teach you things and it is such a joy. Nobody knows or will come to know your garden better than you do as you work with it over time and you will become the greatest facilitator. As this happens the preparations, the cosmic rhythms, the compost making will weave together into your practice creating a true garden individuality.

At a recent lecture on Quantum Agriculture at CWAR[8] one of the things that was mentioned was that whilst we know that plant growth can respond remarkably to love being given to the plant by the person that tends them, more recent research suggests that gratitude for the plant has an even greater enhancing effect on plant growth. What better reason to take your cup of tea to the garden in the morning like my mum does and be thankful for this beautiful world we are part of?

The gift of biodynamics for me is that we are working to create a garden that is an individuality but at the same time, through the use of preparations and cosmic rhythms we are connecting with all the other farmers and gardeners around the world that are doing the same, co-creating a web of consciousness and sensitivity that speaks to nature and the universe and says we are here to work, listen, share, protect and grow with you into a more sustainable future – what a blessing it that?

Rachael is a mother, biodynamic gardener and BDA Council member

1 'Agriculture course The Birth of the Biodynamic Method' Eight lectures by Rudolf Steiner Translated by G Adams
2 As above
3 www.independent.co.uk Adam Withnall Monday 20 October 2014
4 The Maria Thun Biodynamic Calendar
5 http://www.bto.org/volunteer-surveys/nbc/blue-tit-blog
6 Cow Pat Pit is available from the BDA website
7 See above
8 Henk Kleft speaking at CAWR – Centre for Agro-ecology, Water and Resilience, part of Coventry University

Soil and light as a focus for biodynamics

by Richard Thornton Smith

I should like first to consider how biodynamics is received by the world at large. Although popularised to a degree by the wine industry, the image of the cow horns, animal parts and, of course, 'planting by the moon' is enduring, and one may wish to blame those who unjustly regard biodynamics as a cult. Yet whose fault is it that this has come about?

The fact that our movement originates from one person need not of itself lead to cultism. What does, is an inability to communicate the aims of biodynamics in topical and coherent, if not always persuasive terms. For this reason the preparations appear as a kind of cart which has been placed before the horse! The fact that we all have our own rather precious picture of biodynamics is not a risk factor in itself – but we need to think more outside the box.

So let us consider some approaches to helping others who have common ground with us. In the first place we are a movement which aims to promote a true sustainability of farming practice based around the concept of a farm organism. And while our movement strictly began before the wider 'organic' movement, we are grounded in what may be termed organic principles. We are passionate about supporting our Mother Earth at a time of unparalleled environmental stress, and we are dedicated to producing food of the highest quality based on a comprehensive knowledge of the human being. Readers may well wish to pile on more at this point!

Most members of the public and all who truly identify with the eco-movement will surely still be 'on board'. This represents a first step. We then need to be able to say what gives us the ability – authority perhaps – to tackle these questions in a way which is distinctive from other movements. This is, of course, our recognition of the primary role of cosmic influences on life processes. Such a world view was held by all cultures from which the modern world has developed and it was only sidelined with the modern rise of rationalism. Biodynamics aims to work with and strengthen these cosmic relationships. All biodynamic practices have a place in this context.

Something in particular seems to me to provide a continuous thread through our work with biodynamics. This is the study of light from the cosmos – which we receive from the sun and to a lesser extent from the moon and other celestial bodies. Here, when sunlight is mentioned, I include the reflected light of the moon.

UNDERSTANDING THE ORIGINS OF LIGHT

First we need to realise that there is more to light than illumination! It is clearly fundamental to life – and to the human being – on both physical and spiritual levels. For more than a handful of writers, wisdom and inspiration abide in light. If we are prepared to look beyond the earth, so much can be revealed – that the human being is formed out of the cosmos – that the sun (in reality beings of light) gathers cosmic formative energies (ethers) and shines them into the physical earth sphere. It is the daily and seasonal experience of this by the earth which constitutes the breathing process fundamental to plant growth and which is fully utilised in biodynamic practice. A scatter of cultures still recognise this essential interplay of earth and cosmos as 'Mother Earth and Father Sky' while in a number of mythologies it remains veiled. The loss of any notion of the earth and cosmos being connected surely underlies much of the abuse of our planet in recent times.

As we begin to understand the nature of the sun – very different from orthodox astrophysical assumptions – we should note that on our annual orbit, its quality changes monthly according to which constellation it lies in front of. Further, this sun light is mediated by the inner and outer planets. Taken together, these statements of Rudolf Steiner indicate not only that the sun gathers from the zodiac, essences or forces from the surrounding universe, but that these – let us call them cosmic thoughts – are woven within the various planetary spheres – yes spheres as early astronomers realised, not the actual planets. It is as if cosmic *tones* become a *rhythm* within the solar system – a rhythm recognised in Ayurvedic tradition and which has been experienced in certain esoteric schools (e.g. that of Pythagoras) as the 'harmony of the spheres'. It is surely not by chance that to support our existence we have the symbolism of alternate days of the week reflecting a balanced working of the planets.

These planetary influences, ultimately deriving from wider cosmic light, work into our bodies from the outside – as cosmic nutrition (think of chakra points and their close association with our endocrine glands) – as indeed they do into the plants and animals we raise on our farms. Steiner explained that the *inner planets* have more to do with processes which build and regenerate the physical organism while the *outer planets* – closer to the cosmos and its primary

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inspiration – have to do with qualitative aspects; sensory capacities and form-creating processes. The latter not only encompass the innumerable forms of organic life but include those elementary conditions recognised by the ancients as fundamental to life on the physical plane: warmth (heat), air (gas), water (liquids) and earth (solids). These conditions, which evolved over aeons of time, are maintained by particular groups of spiritual beings in the universe. So let us always be reminded – *'there can be no matter without spirit'*.

LIGHT ENERGY AND THE PLANT

Only a narrow portion of the solar spectrum participates in photosynthesis. Here, the sun's energy is fixed as chemical energy via chlorophyll-bearing tissues. We may also refer to this as a form of *cosmic nutrition*. In the plant, carbohydrate sugars are thus passed to all cells where this chemical form of energy can again be released by processes within mitochondria (the Krebs cycle). This we otherwise call respiration, where, the energy is utilised for cell development and root elongation. In this process of energy release, phosphorus – traditionally the 'light bearer' plays a crucial role in ATP. In recent years scientists (Popp, Bischoff and others) have discovered that living cells give off minute quantities of light energy (photons) while Steiner referred to plants releasing 'light' into the soil at the end of a growing season, giving inspiration to a hidden world of elemental beings. Possible sources of this would be the decomposition of cellulose, mitochondria and DNA.

The above are processes which start within the chloroplast and represent an activity mediated by the inner planets. Venus, for example, is associated with nutrition while Mercury is associated with movement. On the other hand we must consider the *forms* which arise in the course of photosynthesis – the differences in plant morphology on one level, and the structural characteristics of substances which form them, on the other. If photosynthesis represents the builder, this other, connected with the outer planets, represents the architect. If we simply examine the molecular level, we see the plant chemistry dominated by polysaccharides (cellulose for example) having a hexagonal arrangement of mainly carbon atoms as their framework. This is also to be found in the honeycomb and in the lenses of insect eyes. So could these six-sided or hexagonal forms be a signature for the formative aspect of light?

LIGHT AND THE LIVING SOIL

This complex of invisible formative energy carried by light and mediated by the outer planets is able to penetrate the soil, drawn in by the presence of silica. Gaelic speakers refer to quartz as a'chrian clach or 'stone of the sun'. Steiner spoke about silica as being cosmically-sensitive, so is it the hexagonal symmetry of its crystal which acts as the perfect vessel to receive these outer forces?

Just as this cosmic light energy must not be thought of as physical, so we must not think of soil as a collection of purely physical substances. These outer energies encounter the soil's own invisible life forces derived from plants and other living organisms, as well as residual life from decayed material.

In this context we should reflect on why biodynamic treatment of compost adds something special. The simplest point I would make about compost preparations is that they as a group – together with the addition of a liming material of some kind – which enable life forces in the compost to be better retained (and less nitrogen lost), thus enabling the compost to promote optimal plant growth.

In the agriculture lectures of Steiner we read of the importance of generating a 'living soil'. This may be interpreted in different ways but I believe that here, we are close to his meaning. This 'life essence' is, of course, concentrated

Grinding silica for Preparation 501

in the topsoil where humus is intimately associated with alumino-silicate minerals, better known as clays. The peculiar surface chemistry of humus and clay explains why this is also where the bulk of plant-available mineral nutrient is to be found.

And surprising as it may be, we should recognise that oxygen – a key part of silica and clay minerals – is the physical carrier of life forces in plants and animals. Oxygen atoms will account for at least 90% of the volume of soil solids, let alone the air in all the soil cracks and pores! It is therefore not into a mass of dirt, but into this crucible of life activity, that outer cosmic forces enter.

STORAGE AND USE OF LIGHT ENERGY

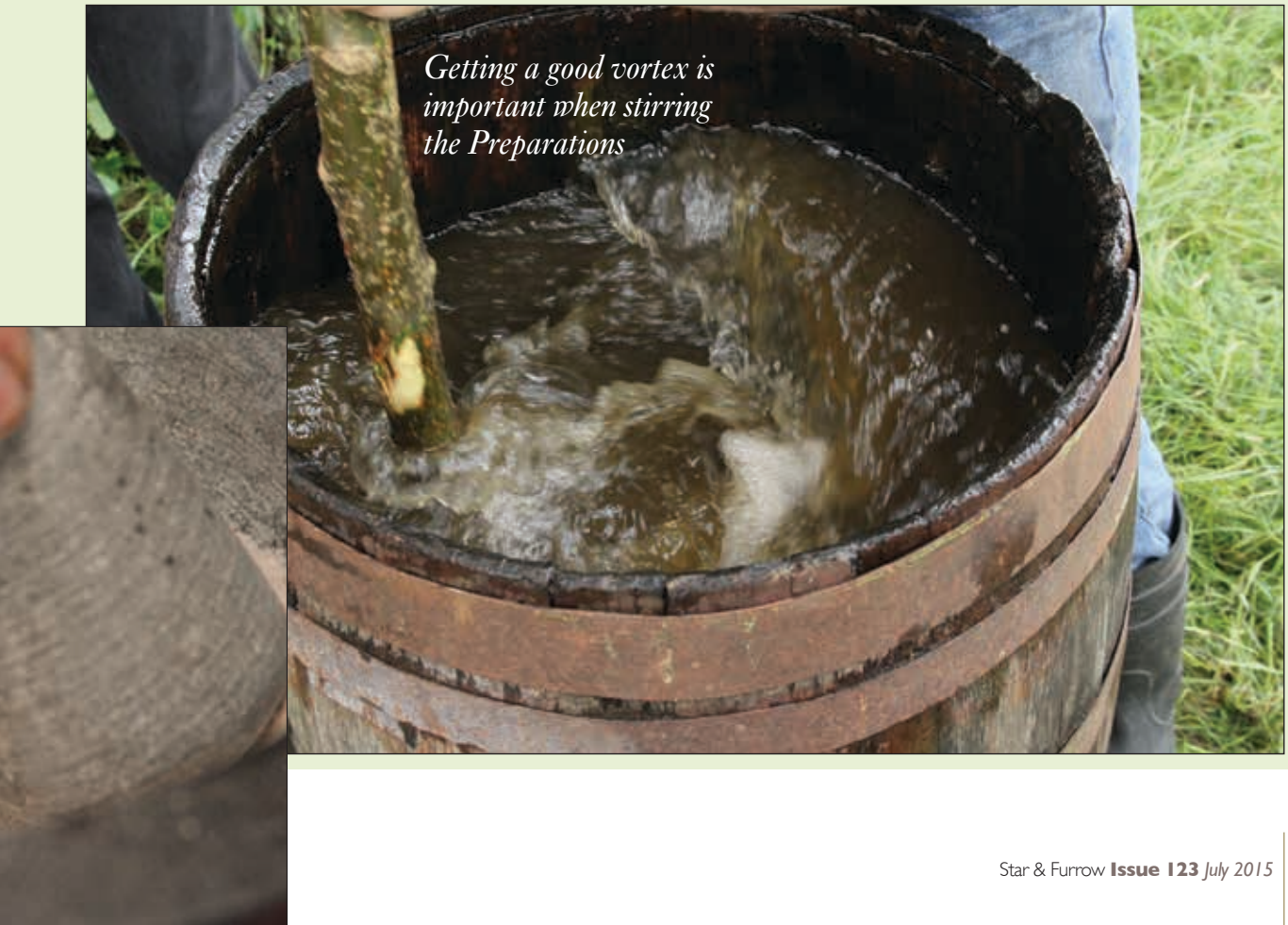
It now becomes a question of how these energies are retained in the soil and made use of by the plant. As a starter, we must understand that clays and humus contain large amounts of internal space in their layered structures. The silica of clays forms hexagonal nets with oxygen atoms, while humus molecules, also three-dimensional, form from the breakdown of cellulose and proteins and their recombination into stable structures based on a hexagonal carbon framework.

Steiner spoke about clay being connected to a 'cosmic upward stream' from soil to plant. From this we presume that clay plays a key role in the retention and transfer of these energies. He also spoke with amazing perception about the activities of earth elementals, as has Susan Raven, while in a remarkable passage by Verena von Holstein we read of these entities actually gathering cosmic energies into the framework of minerals – in other words these very considerable internal spaces.

If such a process is to be imagined, then one has also to visualise the effects of this gathered energy on the chemical elements (ions) held tenuously around particle surfaces (as in cation exchange). Are we to think that these may be energised – dare we say inspired or enchanted – by such contact? For the soil, what could be a more significant alchemical action than this? And how do the biodynamic compost preparations relate to this? Part of their role is to increase the sensitivity of plant and soil to cosmic influences, to strengthen planetary connections and the mutual interactions of elements.

So to complete this picture, it is essential to consider again the breathing rhythm of the earth organism. Cosmic light energy is drawn in each day and most intensely in summer. The soil is thus a crucible in which an extraordinary alchemical process is at work on a diurnal and seasonal basis. Energy is drawn into the structures of humus and clay where it is able to bathe nutrients, all of which have distinctive roles to play in the plant – indeed, all life processes. It is a high probability that through engagement with archetypal light energy, the electrons of these nutrient ions will have their spins raised in quantum energy level through absorbing the equivalent of a photon of light. By having a distinct biography these nutrient ions will exhibit a different *quality* from those deriving from NPK fertilizer. With the arrival of morning growth associated with the out-breathing process, these substances will be carried into the plant where they will arguably have greater capacity to serve the respective nutrient processes.

Regarding storage of light energy in the soil it may be of interest to note that in his nutrition lectures Steiner spoke of the importance of root vegetables in connection with light – and as a source of minerals to support our brain function. One in particular, the Chinese yam, was said to be of particular value and has recently received much attention.



Getting a good vortex is important when stirring the Preparations

Horn Manure Preparation (500) being buried in the autumn

All Photos © Richard Swann

RELATIONSHIP OF LIGHT TO THE SPRAY PREPARATIONS

A word can now be offered about biodynamic horn manure. In autumn we collect the cow dung and place inside a cow's horn. After burial in the soil, the powerful life energies of the cow are augmented with intensified energies inbreathed by the earth over winter. This, as Steiner stated, creates a 'concentrated manuring force'. From what has already been said, we can better appreciate the realm in which this preparation operates and just why it is so effective. It provides highly concentrated life energy to the soil and will therefore help soil retain more incoming light energy, thus achieving better rooting without having to rely on compost alone.

And the horn silica? This represents a concentration of the forces contained within sunlight. Yes, but significantly the silica horn is *buried* in the summertime emphasising that it collects those solar-outer planetary forces which penetrate the earth. This under-exploited preparation supports the nutrition of plants by inspiring the chemical substances with their archetypal energy and this is no doubt the reason why it has been advocated to assist the vegetative growth stages. It provides strong opposition to the earth and water elements which predominate in cool and moist spells and, for soils lacking adequate clay or humus (i.e. those with limited capacity to retain light forces) it would appear to be an absolutely essential support for the biodynamic farmer and grower.

Another question relates to the stirring of these preparations. When we create a vortex or use a Flowform system for this purpose, we are in fact energising the water and making it more receptive for absorbing the energies of the preparation. As part of this process cosmic light energy will be absorbed by the water.

NUTRITION AS THE PURPOSE OF OUR ENDEAVOURS

The overall message from the above is that light – and by inference, our food – not only supports our metabolic activity but reaches into the formative aspects of our organs. Each of these has an impact on bodily vitality. If successive generations of us abuse our physical organism with inappropriate food or diet we will no longer be able to guarantee that 'cosmic nutrition' finds its way into our bodies. The increasing rates of hospital referral for food allergies, obesity and other illnesses suggest that this situation is already with us.

Steiner commented that our food should also feed our higher spiritual faculties and was aware even 100 years ago that it did not! For a combination of reasons, it is therefore urgent that we redouble our enquiries into the quality of plant and animal products deriving from alternative systems of farming – and food processing.

Regarding the question of 'vital quality' in food we already have the evidence of flavour, keeping quality and different health benefits which accompany diets based around organic and biodynamic produce. The current body of bio-photon research, from the 1970s, shows a distinction in what it refers to as 'cell coherence' between such produce and that grown by non-organic methods. It also shows similar contrasts between fresh and stale food, between raw and cooked foods, and between healthy and cancerous cells. Many will be more familiar with the chromatographic paper and crystallisation methods which have been used by biodynamic researchers since the 1930s showing similar comparative results in a visual way.

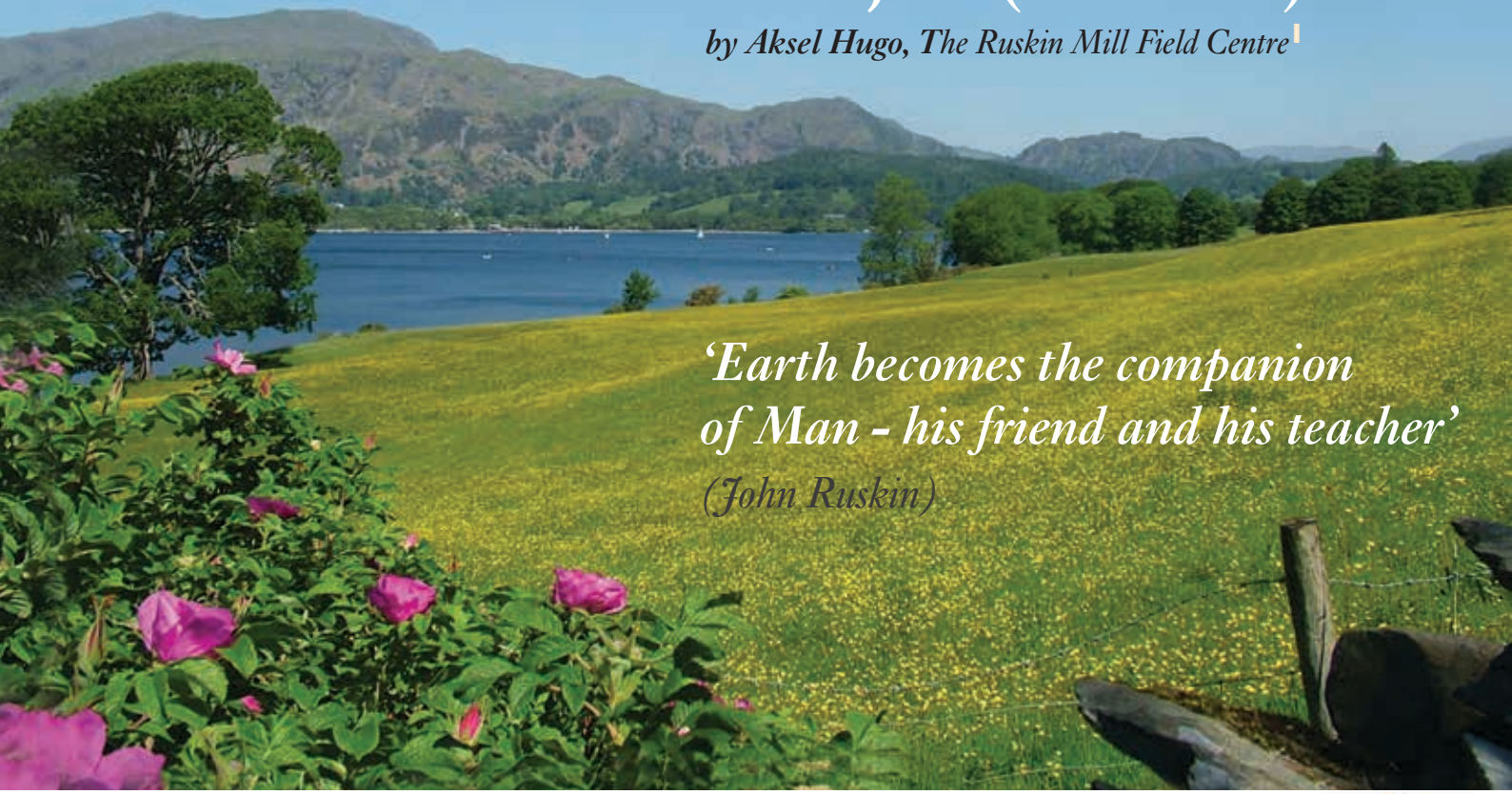
So to conclude; for biodynamic practitioners on whatever scale, the foregoing could enable us to see how our biodynamic work, both personal and practical, finds rejuvenation around a central theme – that of *maximising the delivery of light into our nutrition.* Might this also help communicate the biodynamic message to a wider public?

Richard works for BDA Certification as an inspector. He is author of Cosmos, Earth and Nutrition.

MEASURES AND MEDIATIONS OF CONNECTIVITY

Brantwood Soil Life Project (2007–14)

by Aksel Hugo, The Ruskin Mill Field Centre[1]



John Ruskin offered us the option to see Nature through many different portals and to leave our observations perhaps by a very different route from where we began. He created, in his Brantwood land, a living laboratory of ideas and possibilities, of practical garden projects and aesthetic dreams. These are the inspirations that guided the inception of a research project in Brantwood's fields today. Art, science and practical husbandry have begun to reunite our understanding of the natural world in this pioneering piece of work.

Born of a recognition of the distancing of Nature from Humanity that runs as a common concern through the thoughts of Goethe, Ruskin and Steiner, Sally Beamish (Estate manager) attended a biodynamic forestry week-end at Ruskin Mill, Nailsworth in 2005, and was accompanied by her colleague, Ellie Sinclair, to the first Northern biodynamic week-end at Freeman College, Sheffield in 2007. These events inspired them to learn more about biodynamic land management and to explore how it might resonate with the Ruskinian principles that are – at the foundation of what informs the future of the Brantwood Estate. One fundamental truth is that soil health is key to the health of all living things – Ruskin reminds us that *'the soil can in no-wise dissemble'*. This was chosen as the focus for an investigation into the values of biodynamic agriculture in upland areas. With the advice and sponsorship of Ruskin Mill Educational Trust, the Brantwood Soil Life Project was set up in Autumn 2007.

Situated in the Lake District, on the shores of Coniston Water, at the western edge of the 250 acre (100 hectare) Brantwood estate, the Brantwood Haymeadow is roughly rectangular in shape. 10 acres (4 hectares) in size, its long axis orientates north-south along part of the Estate's lake frontage. Carrying permanent pasture, the land slopes in an undulating manner down from the roadside wall to the lake. In order to study and compare the potential values of biodynamic pasture management, the northern field (A) continued to be managed using conventional modern agricultural methods with annual applications of artificial fertilizer. The southern field was divided in half, each area 2 acres (0.8 hectare) in size. Management of the southern half of this area (C) continued as before, with an annual dressing of farmyard manure. The rest of this field (B) having, in addition, the biodynamic preparations BD500- BD508 applied across it several times a year.

During the project, three different methods were used for recording changes within the soil life of the Meadow:

A	Biochemical and physical analysis of soil samples
B	Chromatographic analysis of soil samples (round paper chromatography)
C	An observational technique derived from Goethe's 'spiritual science', involving close study and intuitive connection with meadow areas and turf samples, recorded through words and drawing exercises.

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The project ran for the 7 years from November 2007-2014. My role has been to accompany the last phase of the project, in close collaboration with Sally Beamish and Louise Moss, who has undertaken the analysis of a large amount of complex data. This article gives a brief summary of key results. A full report will be published this summer and a public presentation will be made coming autumn.

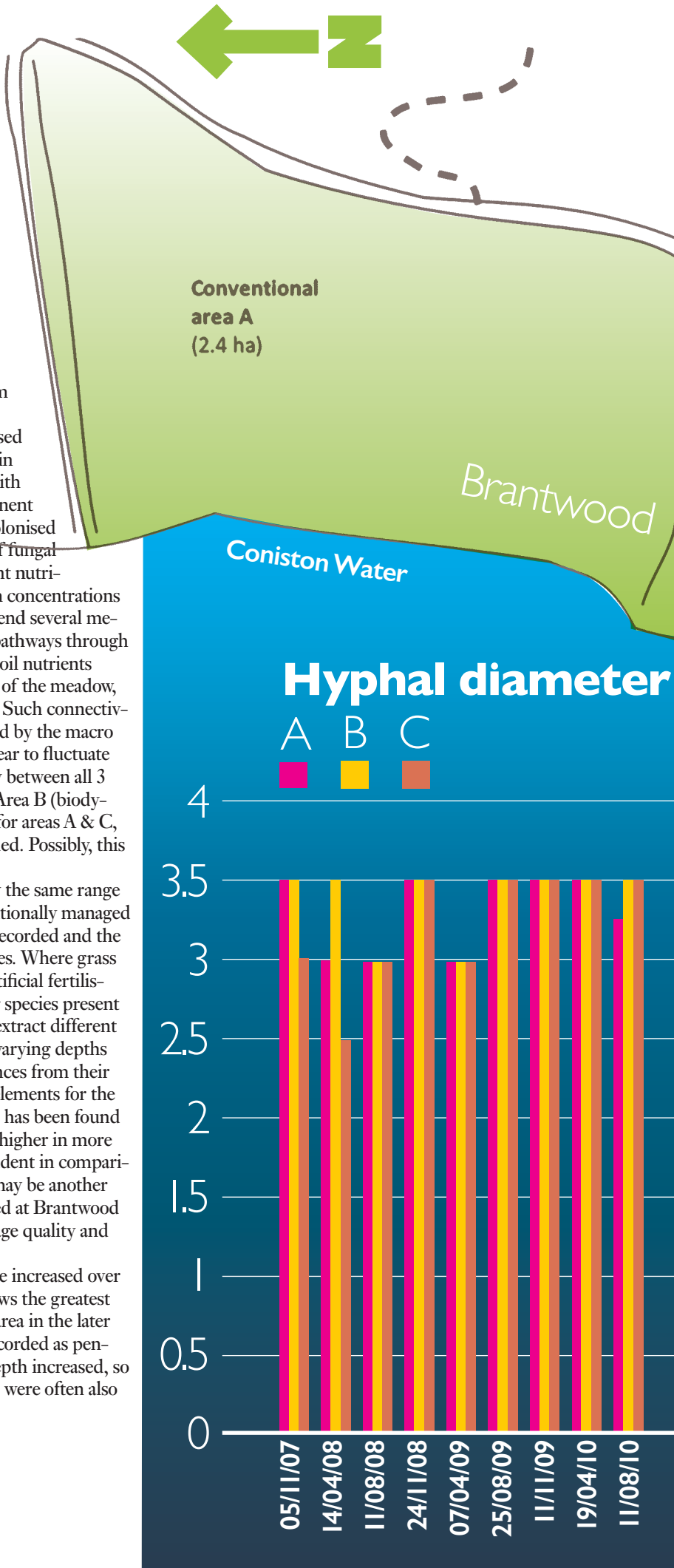
KEY RESULTS

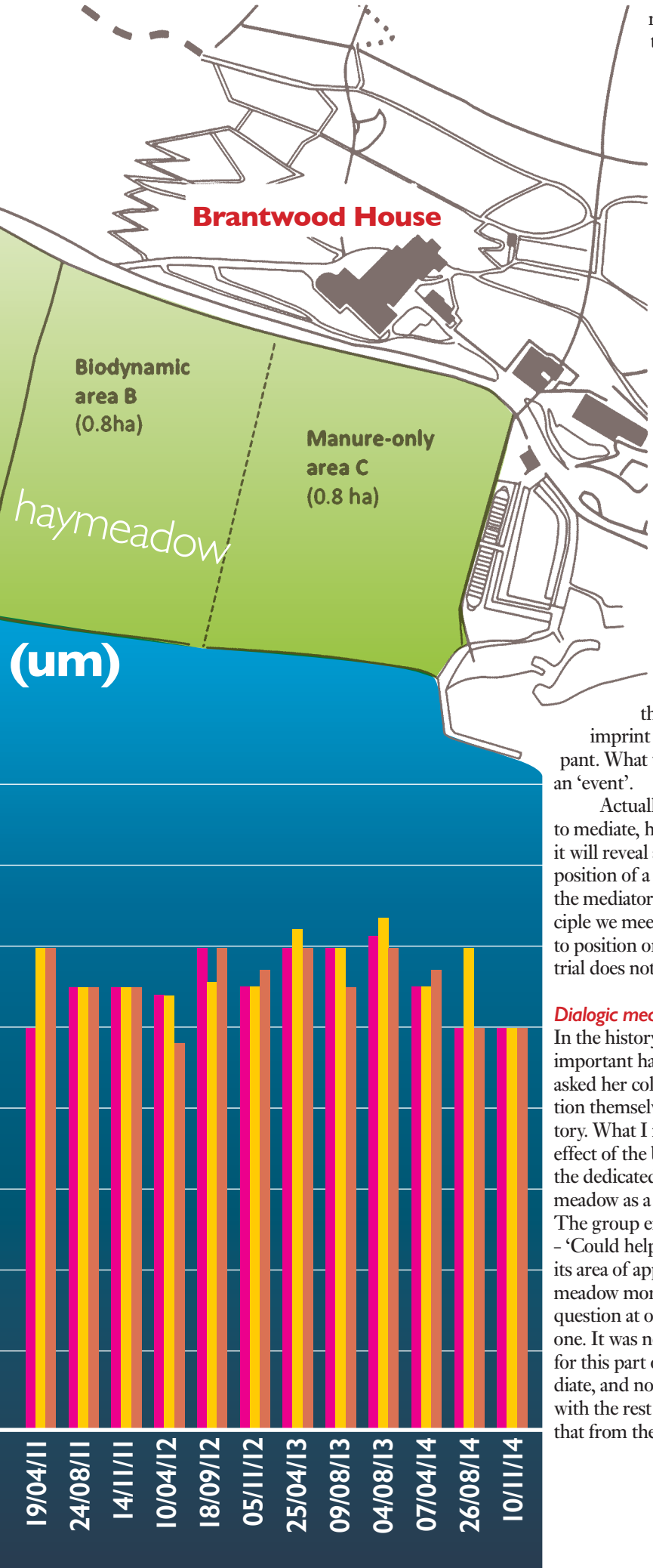
Material measures of connectivity (body)

In the soil test data, differences have been recorded between the three areas right from the start of the project. These differences, however, often seem to vary in a synchronised way. The chromatography recording gives in many ways a similar picture. Particularly with well established habitats such as old permanent pastures like this one, the plant roots are colonised by, and connected together by a vast web of fungal hyphae which enable carbon and other plant nutrients to be transported from areas with high concentrations of to those with low levels. Hyphae can extend several metres in length, and thus provide extensive pathways through the soil. Therefore some of the additional soil nutrients provided will be transported to other areas of the meadow, which will inevitably also affect the results. Such connectivity between separate areas may be suggested by the macro and micro-nutrient records. Variations appear to fluctuate through time in a largely synchronised way between all 3 meadow areas. For all trace element levels Area B (biodynamic) figures generally lie between those for areas A & C, and it is very rarely the highest level recorded. Possibly, this suggest a mediating role.

Although all three areas have broadly the same range of wildflower and grass species; the conventionally managed area (A) has the lowest number of species recorded and the lowest abundance of most wildflower species. Where grass growth is encouraged by the addition of artificial fertilisers, the abundance and range of wildflower species present declines. Different herb and grass species extract different amounts/combinations of nutrients from varying depths of the soil and also exude beneficial substances from their roots. This provides a wide range of trace elements for the benefit of the herbage and grazing stock. It has been found that uptake of micro-nutrients is generally higher in more species-rich pastures and is particularly evident in comparison to a mono-culture rye-grass ley. This may be another reason why levels of trace element measured at Brantwood appear to be very favourable for both herbage quality and stock health.

The overall soil depth appears to have increased over time in the biodynamic area, and often shows the greatest depth of all three areas in the biodynamic area in the later years. As the plants roots were generally recorded as penetrating throughout the soil layer; as soil depth increased, so too did the length of the plant roots, which were often also





recorded as being well branched. If we compare the soil test data to the round filter chromatography data, both give an overall impression of synchronicity or connectivity in timeline variations between the different areas on the whole.

Perceptual mediations of connectivity (soul)

In contrast, a systematic comparison of the drawings from the Goethean observations did reveal an impression of a permanent, striking difference between the three areas depicted. In a seminar with Frank Burdich[2] and Inessa Guesava – who had been invited independently to advise on interpretation of the observation image record – both were able to identify a quality they could recognize as belonging to the biodynamic part of the meadow. In analysing these tryptics of images made together on each observation day, another very striking discovery was how diverse each individual expression is of the 'qualities of difference' that people perceive. Drawing their impressions of the meadows, each participant gives a depiction of the individual areas of the meadow (A, B, C), but also present to us a recording of the soul condition they are in themselves, when engaging in the experiment and exercise. This is a crucial epistemological point, since what is recorded on paper is a trace of a meeting: the observable meadow, as well as an observable imprint of the soul condition of the mediating participant. What they recorded, is strictly speaking no object but an 'event'.

Actually all science, no matter what instruments it uses to mediate, has such event character and depicts both poles; it will reveal an element of the world and an element of the position of a mediator. Goethe spoke of the experiment as the mediator between subject and object. It is the same principle we meet here; any result also reveals how one chooses to position oneself within a particular interaction. A field trial does not only reveal a reality, it sets up a relation.

Dialogic mediations of connectivity (spirit)

In the history of the Brantwood Soil Life project, something important happened during spring 2011. Sally Beamish asked her colleagues in the Project voluntary team to reposition themselves in relation to the meadow within the laboratory. What I mean by this is that having a suspicion that the effect of the biodynamic preparations was spreading beyond the dedicated area (B), a decision was made to engage the meadow as a 'Thou' and 'speaking partner' in the problem. The group engaged in a question directed to the meadow – 'Could help be given to contain the biodynamic effect to its area of application, thereby making any changes in the meadow more easily visible?' This was a very pragmatic question at one level, but also, ethically, quite a problematic one. It was not understood what this might actually mean for this part of the meadow to be asked not to share, not mediate, and not perform connectivity within a space it shared with the rest of the meadow. What was clear, however, was that from the date of this question being posed – between

April and August 2011 – a shift occurred: consciousness of the meadow was there as potential speaking partner.

See chart on previous page: *Hyphal diameter (um)*.

In 2011 there is a pronounced 'step change' in size of fungal hyphal diameter, recorded for all meadow areas. In interpreting such a "step" (figure), an open question arises, related to the potential influence the above event of 'spiritual connectivity' may have caused at a 'material connectivity level'. There is also a massive increase in the ratio of active: total fungal activity in area B (biodynamic) to an all time high of 6.1 mcg/g after a Meadow Celebration event in August 2014. A significant variation in figures also occurs between November 2007 and April 2008, when the first biodynamic preparations were applied. This could be caused by trace element levels being unusually low in November 2007, or by something else, such as the introduction of biodynamic preparations.

DISCUSSION AND IMPLICATIONS

Regional implications for land management

The soil and plant surveys convey a pretty clear picture of how the interplay between soil and vegetation ecology builds dynamic reciprocity between 'diverse plant life' and 'vital soil-life' in area B and C (biodynamic and manure-only). The soil structure records and overall root health indexes underpin these results. A balanced profile of micro-nutrients seem to keep more constant over time. This strengthens the image of a long term sustainable management system with micro-nutrient levels favourable for good herbage quality and stock health. The overall soil depth appears also to have increased over time in the biodynamic and manure-only areas. Since readings were taken from randomly placed soil profiles, these results need to be verified by further research.

Conventional area (A) has the lowest overall root health index. Interestingly, although area C was over-sown with timothy/rye-grass/white clover mix in August 2010, this conventional area showed the lowest percentage cover for clovers (often by a considerable margin) in every record after August 2009. These results may be used as a wake-up call for how delicate and dynamic a balance exists between plant-life and soil-life. They may also help to illustrate how farmers can learn to work in tandem with these fine dynamic forces to improve both soil fertility, fodder quality and ecological meadow diversity.

Methodological implications for biodynamic research

The Brantwood Soil Life Project may be viewed as a wake-up call also for those interested in the methodological questions of 'what constitutes a biodynamic field trial'. The question is how you position yourself as farmer and researcher in relation to the object of the study. If this positioning is not done consciously, it will easily happen unconsciously along a given formula which simply says: 'the less subjective involvement, the more scientific'. One could argue this from different points of view. The pragmatic argument says that learning has a dialogical character, any good farmer stays in 'conversation' with his animals and fields, and lets the questions and answers grow alongside the involvement with the matter at hand. In many ways, this is what has happened in the Brantwood Project – slipping out of the matrix of 'fixed field trial' – it has become a learning journey for all involved. A major discovery in this journey has actually been the importance of where you position yourself in the dialogue with the living world. As Tim Ingold[3] clearly puts it, in his interpretation of Merleau-Ponty:

It is not possible, Merleau-Ponty implied, to be sentient in an insentient world – in a world, that is, which has turned its back on its inhabitants, exposing only its rigid, external surfaces to perceptual scrutiny. To be sentient, to the contrary, is to open up to a world, to yield to its embrace, and to resonate in one's inner being to its illuminations and reverberations.

This epistemological argument says that our experience sits in an embedded relation to nature, we participate bodily, but also with soul and spirit, when we engage in understanding nature. And as a reciprocal gesture, if we do this, Nature will echo back how we bodily (materially) soul wise (perceptually) or spirit wise (mindfully) situate ourselves in our interaction. The third argument to abandon the given formula, is therefore found in the ethical realm: In the kind of relationship we chose to constitute by contracting in 'this way or that way' we make an ethical statement towards the beings of nature that we encounter. The Brantwood Soil Life Project can thus become a door opener to an important discussion in biodynamic research – with the very general question (it is not a trivial one to answer): 'What is a biodynamic field trial?'

Educational implications for Brantwood

In his short introduction to the 'Biodynamic Studies at Brantwood' (Ingram 2013[4]), Brantwood's Director, Howard Hull, gives a fresh characterisation of 'what is under examination': *'In many ways, it is the perspectives and culture of the approach that is really under examination, a sort of parable seeking to open our eyes to the wider challenge of configuring our relationship to nature'*. The question of the challenge of re-configuring our relationship to nature has been the red thread in the 'script' of the Brantwood Soil Life Project – as IT has unfolded itself. No better characterisation could be given today, as this phase of the project is brought to conclusion. There are multiple ways of human connections with the meadow; through land management and intent, through artistic processes, feelings and senses and spiritually through scientific and mindful engagement within nature. We are taken on a journey 'from observer to participant' in the natural world.

Within its educational space, the Hay Loft at Brantwood could provide an ideal entry point for such a renewal of the invitation the Meadow - as a piece of Nature - seem to be offering its hosts. In response, these hosts, the guardians of Brantwood today, can open the doors and windows of our being in nature again to their visitors, the region and the world.

Aksel Hugo is associate professor and research coordinator at the Ruskin Mill Field Centre.

[1] The article was written in close collaboration with Sally Beamish and Louise Moss.
[2] Frank Burdich is an independent spiritual researcher and director of the 'Gesellschaft für Angewandte Geistesforschung' in Dipperz, Germany.
[3] Tim Ingold (2011). Being alive. Essays on Movement, knowledge and description, Routledge, p. 12
[4] David Ingram (2013). The Gardens at Brantwood, Pallas Athene, p. 86

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"It's all about the soil . . . stupid"

By Marina O'Connell

I was in my colleague's orchard a while ago digging holes, as his young trees were dying and he didn't know why, I pointed out the poor soil structure and lack of any sign of worms and he turned to me and said (To paraphrase Bill Clinton) *'it's all about the soil ... stupid'*.

One of the great strengths of Biodynamic farming is that the soils are fantastic, and this has been proven by science in a series of trials in Switzerland called the DOK trials. Personally I think it is an incredibly powerful message – in a purely physical way these systems work and work really well. If you then couple this with the spiritual and the ethical nature of the Biodynamic system it makes it even more potent form of farming.

In this article I would like to focus on the physical aspects of a Biodynamic soil, and the scientific research that supports the Biodynamic systems.

This year the UN have declared it the Year of the Soil. To paraphrase the FAO website as they say it so well, 'Soils have been neglected for too long. We fail to connect soil with our food, water, climate, biodiversity and life. We must invert this tendency and take up some preserving and restoring actions. The World Soil Day campaign aims to connect people with soils and raise awareness on their critical importance in our lives'.

Did you know? Soil is the basis for food, feed, fuel and fibre production and for services to ecosystems and human well-being. It is the reservoir for at least a quarter of global biodiversity, and therefore requires the same attention as above-ground biodiversity. Soils play a key role in the supply of clean water and resilience to floods and droughts. The largest store of terrestrial carbon is in the soil so that its preservation may contribute to climate change adaptation and mitigation. The maintenance or enhancement of global soil resources is essential if humanity's need for food, water, and energy security is to be met.

Powerful words indeed even more so from the FAO that has promoted conventional agriculture for so many years. The problems of 70 years of full scale farming with chemical based fertilisers, pesticides, and large machinery are coming home to roost and have been a 'wake up call' as we have now run out of new land to bring into food production and so need to take better care of the soil that we have if we are to feed burgeoning populations and support wildlife over the next 50 years and longer.

It was 90 years ago that a group of farmers in Poland and Germany had noticed subtle changes in the loss of vitality in their soil due to these modern farming systems. So they asked Rudolf Steiner for lectures on how to offset these changes and degradation.

In the UK and across Europe the 1900-1920s was a time of a huge farming depression, and the cusp of the second farming revolution. Food prices were low, land prices were rock bottom, and farms were being abandoned. Farming was extremely hard work, poorly paid and with the opening of factories and the availability of homes in urban areas meant the farm workers left the land for easier and higher paid work. Farming started to mechanise and nitrogen based chemical fertilisers became available from 1913. The Haber process was developed in Germany and used to manufacture Nitrate fertiliser in Germany starting in 1913. This discovery worked out how to take nitrogen from the air, of which 70% is nitrogen, and change it into nitrates, or salts that can be put onto the soil as a fertiliser. Nitrogen is the power house of plant growth, and it gave a huge surge in yields of crops. At the time this must have felt rather miraculous, taking the hard graft out of farming with higher yields but they were not to know the problems that would arise from these new methods. This was the time that the 'old ways' of farming started to die out and the beginning of the new ways, the 'second Agricultural revolution'. Ronald Blyth brilliantly captured the stories of East Anglian farm workers from this time in his book Akenfield.

The farmers in Koberwitz had the observation skills and the foresight to notice and to ask for guidance about the problems that started to arise from the early use of nitrate fertilisers that must have seemed very subtle at the time. One could imagine that many farmers noticed, but the 'magic' of putting on fertiliser with machinery and getting high yields must have also seemed like a great boon after the slog of manual farming.

Moving forward to the present day when the damage done by the loss of the 'living element of the soil' is more apparent the DOK trials show dramatically how well the Biodynamic systems do in re-establishing the soil biodiversity.

The DOK trials were started in 1978 in Switzerland by FIBL, the Swiss National Institute of Biological Farming. Here they used randomised plots to compare Biodynamic (D) Organic (O) and Conventional (K) systems of farming over a long period of time. They wanted to compare the outcomes of these different systems of farming in all of their complexity. What is interesting about these trials is that

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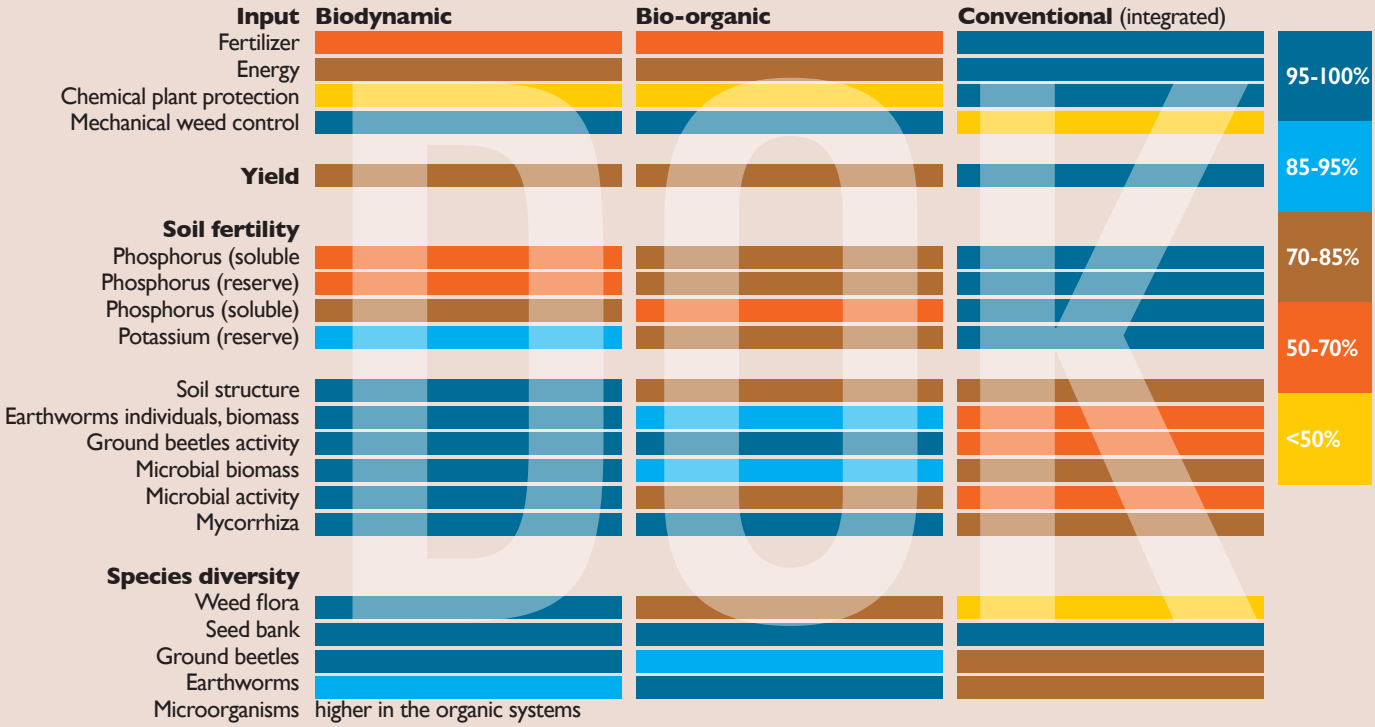
DOK-trial: 21 years of results at a glance



The long-term experimental results from the DOK-trial show that organic management systems allow for a sustainable agricultural production with lower input ans lower yields. Simultaneously, soil biological processes and species diverity were improved in organic farming systems.

FIBL was set up as a trust, to use science to explore how and why Organic and Biodynamic systems worked. What is important here is that a dedicated group of people funded themselves to count and observe things that at the time were not being counted in other sectors of agricultural science.

The reason for using randomised plots trials in complex systems such as farming, where there are many variables, is that it helps to eliminate any errors from the positioning of the plots. For instance if the conventional plots had been allocated the best soil on the sunniest spot then you would expect it to do better, so by have lots of small plots mixed up and dotted around means that you have made all of the variables as equal as possible for each system.

Next they decided what to count, and this is key to this bit of research that they had the foresight not just to count the yield as is so common in modern day trials. They also monitored the soil processes and the effect the systems had on the environment around them, in current scientific language this is called 'multiple yields'.

Then they started farming on these plots using the standard methods that would be used in each farming system, the rotations, the application of fertilizers, manures and preparations depending upon which farming system.

To summarize the results; The Organic and Biodynamic systems differed from the Conventional quite quickly, but after a longer period of time – 21 years – the Biodynamic soils had became significantly different to the organic soils. They became significantly more bio-diverse with more earthworms, beetles, more microbial activity, more microbial mass, more mycorrhiza, more weeds and better soil structure. The word 'significant' is important here as the data from these plots is analysed using statistics, and this means that on all the plots for most of the time there is an increase in the diversify and amount of micro-flora and fauna.

This was written up and published in Science Magazine in 2002. It is a very famous bit of research. What is proves is quite simply that Biodynamic systems work on a physical level to create bio-diverse and resilient soils. They also show that the Conventional system had the highest yields, with the Organic and Biodynamic systems having 15% lower yields.

I had the privilege at this time this paper was published to be introduced to Urs Niggli the director of FIBL by Martin Wolfe over dinner at the Soil Association Conference. As these trials were done by scientists and by farm workers who were not Biodynamic farmers nor anthroposophists, I asked him what they had made of their results – how did they explain them? He told me that they had set up meetings with Biodynamic farmers and the scientist to discuss how this might happen but the discussions had come to nothing as they could not find a common language to speak in. The science had found that this method worked but not how it had worked.

Moving on another few years Soil Ecology research has now moved forward another leap with the concept of the 'Soil Food Web'. Elaine Ingram has found methods to isolate and begin to count the number of species of bacteria, fungi, nematodes, insects. worms, beetles in the soil. This is a huge task, it is estimated that there are vast numbers of undiscovered species of bacteria and fungi in the soil. There is a lovely quote that there is more living beings in a tea spoon of living soil that there are people on the planet. It seems remarkable that no one had done this work earlier.

What Elaine Ingram explained is why the soil biodiversity is key to a sustainable soil. Functionally they extract nitrogen from the air and make it into nitrates available to plants, interact with the soil particles 'mining' the phosphorous and potassium from the clay particles and making it available to the plants for food. Some eat plant pathogens, some are plant pathogens, they digest organic matter and more. They also die, and when they die they themselves become food for other bacteria and fungi. They build up the

humus from themselves and from decaying organic matter. They are at the bottom of the food chain eaten by the larger species, the nematodes, the worms, the beetles the spring tails. And they in turn are eaten by other beetles, and larger worms and birds, and moles. They all in turn die and are digested by other bacteria and fungi and become the nutrient soup that feeds the plants. What they need to thrive is air as they breathe, and some food, what kicks it all off is manure. And of course moisture all of which is found in the top 10 inches of well structured organically rich soils. As we know from ecology the more diverse an ecosystem is the more resilient it is.

What Elaine Ingram also discovered is that any chemical based fertiliser or pesticide applied to the soil will kill large amounts of bacteria and fungi impacting upon the 'web' and the resilience of the soil, in effect killing it.

From these two strands of research we can understand that the Biodynamic soils are the most Bio-diverse and that high bio-diversity is good. This is recognised so widely now that conventional farmers are now applying molasses and minimal tillage to mimic these results on thousands of acres.

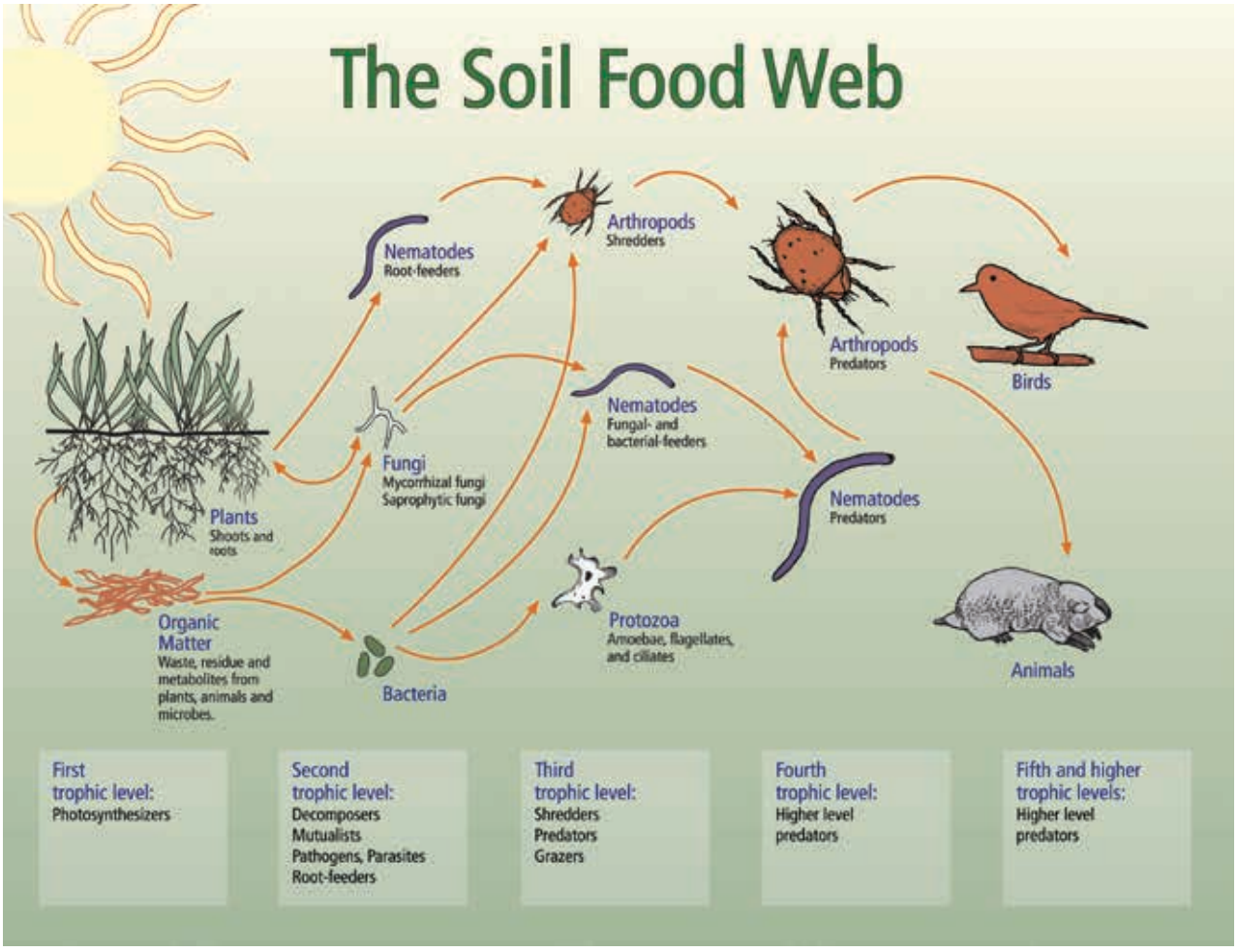
The Cow Horn Manure Preparation is made using cow manure, and it is important that it is a cow from a Biodynamic or organic system and ideally from a local farm. This is buried in the ground and when lifted small amounts are stirred in warm water adding air and warmth. This will in effect multiply bacteria and fungi populations that are then spread on the soil. Perhaps the next piece of research is to measure the biodiversity in the horn manure, before and after stirring. On a purely physical level it might well be that this is like an 'inoculation' of biodiversity across the farm repeated over many years this finally translates in to a soil that is teaming with life.

Once we have a soil teaming with life then it becomes easier to work, easier to grow food in, the food will taste better as it will have greater complement of minerals. The pest and disease incidence will decrease due to the antagonists found in the soil, just like the human immune system. All of this we know from practice and experience is what we find on Biodynamic farm. It is indeed *'all about the soil … stupid'*.

Marina O'Connell works at the Apricot Centre and is developing the new Huxhams Cross Farm at Dartington Totnes in association with the Biodynamic Land Trust. For details of our courses please email me at info@apricotcentre,co.uk. Shares in the farm are still available contact Martin Large at The Biodynamic Land Trust: biodynamiclandtrust@gmail.com.

References

- Jeff Lowenfels and Wayne Lewis
Teaming with Microbes a Gardeners guide to the Soil Food Web
- Mader P Fliessbach A Dubois D, Gunst L, Fried P,
Niggli U (2002) Soil Fertility and Biodiversity in Organic Farming
in Science Magazine 10.1126/science.1071148
- www.fibl.org FiBL dossier 2000,
'Organic farming enhances soil fertility and Biodiversity'
- Elaine Ingrams work - www.soilfoodweb.org



Soil Culture *at create*
4 July - 26th August 2015

Exhibitions, Soil Saturdays and Food Happenings

Centre for Contemporary Art and the Natural World (CCANW) with
Touchstone collaborations and in partnership with the Biodynamic Association

2015
International
Year of Soils

'Soil Culture at create is a combination of art, sensory experience, eating and a call to action. It is also an unprecedented opportunity to encourage and enlighten Bristol and the UK into taking pioneering action to safeguard its soils from loss and degradation.' Maddy Longhurst of Blue Finger Alliance

Soil Culture at create in Bristol, Europe's Green Capital, marks the beginning of a seven year journey from 2015 UN International Year of Soils to the World Congress of Soil Science to be held in Glasgow in 2022. This summer celebration of soil takes place throughout July and August at the Create centre, Bristol's flagship environmental centre on the Cumberland Basin.

How to respect and protect soils as the source of life? How to nurture a soil movement in the everyday through food and the arts? The two months of Exhibitions, Soil Saturdays and Food Happenings is ground-making in bringing together art and science, local and global, growers and eaters, policy, and practice, young and old. It is already unfolding a legacy that inspires transformative actions that awaken us all to become response-able soil and food citizens, active in calling for policies to protect soils at the local, national and global levels.

Soil Culture at create is a shared commitment to bringing arts as research to communicate the message of soil as the source of life and invite wide-ranging thinking, ever-creative practices and growing confidence to restore and safeguard soils. Through a lively programme of hands-on activities, experiences, information, conversations and ideas, the two months becomes a fertile environment in which we are learning together to evolve good practices around soil.

'Soil is the source of all life. Sadly, many people in the world are losing their connection with the soil. Soil Culture at create is a timely celebration to remind the world that we are all children of the living soil.' Satish Kumar, Resurgence & Ecologist magazine. Schumacher College

From Monday to Saturday through July and August, you can discover the exhibition 'Soil Culture: Young Shoots' that shares research findings and work created during 12 residencies across the South West and at the Royal Botanic Gardens. On display will be designs for a roof garden for a new primary school in Bristol as well as 'Dirt Dialogues', a sister exhibition curated by Alexandra Toland of 36 large posters documenting the work international artists who have engaged with soil.

Woven around these Exhibitions are eight Soil Saturdays, each focusing on a particular soil theme through a medley of hands-on activities, talks, films, forums and food sharing. What we have learnt is that across cultures, food is the most direct way to share the soil story and raise awareness around its significance for the health of body and planet. With local farmers and growers from Bristol and its hinterland, Soil Sisters Miche, Flora and Daphne Lambert are choreographing convivial and nourishing Food Happenings for the eight Soil Saturdays. Each gathering – feasts, picnics, botanical cocktails and summer canapes, thanksgiving food rituals, culinary-skills workshops – will bring a taste of the soil's gift of food into the everyday.

'From one aspect or another, all interests of human life belong to Agriculture.' Rudolf Steiner.

The Biodynamic Association (BDA) has a strong presence throughout Soil Culture at create and will be co-hosting Soil Saturday on **1 August** that explores the theme of 'Growing Soil.' This day shares ways to maintain, restore and safeguard soils. Through wide-ranging conversations and exchanges, it is a day for strengthening alliances with other organisations working to regenerate and protect soils with nature-centred approaches. Offering information on biodynamic training, practical workshops, research resources and publications as well as introducing people to initiatives such as Seed Co-operative and Bee Projects - all these will show how over 90 years, respect and care for the living soil has been at the heart of biodynamic methods of cultivation food and communities. Food from biodynamic farms and gardens will inspire Soil Sisters to create dishes to tempt the taste-buds of those who come to be part of Growing Soil.

'For out of the soil are we fashioned, and by the products of the soil is our earthly existence maintained'. Eve Balfour

Soil Culture at create in Bristol 2015 European Green Capital is a timely opportunity highlight the value of the arts as a profound communication approach to engage diverse ways with the living matter of soil. Come along and join this collaborative initiative for soil guardianship in the everyday. Come and contribute to the momentum and strength of soil, art and food movements dedicated to the present and future of the planet.

SOIL SATURDAYS at create centre

SOIL INTERDEPENDENCE DAY
Saturday 4th July -
Celebrating our interdependence with soil and water.

WHAT IS SOIL?
Saturday 11th July -
Hands-on soil discoveries of the living matter of soil with art and science-making.

SOIL OF BRISTOL
Saturday 18th July -
Walk and Talk for Soil to co-create city-wide Soil Declaration.

LIVING SOIL LIVING FOOD
Saturday 25th July -
Taste how vital soil feeds living foods for body, mind and soul.

GROWING SOIL
Saturday 1st August -
Experiences and skills to care for and restore living soils.

WHOSE SOIL?
Saturday 8th August -
Explore soil and social justice through local and global dialogue.

FALLOW FIELD
Saturday 8th August -
Focus on legacy of Soil Culture at create with reflections and conversations.

ART OF SOIL
Saturday 22nd August -
Symposium on power of art in ecological and cultural diversity.

WHY Without healthy soil there is no life
WHAT A summer celebration of soil to support enduring change for safeguarding our living soils
HOW Soil inspired Exhibitions animated by Soil Saturdays and Food Happenings
WHERE At create centre in Bristol, B Bond, Smeaton Road, BS1 6XN
WHEN 4 July to 26 August 2015
WHO Soil Culture at create is for everyone

Soil Culture at create is a collaborative initiative of CCANW, Falmouth University's Research in Art, Nature and Environment (RANE) and Touchstone collaborations. The Biodynamic Association is closely involved as supporters and partners in this UK celebration of the International Year of Soils.

For more about Soil Culture at create, please contact Soil Sisters Miche Fabre Lewin, Flora Gathorne-Hardy or Daphne Lambert on soil@touchstonecollaborations.com
See also www.touchstonecollaborations.com and CCANW's website.www.ccanw.co.uk

Crafting a listening place through food and art to hear the voice of soil

All Photos © David Price

Seed Co-operative

By David Price

I am writing to provide an update for the biodynamic seed production and plant breeding project that Peter Brown wrote about in the December 2103 issue of Star and Furrow (no. 120). Much has happened since and seed production is now in full flow.

TALKING

There has been much discussion over the last 18 months. Much of the talk has been at various events including the Great Seed Festival, Biodynamic Conference and the Oxford Real Farming Conference where we have been talking to as wide an audience of interested people as possible. Everyone involved feels passionate about the importance of what we are doing and conveying that message to others.

We have also been deliberating and planning, considering options and trying to find the easiest path by which we can achieve our plans. At times progress has seemed excruciatingly slow but now we have progress to report and it is great to be able to share the news with Star and Furrow readers.

OUR OBJECTIVES

There are three main objectives for the Seed Co-operative:

1. **Breeding new varieties of open-pollinated seed for biodynamic and organic farming.**
2. **Producing biodynamic & organic seed, and developing a national network of seed growers.**
3. **Sharing the knowledge and skills needed for seed production and seed saving.**

At the moment we are concentrating on seed production and knowledge sharing while we consolidate our organisational structure and establish a site and infrastructure.

THE CONTEXT OF OUR WORK

To clarify I should say that at present we are only dealing with vegetable, herb, flower and green manure crops, 100% open-pollinated seed. It is probably worth recapping quickly why this work is so important.

- Open-pollinated seeds are the original 'open source' software of food. Unlike F1 hybrids, their genetic material does not belong to anyone. These seeds can be saved year after year, or swapped with friends, crossed to develop new varieties and used for the common good.
- Sustainable farming systems need open-pollinated seeds that provide reliable, nutritious crops with good storage qualities. These crops can be produced using systems based on biodiversity, requiring no chemical inputs due to the high health of plants derived from the balance of soil microbiology and plant communities, using little or no irrigation and less mechanisation.
- Currently there is insufficient high-quality, UK-grown, organic certified open-pollinated seed, about 80% of current seed sold in the UK is imported. Because open-pollinated seeds adapt to the local conditions where they are produced, it makes sense to produce them across the UK, not to import them!
- Little or no breeding and development of open-pollinated seed has been undertaken in the UK since the 1980s.
- The knowledge and skill base for growing seed is much diminished.
- There is a model to address these issues working well in Europe; the last issue of Star and Furrow had an article about Bingenheimer Saatgut.

F1 hybrid seed - the science

Breeding of F1 hybrid seed is based on natural hybridisation when two distinctly different varieties of the same species cross to produce a more vigorous offspring.

F1 hybrid seed production is undertaken using techniques that enforce prolonged in-breeding on two separate homogeneous breeding lines, which are then crossed to produce the F1 hybrid seeds. This in-breeding reduces the genetic diversity on which open-pollinated varieties rely for their long-term health. Open-pollinated plants achieve this naturally through out-breeding / cross-pollinating.

Open-pollinated seed - the science

Open pollination is the natural process by which plants reproduce and exchange characteristics from generation to generation. Plants propagate either as cross-pollinators, self-pollinators, or semi cross/self-pollinators.

Open-pollinated seeds can breed true to type, which means the saved seed will always closely resemble the parent plants and pass on their characteristics. Given sufficient time and knowledge, established varieties can be crossed to develop new varieties.

Open-pollinated varieties carry wide genetic diversity and contribute to bio-diversity within food crops. They are sensitive to the environment and thereby flexible to adapt to, and tolerant of, soil types, cold and warm climates, wet and dry conditions, altitudes, latitudes, salinity, diseases and other factors.

DEVELOPING THE ORGANISATION

We have registered a Community Benefit Society called Biodynamic and Organic Plant Breeding and Seeds Limited which will trade under the simpler name of 'Seed

Co-operative'. A board has been formed of eight directors including Chris Stockdale as the BDA's representative. The other directors are Peter Brown (Chair), Hans Steenbergen (Stormy Hall Seeds), Peter Brinch (Open Pollinated Seeds), Phil Sumption (Organic Research Centre), Neil Munro (Garden Organic – Heritage Seed Library), Elly Austin and myself (David Price); I am the Secretary. We also have a full-time horticulturalist, Kate Ayre, who started on 1 April 2015 and is also my partner. I am helping Kate, as and when, to get crops established and infrastructure in place.

This project was initiated by the Biodynamic Association, Stormy Hall Seeds and Open Pollinated Seeds. Stormy Hall Seeds are based at Botton Village and are a trading activity of the Camphill Village Trust (CVT). We are in discussion with CVT about the transfer of Stormy Hall Seeds to our Community Benefit Society, as the intention has always been that the Seed Co-operative will take on the seed processing and wholesale / retail activities currently undertaken by Stormy Hall Seeds. It is hoped that seed production will continue at the farms and gardens of Botton, with seed sold on to us for processing.

HOW TO GET INVOLVED

The easiest way for people to support our work and be directly involved is through membership share ownership; details can be found on our web site. This provides the following benefits:

- You can actively help, and build up our society, cast votes at AGM's and receive an annual report.
- Become part of a network of seed producers and take part in trials or breeding programs.
- Have first-hand access to information on our breeding programs and growing trials, and have access to seed from newly developed varieties to try out in your own garden.

To become a member costs £100 to purchase 100 membership shares. A minimum of 100 shares is required for one vote. There is no maximum to the number of shares that can be bought, but voting entitlement is restricted to one vote.

RAISING FUNDS

Last autumn we were successful in applying to the Salvia Foundation in Geneva for a grant to fund our fundraising programme. This has enabled us to pay for help from a fund-raising consultant in planning our strategy and targeting our efforts. It has also paid for some of my time in mainly a fundraising role; assembling information and putting together a strong case for why the need for the Seed Co-operative is so urgent and compelling. This is being used in support of our business plan when making approaches to philanthropists and grant giving bodies.

We have been delighted to raise £50,000, at time of writing, through two large donations. This is half of our total for 2015, and on top of other donations has really put the wind in our sails. It has enable us to employ Kate to undertake the growing work and purchase equipment including tractor implements and two 50m polytunnels. This funding is also paying for some of my time in project management and purchasing equipment, as well as more general help for Kate. CVT have kindly loaned us a tractor that isn't currently required at Botton.

GROWING FOR SEEDS

We are growing at a temporary site in Suffolk while we look for a suitable permanent home. Hulvertree Farm, Laxfield has been organic for over 15 years and we are using the BD sprays on one rented four- acre field where we are growing vegetables, herbs, flowers and green manures for seed. Once harvested the seed will be processed and sold by Stormy Hall Seeds.

SKILLS AND KNOWLEDGE SHARING

Peter Brinch of Open Pollinated Seeds is offering talks and workshop sessions on seed production through the Seed Co-operative. Workshops are targeted at specific audiences of differing levels of existing knowledge and experience from novice to expert, small gardener to large-scale commercial grower. Areas of study include:

- the history of seed saving and production
- technical theory explain the differences between open pollinated seed and F1 hybrids
- maintaining varieties and plant selection
- Preventing cross-pollination
- Harvesting seed
- Seed processing techniques and seed storage

Please see our website for details of upcoming workshops, or contact us if you would like Peter to put a workshop on for your group.

LOOKING FOR A HOME

We are looking for a small farm to rent on a long-term lease to allow us to establish a full set of infrastructure, including polytunnels and buildings, for seed growing and processing, plant breeding and development.

Our ideal criteria are as follows:

- A small farm of 50 to 150 acres
- Certified as organic or biodynamic
- With some buildings suitable for conversion for seed drying, processing, storage, packaging and sales
- Probably in East Anglia, with a longer growing season and drier climate than the national average
- Fields with suitable southern aspect for vegetable growing with isolation from spray drift
- We expect to have up to 10 people on site at busy times and we would like to be able to accommodate at least one couple permanently on the farm, and apprentices / volunteers in temporary accommodation.
- We will embed seed production and plant breeding within a small biodynamic farm, using a mixed livestock and cropping enterprises to build fertility and maintain a self-sustaining farm organism. Open days and farm tours will be organised so that others can come and share our experiences, both good and bad!

If you have or know of a suitable farm to rent please do get in touch

WEB SITE AND COMMUNICATIONS

To keep up-to-date with how we are getting along you can get current news from our web site www.seedcooperative.org.uk. We are also documenting our progress on www.facebook.com/seedcoop.uk (you don't need a facebook account to see it) where you can see pictures dating back to March when we first started sowing seed. You can sign up for our newsletter on both the Facebook page and the web site and we also have a Twitter feed #seedcoop. You can also contact me directly by email to davidprice@seedcooperative.org.uk or phone 01986 798159.

FUTURE PLANS

PLANT BREEDING AND RESEARCH PROGRAMME

Once we have a permanent site we will begin our plant breeding work in earnest. We have partners in Europe who will assist in this and UK organic organisations with whom we will be working.

SEED PROCESSING, TESTING AND SALES

Hans Steenbergen will bring 20 years experience with him from working at Stormy Hall Seeds. With a full range of seed processing machinery and the necessary equipment to fully analyse and test seed we will be able to ensure all of our seed is of the highest quality.

SEED PRODUCTION

We plan to be growing up to 8ha (20 acres) of vegetable, herbs and flowers for seed production in the next five years at our main site.

WORKING WITH COMMUNITIES

We will work with both the local community and wider communities of interest. With large volumes of vegetables being produced we will be establishing local links through which we can sell produce not required for the seeds.

APPRENTICES AND VOLUNTEERS

We will have opportunities for long-term apprentices, providing experience of field scale vegetable production, seed production and processing.

Opportunities will be provided for volunteers both as short-term residential blocks and as regular days for interested local people.

David Price has a background in habitat management and conservation projects. He also runs a smallholding near Woodbridge in Suffolk.

Understanding the Zodiac

By Ian Bailey

Why, when we read in the newspapers, that our Sun sign - say, Cancer is from June 22nd to July 21st does the planting calendar say Sun ☉ enters Gemini ♊ on June 21st?

And so on throughout the year we find inconsistencies between what we read and what we think we know, or see in the sky, in terms of the positions of planets in the zodiac.

This is something that might confuse people and hinder them from deepening their relationship to the astronomy of Biodynamic planting calendars.

At another level we all know that the Zodiac means different things to different peoples in different cultures and over the course of time. The Zodiac is a circle, a circle of stars, fixed stars we call them, way beyond our Solar System, lying in a band 12° either side of the plane of the Earth & Sun. A 360° circle can be divided in many ways in different cultures and over time. But this particular difference hinges on a quite specific astronomical fact that we need to get our head around before going on. The earth is wobbling. Very gently! One turn taking nearly 26,000 years. (There is a second, somewhat faster wobble, or nodding at work known as Nutation, which takes us into an exploration of the orbit of the Moon, but we won't go there just now!)

Imagine that the earth would be sitting upright on the plane of the earth & sun and circling the sun *(figure 1)*. Perhaps it once was. The sun would be overhead at the equator all year round, there would be no seasonal changes of climate and the earth would be a very different place. If we project the polar axis of that situation out into the celestial star map we would have not Polaris, the present day North Pole Star as the axial point around which the celestial sphere rotates but a point at 18 hours of right ascension and 66° 33' 38.5" of declination. It is in the loop of Draco, the snake *(figures 2 and 3)*. We can call this point the ecliptic Pole. There is of course an equivalent Ecliptic South Pole, which we see in a constellation of the southern hemisphere called Dorado. This is the vertical axis of the plane of the earth & sun. (The Ecliptic)

The fact is that the earth is tilted 23.5 degrees from that upright axis and is revolving like a spinning top slowly anticlockwise around this point. One revolution of this wobble takes about 25,800 years, and this is called the Platonic year. The effect is called Precession.

A precise encyclopaedic definition of this motion is as follows:-

Precession: *the rotation of an axis of a line that is itself the axis of a rotating body. The effect may be observed in a spinning top, of which the axis of rotation is initially vertical but, as the top slows down, begins to precess about its original position.*

figure 1

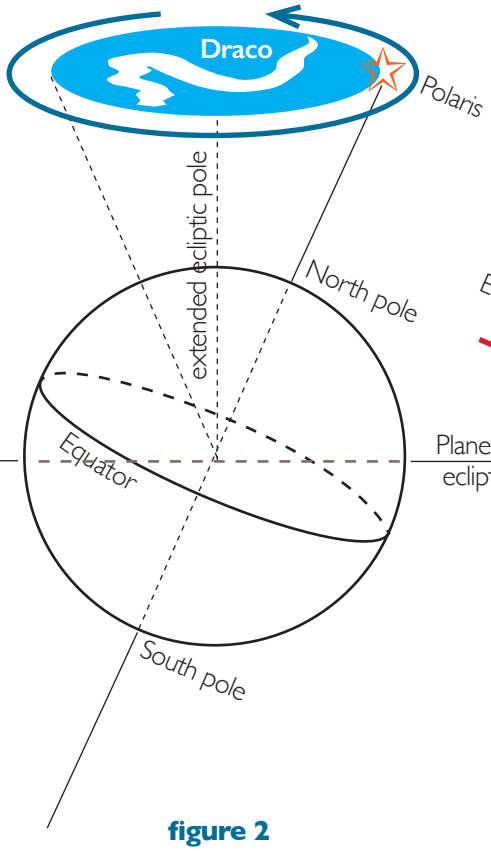


figure 2

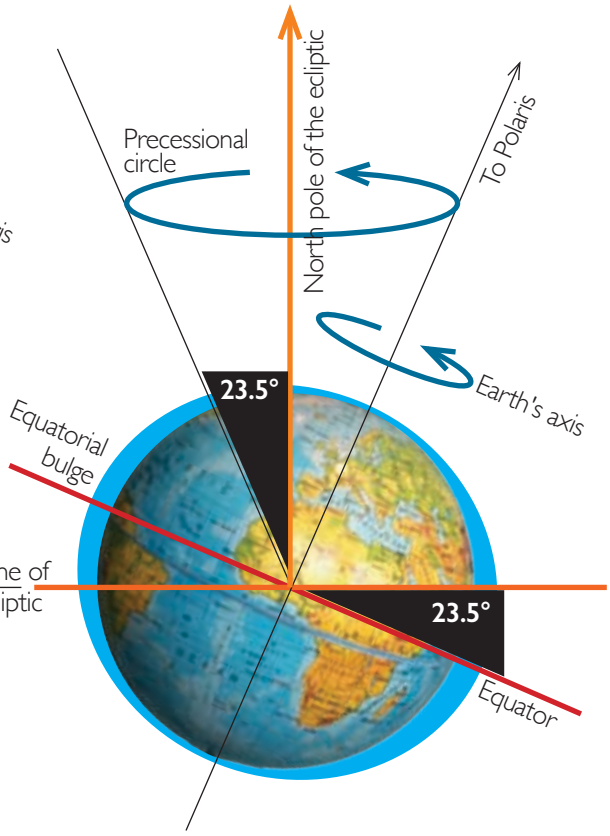


figure 3

As the axis of the earth slowly rotates in a circle around the ecliptic pole in the northern sky at a rate of 1° every 72 years we see the position of the North Pole in the sky moves in a circle 470 wide centred on this ecliptic pole *(figure 4)*.

Something interesting happens at the equator too. As the sun crosses the equator each year we speak of the equinoxes. For those in the northern hemisphere, the spring equinox as the sun moves north and the autumn equinox as it moves south. This is the meeting of the earth's equatorial plane tilted at 23.5° with the plane of the earth and the sun, the ecliptic path of the sun lying in the Zodiac *(figure 5)*. Just as the pole point in the sky is making a little circle in the northern sky, so we shall find that these points are slowly moving around the zodiac *(figure 6)*.

So we say, the spring equinox point, the summer solstice, the autumn equinox and the winter solstice points are all 'precessing' through the zodiac at a rate of 1° every 72 years just as the equatorial pole is revolving around the ecliptic pole. This is the phenomena known as the precession of the equinoxes caused by the above mentioned fact that the earth is wobbling. Very gently.

A precise encyclopaedic description of this is as follows:

Precession of the Equinoxes: the gradual westward motion of the equinoxes around the ecliptic in a period of about 25,800 years. it is caused by the precession of the earth's axis of rotation, which results mainly from the gravitational pull of the sun and the moon on the equatorial bulge of the non-spherical earth. As the axis precesses, slowly tracing out a cone in the sky, the celestial equator (lying in a plane perpendicular to the axis) moves relative to the ecliptic. The points of intersection, i.e. the equinoxes, thus continually change.

Now as these points move around they stand before slightly different stars all the time. And as the sun passes them each year on the same date, so the sun stands before slightly different stars on the same date each year. One degree of westward movement every 72 years should step up to something like 30 degrees every 2,150 years, and this is the period of time for which the sun stands before a constellation of the Zodiac at the spring equinox on 21/22nd March each year.

2,000 years ago when Ptolemy mapped the sky the sun stood at a certain point on the spring equinox and this was named the 1st point of Aries. That is the beginning of Aries, and it was the star picture of the Ram. Year by year at the Vernal Spring equinox that point has shifted westward through the star picture of the Fishes *(figure 7)*.

This has occurred because we make calendrical adjustments to maintain our 'year' such that the equinoxes and solstices fall on the same day every year rather than have the seasons drifting through the year. Were this not the case we would have the spring equinox in February by now.

The Tropical year of 365.2422 days is the interval between two successive passages of the sun through the vernal equinox. The Sidereal year of 365.2564 days refers to successive passages of the sun through a point relative to the background stars. This over time creates the difference between the Tropical Zodiac and the Sidereal Zodiac. The Tropical Zodiac refers to the sun's position viz-a-viz the earth's rotation and the earth year. The sidereal zodiac refers to the sun's position viz-a-viz any given star.

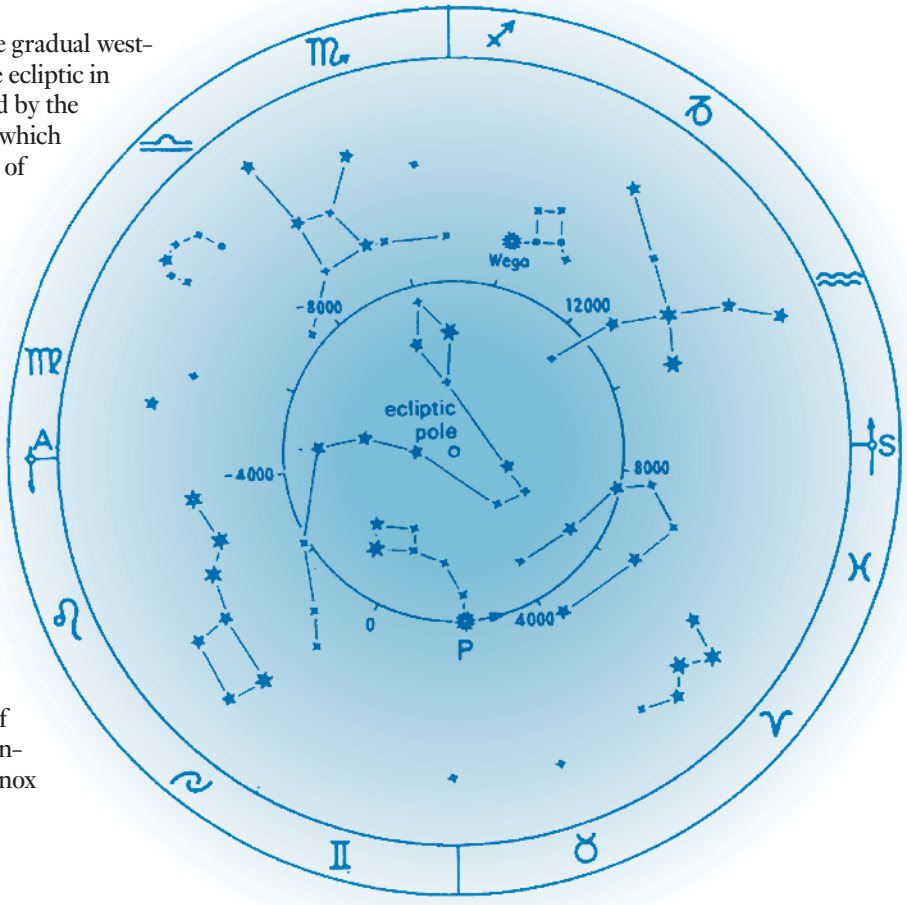


figure 4

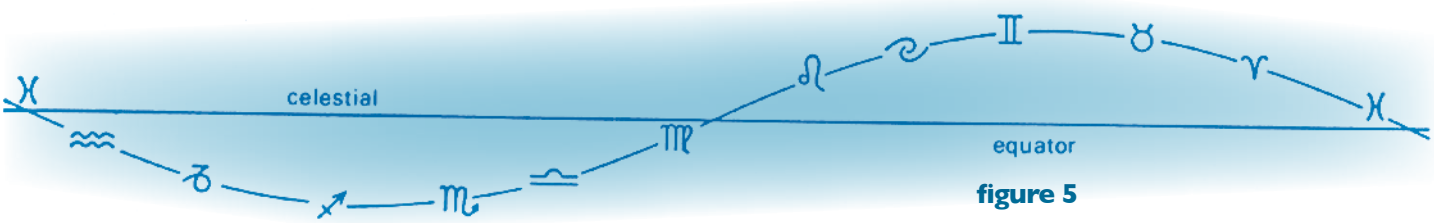


figure 5

Consequently when we read that the Sun sign of Cancer begins on 21st June this is so for the Tropical Zodiac, whilst the Sun actually stands about 25° to westward in the zodiac and is just entering the star picture of the Twins in the Sidereal Zodiac. The relevance of this is that in Biodynamic practice we use the sidereal position of the sun and planets rather than the tropical.

A fascinating development of this astronomical rhythm is to contemplate that the vernal equinox must move through all twelve zodiac star pictures over 25,800 years. Its passage through each one then comes to about 2,150 years. Rudolf Steiner referred to these periods as Cultural epochs. We can trace them back to when the vernal equinox stood before the star picture of the Crab.

The diagrams here are from an 'Astrosophy' by Hazel Straker, 'Movement & rhythms of the stars' by Joachim Schultz & 'Anthroposophy & Astronomy' by Elizabeth Vreede. Wherein more detailed expositions of these phenomena can be found.

Ian Bailey is a keen student of the starry heavens. He is also a BDA Council Member and works in The Grange Camphill Community in Newnham.

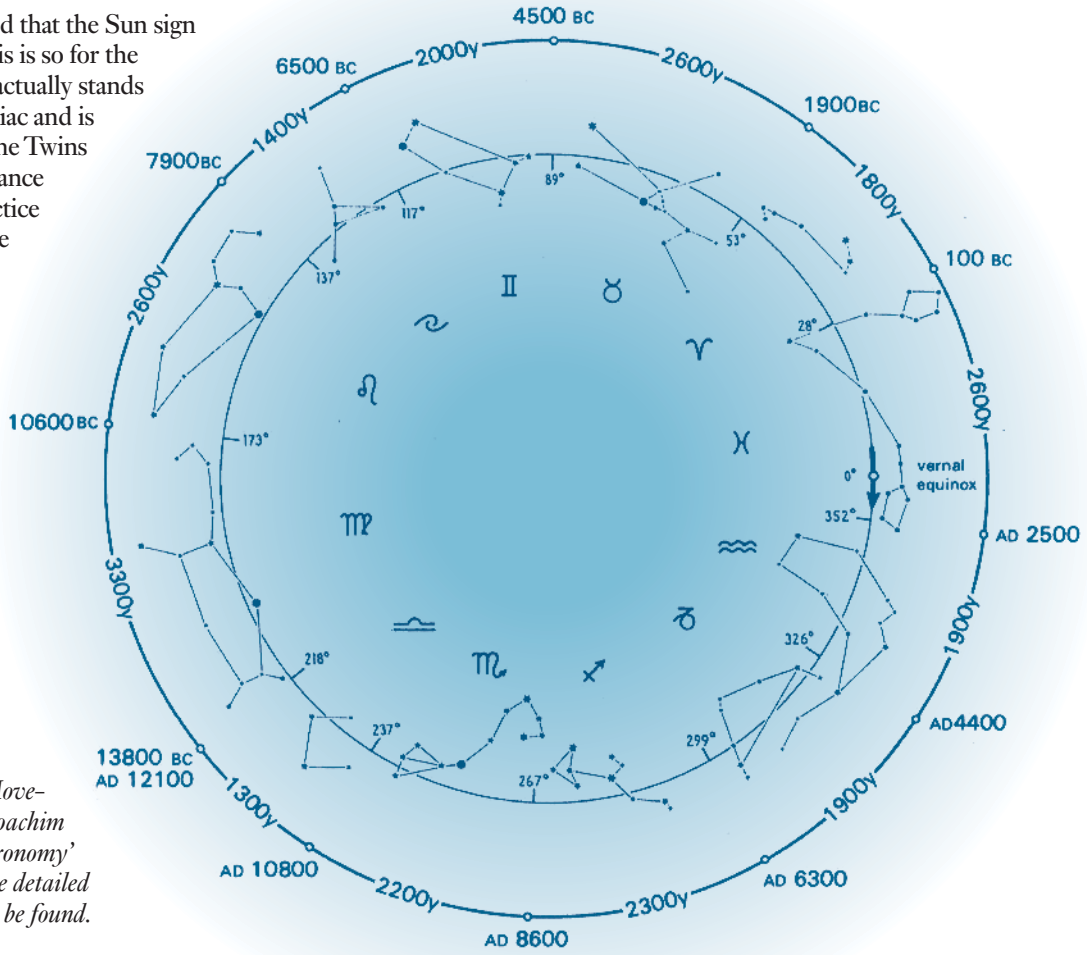


figure 6

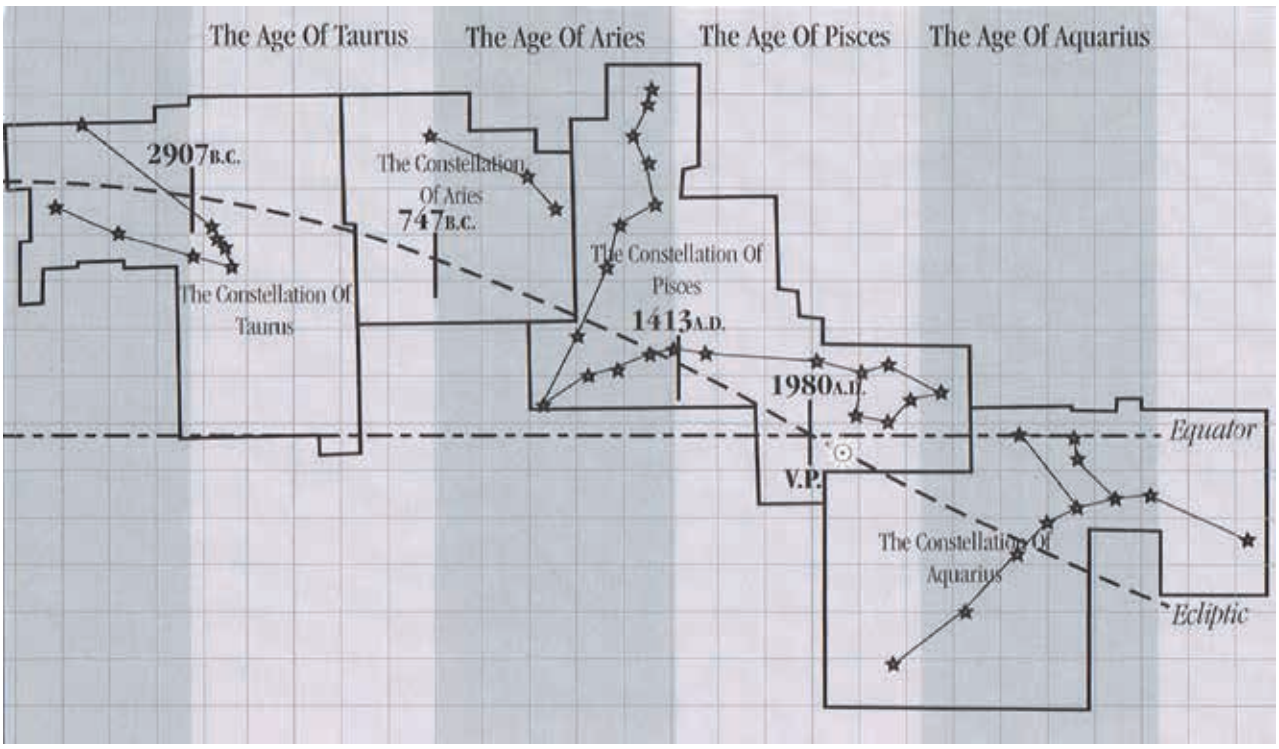
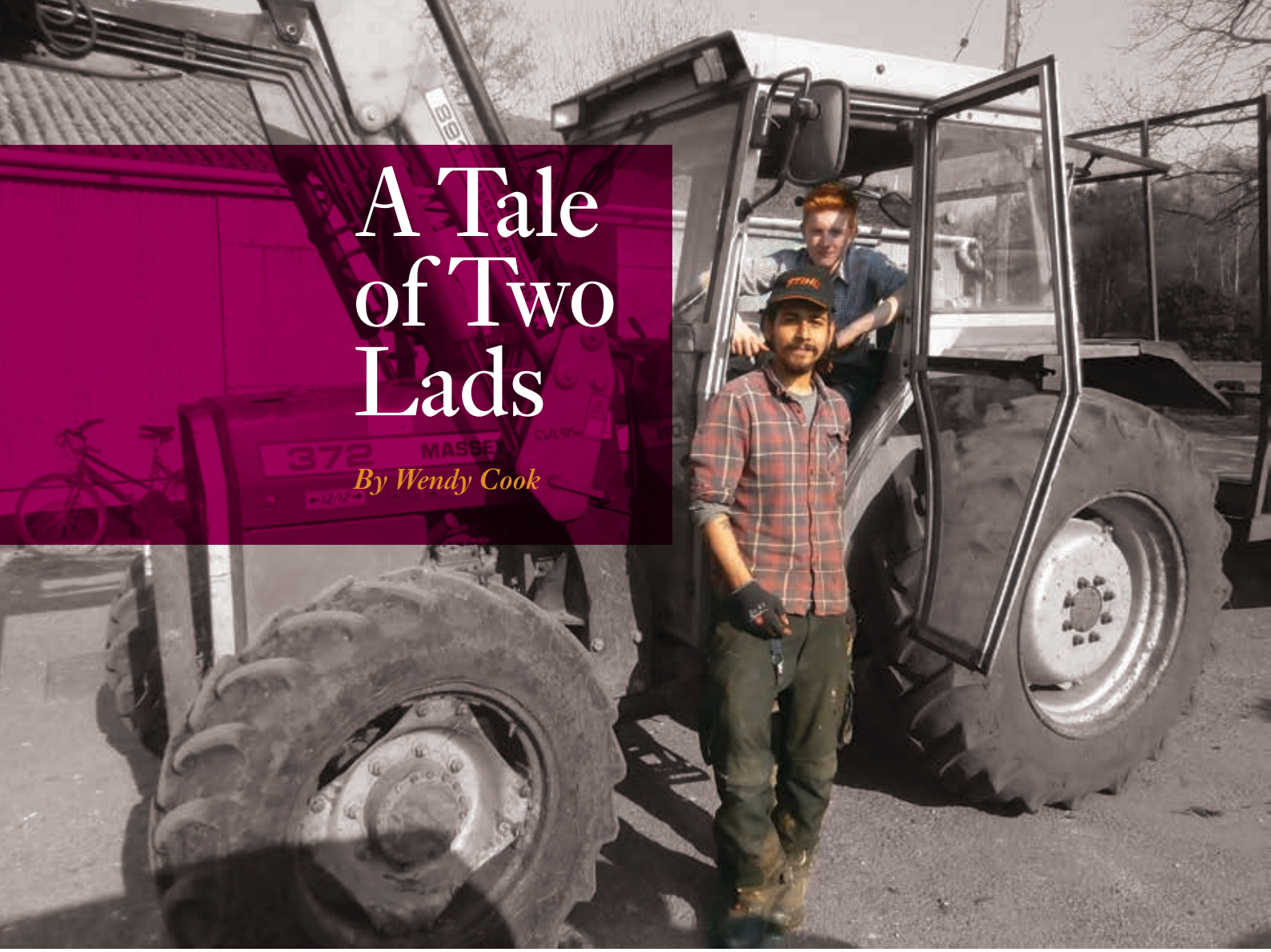


figure 7

A Tale of Two Lads

By Wendy Cook



© Henning Koester

Sturts Farm in East Dorset is a one-hundred-acre BD farm with a small Camphill Community at the centre of its activities. I arrived to spend Christmas there, hosted by Sandra and Henning Koester. The first thing that caught my attention upon arrival was a couple of tractors being driven with exuberance by two young lads, carting dung to and fro and distributing it. Throughout my stay, the enthusiastic presence of these two friends on the farm and in many community activities intrigued me. It is such a treat to see youngsters being totally absorbed in their tasks. I asked them at the end of their stay whether I could interview them and they agreed.

Ruben Koester, almost 15, is the youngest of three siblings in his family. He is red-haired – as are his brother and sister – and gives the impression of a bundle of very focused energy with a quick wit. His sister Johanna has started an apprenticeship in biodynamics in Germany. His paternal grandparents (German) were farmers and his own father has a Masters in agriculture as well as doing the Biodynamic training at Emerson College. He is mainly responsible for the work programme at Sturts.

Ruben attended the local Ringwood Waldorf School until the age of 14, but even as a kindergarten child he would protest, saying *'I have too much to do on the farm to go to school!'*. At the age of nine he hatched his own batch of chicks and when for the first time he saw a lamb being born – a total miracle in his eyes – he determined to get his own flock of sheep. At 11 years he started with two ewes of the breed Ouessant, a miniature French variety. Now he has a flock of 14 and has transported them (in two batches) to his school to give shearing demonstrations.

In Class 6 his best friend left to work with horses, a second contemporary had left to become an Olympic sailor (Milo) and yet another to be a Wimbledon class tennis player. Ruben, who is dyslexic (and therefore classroom work is less attractive to him), begged to be able to leave school too, to follow his love of farming and being outdoors. Now his life is fulfilling, he is surrounded at Sturts with a multicultural group of helpers from Peru, Germany, Hungary, Italy, Canada and Brazil.

The farm has 14 Ouessant sheep, 6 pigs and 40 cows (mainly shorthorn cross). He has a very varied educational programme: on Mondays he has an educational support worker for dyslexia and also classes in maths and English. On Tuesdays he teaches a main lesson at Ringwood School on ditching, mucking out, turning compost heaps, brushing cows, leaf-raking, mulching young hedges, TB testing with the vets and helping with the seasonal potato harvest. On Thursdays he attends Kingston Maurwood Agricultural College, doing currently Level 1 Hedge laying, then he will go on to agricultural college in Dorchester. *'So, what else can you learn on a farm?'* I asked him.

'I help to plough, seed and cultivate the fields growing oats

and fodder crops for the animals, making hay and silage. Reeds grow in some of our fields as we have such a high water table, but the horses can graze these. We have eight acres for vegetables, though with the high water table this is not the best situation for veg growing. We have two cows in milk, which is done by hand. The milk is mostly used for cheese and the companions can get involved with this process, the cows being small and docile. We are rearing our own shorthorn bull on the farm. Now seven months, he is being halter-trained with three handlers. This is bovine-assisted education; we learn to wash and groom the animals and study their behaviour.

'Biodynamic farming is somewhat different from organic. It involves working with the constellations, making the preparations and spraying them. In addition to these, all farming requires knowledge of water systems, engineering, tractor maintenance, proper storage of crops, (i.e. hay which is very delicate with its clover content, quite combustible) and some understanding of nutrition. We need to learn about choosing the right breeds for the environment, in this case the next flock of sheep will be Portlands.'

We spoke of the question of slaughtering. *'Beef, if they're over 30 months, have to go to a special abattoir. We have a local old-fashioned butcher who will deal with them, one animal at a time.'*

Ruben described visiting Laverstoke Biodynamic Farm near Basingstoke (the largest Biodynamic farm in the country) where in their own abattoir, animals are bedded for 24 hours. With classical music playing, they are then slaughtered in the morning. At college this Christmas Ruben learned how to kill turkeys, plucking and gutting them. *'The process always has to be followed through, otherwise you can lose your entire work. This teaches you to be responsible.'*

Whilst he was attending school, Ruben often came home frustrated and with headaches. Now at the end of a day he usually feels happy and fulfilled, if he has managed to carry something right through and can sometimes say, *'I've done a good job today!'* There is very little that cannot be learned on such a farm. His ambition is to have his own farm, of course.

Luciano Privat is from Lima, Peru. With intense dark eyes and long dark hair (plaited), he is now 20 years old. His father being an economist, Luciano grew up in the city of Lima. When he was not thriving in the regular educational system his parents found the Lima Waldorf School, which he entered at 4th grade.

He flourished with the artistic approach used there and discovered a real interest in elemental beings, on which he wrote his thesis in his final year! At the age of 18 he stopped doing 'teenage things', going to parties etc. One of his friends had had a very good experience at Botton Camphill Community in the UK and encouraged Luciano to use his gap year in a similar environment. He did some research and close to apply to Sturts, despite the fact that they offered less holidays than others – or perhaps it was because!

Until 2012 he had had nothing to do with farming so at Sturts he had to learn quickly: he learned to get up early – and this way of life soon took hold of him. One day he woke with this realisation, *'I am going to grow food for people who really need it!'*. He requested more and more activities on the farm, seeing how deep knowledge of processes is developed: watching the rain and knowing that it is going to help the oats grow; that the animals need you to be responsible for their welfare; that if you throw some grain to the chickens they will run about pecking enthusiastically.

Luciano developed a relationship with Biodynamic preparations, seeing immediately that it all made sense. One day, still wintertime, he took off his shoes and socks and immersed himself in spraying the crops with the preps, experiencing how the elementals require our full and joyful participation in healing the land. He also loves working with animals and wants to further his education in animal care. At the moment he feels that he learns much from Henning and from young Ruben: *'I feel so satisfied when at the end of the day it is my turn to visit the animals, and tomorrow is going to be great because I am going to be working outside. I can't believe I can be so happy and fulfilled!'* He will stay at Sturts for as long as he can. On my last morning I went to the milking parlour and was transfixed to witness this ancient tableau of two youngsters hand-milking a very contented-looking cow and felt hope for the future, from my encounter with two such enthusiastic young husbandmen. May there be more who have the opportunity to access such rewarding experiences on the land and where the young have the opportunity to teach older generations as well as their peers.

Wendy Cook lives in Devon. She is author of the popular Biodynamic Food and Cookbook.

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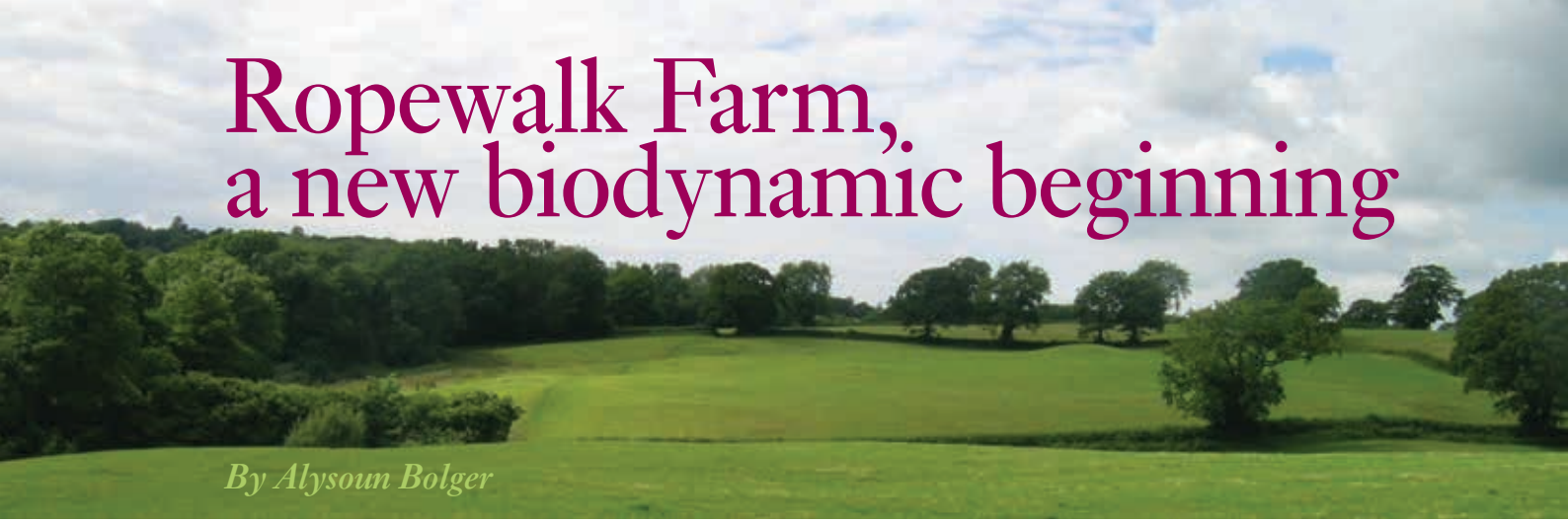


Ropewalk Farm, a new biodynamic beginning

By Alysoun Bolger

As the coordinator and one of the teachers on the Biodynamic Agricultural College's Biodynamic Principles and Practice Course, I am always eager to know how the course is from a student's perspective. We ask for feedback at the end of every unit, but it is rare to have an extended conversation with a student focussing on their work in the world of biodynamics and the role of the course in that work. So for this article I took the opportunity to interview Nicola (Nick) Marson, one of the students who began the course with the very first unit and is now in the process of setting up her own biodynamic holding. What follows is a rather brief report of our much longer conversation.

Nick said that when she was pregnant she became aware of Steiner education and biodynamic agriculture. As she and her husband were contemplating how they wanted their children to grow up, what education, environment and sustenance (both physical and cultural) their children might need, it became increasingly clear that Waldorf schools and biodynamic agriculture articulated principles and aims that interested them. Neither Nick, nor her husband Alex came from a farming background, in fact their agricultural experience extended only as far as raising orphaned lambs (Alex), a degree in Environmental Science (Nick) and dabbling in growing vegetables. They were one of several families in the area who were curious and within their community an interest in the biodynamic approach was growing. One family already owned a farm and began conversion, several others began with allotments or small holdings, and as they supported one another, discovered and read more, a biodynamic approach 'seemed so right, to make so much sense'.

This interest resulted in an initial experiment of purchasing a farm, which in the end was a valuable learning experience but not a long-term proposition. Half-way through this learning experience Nick began the online Principles and Practice Course, initially with the Fundamentals in Biodynamics Unit and then proceeding on to the Farm Organism. She said that the first unit really allowed her to 'get her head into the subject', to learn about the developments that led to the original lectures and the changes in agriculture since. With the second unit and their first piece of land, Nick had the opportunity to observe it through the idea and ideal of the Farm Organism, taking a structured approach to seeing and understanding the land, soil, plants, animals and people, asking questions of herself and the farm. Why are there so many docks in that field? Why is it always damp here? What can we do here?

With the ending of the first project, came new opportunity and possibility. With children in the Steiner School in Frome, Alex and Nick had a small area in which to search for farmland of their own. Surrounding farms are primarily large scale, industrial farms and most farmland is bought up quickly, often above market price. But a small strip of 60 acres became available, with limited access (for large tractors) and backed up against a housing estate. The farm has been without a farmer for 18 years, it has no buildings and many dog walkers. Over a few years of being on the market, everything which might be negative for a large-scale farmer has encouraged Nick and Alex to make this land their own.

So they are working with the local Parish Council, and Steiner school and planning to work with the local Parish School from the beginning to create a truly social/educational aspect to the farm. They are interested in using horses for draught power, so no large-scale access is needed. They are wanting to include allotments as part of the farm so that they can provide possibilities for gardens to their neighbours on the housing estate. The opportunities for collaboration are manifold, even extending to supplying produce to the local Steiner school that cooks all of its own biodynamic and organic lunches. They are hoping that this level of engagement with the community will lead to conversations over the fence, one of the most successful ways of introducing biodynamic growing to an interested audience!

The Biodynamic Principles and Practice Course has been accompanying Nick and her family as they move towards becoming farmers. She said that 'every topic and unit has expanded her awareness and has been thought provoking' and at the same time she is 'always wanting to learn more!' She emphasized that the flexibility of the course has made it possible to fit in and around their lives, even with three children under the age of nine. She also commented that although she loved the first units, she also thought that the course itself was developing, adjusting and improving as the additional units have gone live.

A blank slate of a farm is exciting and intimidating and it seemed from our conversation that Nick and Alex are researching, contemplating and planning thoroughly so that they can do the land justice and build a new thriving biodynamic farm, at home in its context both socially and agriculturally. With only three more units to go, we hope the course will continue to accompany Nick and Alex in this new beginning, and to keep provoking new and interesting thoughts in connection with their adventure.

Alysoun is coordinator of the BDAC online course and lives in Stroud. For further information about the the online course, see: www.bdacollege.org.uk

Animal Communication

By Julie Moore

Whether for the pleasure of their company, to use or consume, directly or indirectly, millions of animals are part of everyday life. Whilst intensive livestock farming of the modern world is far from honourable, animals on a biodynamic farm are treated with great respect.

Imitating the self-sufficiency of nature, a mixed farm with livestock and fodder crops is the ideal set-up for a biodynamic farm. The farm should be a self-supporting closed organism in which all the different organs interrelate properly with no one organ producing more than is needed, the exception being for human consumption.

Animals ensure that there is a cycle of substances that permeate life forces. They're fed from crops grown on the farm and in turn, those crops, along with food crops are fertilised with composted manure from the same animals. They strengthen food production and in turn benefit by being able to eat grain and grass of the highest quality.

Animals move freely and are not rooted to the earth like plants. Whilst plants need minerals, water and light to flourish, animals need living matter in the form of plants or other animals to survive.

Both plants and animals have physical bodies. However, animals possess a sentient body through which they can express themselves; in short, animals have a consciousness. They feel all kinds of different sentiments: pain, suffering, fear, compassion, friendship, joy and love.

Photos © Julie Moore

Whilst animals can express themselves through behaviours such as digging a hole or making us hear their call; they also share a common language with us — telepathy. We can all rediscover this lost language by going within ourselves in silence and relearning how to connect spirit to spirit.

'Anyone can communicate with their animals, but it has to be learnt properly so people understand who the animals really are and respect their nature. It's the depth of intuition inside everyone which needs to be reawakened in the right way,' says Laila del Monte, one of the modern pioneers of animal communication in Europe.

'I began communicating with animals as a child, although I didn't know it was "communication" at the time because it was completely normal to me,' reflects Laila. *'I grew up on a farm on the Balearic Island of Formentera – there were goats, donkeys, sheep, pigs, rabbits and chickens. All the animals were raised for farm work or eaten; they had no other purpose. I used to defend the animals – I'd tell the farmers what the animals were feeling. They thought I was a witch and didn't believe me because to them, the animals were in the field working and couldn't possibly have a consciousness.'*

Animals are able to perceive things in a remarkable manner and with great accuracy. *'In my communications with animals, I often find that they have access to incredible information. You have no idea how much they can feel – they can give us very relevant information,'* explains Laila. She continues, *'Animals do not judge us and they feel no resentment despite our*

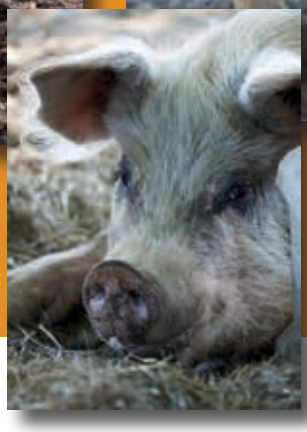
Millions of animals are part of everyday life.

Animals possess a sentient body through which they can express themselves

Animals feel all kinds of different sentiments

Animals move freely and are not rooted to the earth like plants

Animals ensure that there is a cycle of sub-stances that permeate life forces.



Animals have a consciousness

actions. We have much to learn from them, the most important of all is unconditional love.'

Laila works with individual clients, veterinaries, animal breeders, horse trainers as well as the French National Equestrian team to resolve troublesome issues: cats that are scared, jealous dogs, aggressive horses that refuse to jump or spook easily. *'The situations are often reflections of the deep unspoken emotions of the humans around them. For example, a cat can be aggressive towards a husband if the wife is resentful or has angry thoughts towards the latter. My role is to reveal the source of the "issue" by penetrating many layers of blocked emotion.'*

'Communication is a spiritual experience for me,' explains Laila. *'It's about developing consciousness - you have to work on yourself and understand yourself.'*

Communication isn't just about images, it's about receiving and transmitting all forms of perception i.e. images, physical and emotional sensations and thoughts. *'When communicating, it's important not to ask questions,'* cautions Laila. *'You'll have an answer already formulated in your head and will start interpreting things that you want to hear or already know. It's only possible to communicate by practising inner stillness; there are many techniques such as Zen, yoga or Buddhist techniques. In so doing, you'll be listening to what's around you and will be less taken in by your thought process. What's around you comes alive and you're able to hear and listen to it. It's necessary to be aware of any information you receive, whether in the form of images, thoughts or feelings and study it to see if it makes sense,'* advises Laila.

Laila concludes, *'I feel that it's really important that one learns to communicate with animals because it's only with communication that one really understands in-depth and inside ourselves how an animal feels and thinks. It's really the only way - it's not just analysing behaviour. If farmers understand their animals, we won't have the same utilitarian approach that we see today. People are more aware that animals have a consciousness and every time someone changes their consciousness, it affects everyone around them.'*

Whilst we work with Nature's life forces, rhythms and spirits it is imperative that we also acknowledge and connect with the spirits of our animals so that we can understand who they really are and treat them with the reverence that they deserve. We have much to learn from them on our evolutionary path if we are willing to connect our spirit to theirs.

Animals share a common language with us- telepathy

Laila del Monte is one of the modern pioneers of animal communication in Europe

We have much to learn from them on our evolutionary path if we are willing to connect our spirit to theirs

Laila del Monte with a goat

If you are interested in reviving your own deep intuition in order to connect and learn more about the animals in your life, Laila del Monte will be holding a weekend seminar on Animal Communication at Emerson College, Forest Row, East Sussex on 5th and 6th December 2015. Further information about the seminar can be found on Emerson College's website: http://www.emerson.org.uk/events-at-emerson/item/animal-communication-for-beginners

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The Sun-Hive goes to prison

By Dan Docherty

Photos © Stephen Hammond

"Eighteen bundles of biodynamic rye straw- cleaned... (tick) Six stands, starters, frames, spray bottles, scarlas... (tick) Six fids and bodkins..." fids and bodkins!? How on earth are we going to get them through security?"

Peter reassures, *'it has all been okayed.'*

So it was with a mixture of eager anticipation and trepidation that Peter Brown and myself set off for a three day Sun-Hive making workshop with inmates of Rye Hill Prison. Our arrival transpired to be somewhat illusory as the 150 metres from 'Prison Entrance' to workshop area took an age as gate after security gate was negotiated. Viewing mirrors under our van (among other things) indicated to us that security was a serious business here.

We took a good look around: square brick buildings with small barred windows enclosed by razor-wire perimeter fencing sitting in an uninspiring landscape of arable monoculture. The prison's wish to pace a number of hives within this barren desert was immediately bewildering to us. How will bees survive here? And who will be collecting the swarms from the inevitable cluster point: high up on that razor-wire fence?! Are ladders even a part of 'Prison Miscellaneous'?

Finally arriving at our designated workshop space we were astonished to experience the powerful effect of a cluster of joyous cosmos plants transporting us with their beauty back to a land of colour and life.

'We'll be planting a whole lot more of these,' said our assisting officer with enthusiasm. *'See that strip of grass that skirts along the perimeter fence? We've plans for that too.'*

Moments after the van was unpacked the inmates arrived: a motley crew of a dozen or so with a fair amount of argy bargy and banter between them. However, rapt attention when Peter began his introductory talk.

Already aware to some extent of the plight of apis… through their impressive efforts in creating a small organic garden in the prison grounds (a project initiated by Garden Organic), the listeners appeared moved by Peter's retelling of the Sun-Hive story. A story about German sculptor Gunther Mancke and his tireless pursuit to find a form for a beehive that was in sympathy with the 'Bien'- the hive as a whole organism, and not simply designed around convenience of honey production and harvesting. The Bee lectures of Rudolf Steiner were also alluded to: … *'The bees live in an atmosphere completely pervaded by love.'* Steiner also warned of the catastrophic consequences for the bees (and humans as beings dependent on the bees) if such invasive practices as artificial queen rearing and natural swarm suppression were to continue. *'He was on the money with that one'* comes a voice *from one of the listeners. 'I'll say!'* chimes in another.

Peter tells of his first meeting with Gunther Mancke; how he and Heidi Hermann of the Natural Beekeeping Trust offered to bring the Sun-Hive to the UK as a NBKT and Biodynamic initiative. G. Mancke's book charting the Sun-Hive's development and including specifications on how to build the hive would be translated into English and regular Sun-Hive making workshops would be run in conjunction with Tablehurst Farm in East Sussex. The response to the hive has at times been overwhelming. Peter explained: *'Demand for the workshops; invitations to present the hive at events around the country are regular and ongoing. And now…The Sun-Hive goes to prison!'*

The eagerness to begin weaving was palpable. And as the workshop progressed and the hives began to form so to the atmosphere in the group took form also. The process of repetition - Fid and bodkin piercing coil, cane threading through, wrap, pull tight, add straw. Repeat. Pierce coil, thread through, wrap, pull tight… Repeat ….Repeat … Repeat. A mantra-like meditative state develops. It is calming. The attention of the inmates on the task in hand is tangible. I found myself humming a traditional Native North American weaving song:

'Weave and mend, Weave and mend, Gather the fragments safe and mend the Golden Circle …'

Later as Peter and I reflected on the experience, we spoke about the healing potential of the golden circles mending together to form the Sun-Hive on the inmates involved in the process. An empty vessel yet, though soon to be offered as a 'body' for the 'Bien'- that Being so intrinsically connected to the heavenly realms of light, warmth and love. Perhaps the warmth of the 'Sun' colony can, in a so-to-say homeopathic way, re-awaken the cold confines of the prison colony with a mood of wonder and reverence.- qualities ominously absent from the current cultural mainstream. 'We have become' according to one contemporary pioneer of holistic and healing agricultural practices - HRH The Prince of Wales, *'dangerously numb to the Sacred.'* The inevitable *'lullaby of materialism'* (R. Steiner) that ensues does not necessarily result in a peaceful and passive sleep . The Rye Hill Prison Sun-Hive makers have doubtless been villains guilty of heinous crimes. Surely they're victims of a society that has endorsed a near total schism between matter and spirit: heaven and earth.

The individuals involved in creating the organic garden prison project that now incorporates the Sun-Hive initiative, must be applauded. It is a small though crucial step toward re-igniting our dulled and numbed sense for the sacred.

Telling the Bees

By Heidi Herrmann

Photos © Amit Lennon (www.amitlennon.com)

When you have bees in your life you tend to talk to them, tell them what's happening and consult them. In that vein, we told our bees some time in Lent that they had to move. The pleasure of their company was wanted in a prison.

Years ago, the Trust had received a message from Dave Bloomfield, Substance Misuse Services, HMP Rye Hill, to inquire about teaching convicts to take care of bees and make hives.

'Your approach to bee husbandry would suit us here; we'd like our people to learn to give rather than take. We envisage gardens with sun hives'.

COULD IT BE TRUE?

The British penal service is, regrettably, the shame of Europe. While other countries succeed in reducing prisoner numbers dramatically without descending to lawless anarchy, in Britain they are at a record high.

But at Rye Hill, soon, there would be meadows, and a garden! Offenders would learn to sow, cultivate and reap, make beehives, become beekeepers. A bee-loud glade and a hive for the honeybee, in a prison! We were delighted to get on board.

It was our first encounter with committee culture – nothing much happened for months on end, not counting an avalanche of correspondence, followed by silence. Had the plan been shelved? Not entirely, but the prison would become a specialist unit for people convicted of sexual offences. Ah, well. A year later a greenish light: the project is before the management! Approval is imminent. Could we reserve a date for a hivemaking workshop please? Making sun hives away from home base is a big hassle, involving lorry loads of specialist equipment, straw, two instructors etc. Dates had been offered, accepted, then cancelled. In some exasperation, but hopeful still, we offered another. Next came an official request from the governing committee: where was the evidence that caring for bees was of therapeutic value. Could we provide it? Time to throw down the gauntlet, we reckoned. We regret to inform you that the submission of evidence about the therapeutic value of caring for something, especially a creature vital to mankind, is beyond the remit of our charity; abundant literature testifying to the benefits of vital and wholesome pursuits on the human soul is extant. You may wish to peruse it. Perhaps they did. Perhaps the bees invaded their dreams, who knows – the date pro-offered was accepted. Dan Docherty describes the world's first sun hive workshop in a penal institution on page 35.

Making a home for bees mysteriously connects the maker to the bees. In the days of steadily weaving a hive with loving hands, inner pictures arise, tender bonds are woven with the future bees. Sun hives are designed for the heights where bees want to live. They need special stands and covers. When the prototype appeared from the prison's carpentry workshop, Peter Brown approved. An impressive stand had been designed for the new hives. And there was even talk of the prisoners' new skills leading to a novel cottage industry: making skeps from biodynamically grown rye straw for the beekeeping world outside.

BEES FOR SUN HIVES

Six perfect hives now awaiting, the prison asked us to procure bees. We scoured the bee market for colonies naturally reproduced from swarms, untreated, raised on organic/biodynamic land. Such bees don't exist outside our apiaries,

and those of a few like-minded souls. Bees are local creatures, adapted to the flora and fauna of their origins; moving them is not ideal. Gareth did not relish the prospect of parting with any of his bees, but procuring bees from chemically treated stock was not an option, and a journey from Sussex too hard on the bees. One, not six, would go, we decided. When you've settled, dear bees, and if you like the place, go forth and multiply. Six perfect hives awaiting. Sun hives!

The hive embodies an ideal. Guenther Mancke, the German sculptor and bee father, says: … the impetus for the hive's development came from the need to free the bees from a principle at once earthbound and cuboid, one that goes against every law of form – we are dealing here with laws that are a particular expressions of a creature's life. There are many reasons for bees' present-day afflictions. We can be sure, however, that one of these is the fact that the creature, as a physical and ethereal entity, can no longer live its life as it is meant to.

At about mid morning, we arrived at the prison with a hive full of bees, and – on my part at least – mixed feelings. We introduced ourselves. Peter Brown had been before and knew the ropes, or rather the walls. Photos were taken, and fingerprints too. The whole prison was aware of the arrival of the bees. We were given a list of the items that cannot be taken inside. Neither bees nor hives featured, so we waited our turn to go through the entrance gates with the land rover and its cargo. Just as our turn arrived, a medical emergency was declared: no vehicles in or out until the ambulance had come, collected the patient and departed. Nothing happened for a very long time. I mean, nothing! My bees stuck in the back of the car. Not a great start. I started fretting for my bees lest they overheat. Locked up, taken on a few hours' car journey, staying locked-up. A poignant picture, given the circumstances. Thankfully it was cool, and a slight breeze would reach them. Finally, more than three hours after arriving, we were ushered into the vehicle search compound. We were patted down. The vehicle was searched, but not the hive. The inner gates opened and we were inside. When we arrived at the garden area with our precious cargo the prisoners gathered round in keen anticipation: *'Are you the beekeeper? Is this our hive? Where are you going to put it?'* Prisoners are allowed budgerigars and, now, bees. That leaves a whole alphabet to play with. Before the hive entrance was opened, crowding prisoners had to be shooed back to a safe distance. After a hive has been closed up all day, the bees often rush out in a state of some excitement. This can lead to awkward introductions. As it was, only a few bees came out to explore their new quarters. Thankfully, leaving the prison was far easier than getting in; which left me something to ponder on the drive home.

CONVICTS AND BEES

Now it was time for the bee course, to tell the prisoners about the bees, how they live and what they need. Getting lost in the triste environs of the prison on my way there, my heart sank. Where would our bees find food in these

Photos © Stephen Hammond

monotonous wastelands of chemical farming? Bees go far for forage, it is true, but there wasn't much to be seen.

By the time Gareth and I had declared our intent, stowed away our bags in lockers, had fingerprints and photographs taken, waited, got searched and walked on command through screens and armoured doors to emerge in the first wire-fenced compound, all I could think of was Dostoyevsky. The degree of civilisation in a society is revealed by entering its prisons. This was bleakness taken to a whole new level of menace. Gates, treble locks, red-lettered warnings of huge fines for security breaches. Razor-wire coils stretching into infinity. The prison is run by security services giant G4S. 'Securing your world' is the company's maxim. Outsourcing of penal services is a growing trend in Britain, following in the footsteps of the US.

We arrived in the project area. There stood a little white hive. Gareth's bees! Content looking bees, returning with pollen loads. Exceedingly comforting to see. The garden – the manifestation of the 'horticultural intervention' was buzzing with life. Casually dressed men tending to weeds, planting, watering. Lettuces, broccoli, herbs, sweet williams, wallflowers in pristine bed of rich dark earth. Winding paths lead to polytunnels, sheds and a pond, a very pleasing layout devoid of hard lines. We learnt that the prisoners, involved from scratch, had pleaded for meanders and curves. Straight lines dominated their lives here. We spotted a little stand of rye swaying in the wind – the prisoners had saved the seeds left over from the sun hive workshop detritus and planted them! Then we saw the hives, woven in prison, from rye straw grown at two biodynamic farms, Tablehurst and Hungary Lane.

The men who had made them would now attend the bee course. Except for one who was barred because of a violent incident. Violence is rife in the hell of incarceration. A prison is like a gigantic quarantine facility. Terrifying, demeaning, ugly. Staff shortages spell extended lock-up periods for inmates. Self-harm, suicides, depression are pervasive.

In a hive, every single bee always knows what to do and when to do it. And does it, we explained, after our students had introduced themselves. All men, most on life sentences, all ages. Every single bee relates to the other, and works for the weal of the hive. All is shared. All that is brought into the hive – nectar, pollen, propolis, water – is for the good of all. Everything is shared. Bees work together for the good of all. The queen, that heavenly creature, is the mother of all. We showed them pictures. Told them about the young nurse bees who visit their charges thousands of times before the cradle is closed with wax. It is always warm inside the hive. The bees make sure of that by thousands venting their wings. The bee is perfectly fitted to the world into which it emerges. The bee babies must never get chilled, they need the same warmth that we do. The men began to engage. Questions galore. Good questions. The sessions were short. Lock-up times are tightly prescribed. After lunch, one of the group was missing. Bad news from home had upset him, so

Photos © Stephen Hammond

he stayed locked-up.

Attention was being paid to every last detail. We learnt that many of the men had already taken to standing near the hive in quiet moments, watching the bees come and go. How quickly will the hive swarm so that we can have bees in our sun hives? Engagement indeed! Steve Hammond, one of the instructors here, told us about the huge changes he'd seen over time in the men working in the garden. It's not like this, normally. You should see them on the wings. Tense, closed, unpredictable. They are different people when they work in the garden.

Next, swarming was the theme. What happens in the hive before the bees take-off for the wild abandon of swarming. Will our bees do it? How do we tell? When? They were keen on the detail, on imagining the swarm that might issue and hopefully set up home in one of their hives. What if the scout bees find a better place over the wall? Will we lose our bees? We suggested that the bees might well choose to stay with them. They were animated now, keen to rush out and get their sun hives up so that the scout bees, the house hunters could find them. There was plenty of time. It was mid Easter. The men were relating to their bees now. Tomorrow, weather permitting, we'll have a look inside the hive, was how we left them. Remember to prepare for it.

MEETING THE BEES

Inner calm. A quiet attitude. No anger, no fear. Would these troubled individuals be mindful of what we had impressed on them? Had they remembered to think about meeting the bees last thing at night? Bees are highly sensitive to people's emotions and react in kind. Watch yourself, they say. Bearing in mind that all of the prisoners were here because of acts of violence, it was a tall order. But Gareth, bent over the busy hive in shirtsleeves, trusted that they would be mindful and the bees forgiving. We assembled around the hive. Things can go wrong quickly if you're not on your best behaviour. The bees remained calm. The men pointed out the pollen-bearers to each other. Then, silence, save the music of thousands of wings as the bees were leaving and arriving at the hive. Were they aware of us, aware that something extraordinary was unfolding for the men watching them?

Gareth gently loosened the boxes. Two men slowly lifted the top, others took turns to draw closer to gaze at the mass of bees in full view now. Indrawn breaths. What were the men feeling? Nobody spoke. Hundreds of bees were circling and spiralling above our heads, chanting softly. Of course the bees were aware of us. The circlers above are the watchers. They keep an eye on things, on behalf of the hive. Ready to deploy their defences should danger arise.

A face appeared at one of the barred windows behind. *'That's A., the one who made the sun hive ever so well'* Steve explained quietly. A reminder of where we were. When the bees draw you into their world, all else fades into oblivion, for a time. Bee time.

The hum of the bees became louder now. A certain pitch expresses a higher state of alert. It's best to take notice. We closed the hive and thanked the bees.

The prisoners' first encounter with the Bee had gone exceedingly well. But we had noted that one of the men was constantly bothered by a single bee that buzzed around his veil insistently. He resisted swatting it. He moved away and came back, the bee with him. When a bee lands on you, say hello. Do nothing. He hadn't forgotten. Self-control is essential in the presence of bees. Sitting quietly on a bench in the garden a little later, he confided to Gareth that he had been feeling very angry. *'Couldn't shift it. When I am feeling better, I'll go and stand by the hive and say sorry'* he said, *'It wasn't fair on them'*. The bees were already showing that they have gifts to bestow more precious than honey.

The Rye Hill Garden project is bearing fruit. Prisoners are keen to be involved. The work is voluntary, there is no pay. I am proud to be working here, with these guys, I am proud of what they achieve. Steve Hammond told us; he took early retirement to follow this vocation. Robin Baxter is employed by Garden Organic. For both working here is full of rewards. The prisoners can feel that. Robin and Steve are treated with the greatest of respect.

The project's impact was evaluated by Coventry University. '*Participants related well to the activity of gardening and were aware that in undertaking the programme they had a common bond; this is important as prison is almost always a very individual experience. In addition, the staff working directly with participants on the Master Gardener programme were accepted by participants to be part of the community, and viewed themselves similarly too. A community spirit was created so that all felt part of something greater than their own role'*.

The food grown in the garden is for the inmates to keep. To eat or share around on the wing. Steve tells me that some of the men had never tasted a salad leaf, or fresh vegetable. But they have come to love what they grow, their lettuces, herbs and fruit. Consider this against the dispiriting scenario described by the Howard Trust: Prisons are so unhealthy that people are considered to be old at 50 years of age. The poor diet, lack of exercise, lack of sunshine and daylight make for poor physical health. Many people going into prison have already lead unhealthy lives and the prison regime compounds that. The budget for food per prisoner is less than £2 per day. Cuts in staff numbers means that prisoners often get no outside exercise, etc.

The evaluation report describes how prisoners were seen to be supporting each other in countless ways, with gardening tasks, making each other beverages, supporting each other with literacy and numeracy skills, even recognising when someone was having a difficult day and offering help and solace. The warmth and kindness shown them by Robin and Steve, who guide the garden work, and Paul Evans, who manages the project, were noted by all the prisoners whose diaries formed part of the evaluation. It is great to be part of a team, it makes you proud to see what we have done together. We have achieved quite a lot.

Convicted criminals bring to prison issues that evolve directly from poverty, social inequality, broken homes, schools and communities, illness, alcoholism and addiction and estrangement. Every day prison reality is grim, brutal, demeaning. In a piece entitled *'Britain's prisons reek of a desperately backward nation'* Sir Simon Jenkins, journalist and editor, says: Not only does Britain imprison far more of its citizens than any other country in Europe, it imprisons for more offences and for longer terms, and is obsessed with incarcerating women and children. The British are prison addicts. We scour the country for reasons to imprison. Historic sex abuse is our latest obsession. Every week someone over 60 is jailed for actions unreported 30 or 40 years ago. In the past year, 700 people have been sent to jail for this crime, making up about half of the rise in the prison population.

Seen in this light, or darkness, growing flowers for bees in prison gardens might offer new perspectives for 'securing our world'.

BIRTH OF BEE COLONY

The swarm so keenly awaited by the prisoners duly happened. Thousands of bees poured from the hive to rise heavenwards and join together in a wild dance, circling in the heights with joyful abandon, each bee perfectly attuned to all others. Imagine the sheer delight of a swarm within those walls! Please stay, dear bees, don't fly over the fence, will have been on the mind of all who stood watching the formation wavering to and fro, coming breathtakingly close to the razor-wired wall – hovering – moving back again towards the garden. The bees finally settled on the canopy of the newly installed sun hive. Who chooses to end the dance, who decides where to land? That which guides the wisdom-filled rhythms of the hive eludes us, is not accessible to what can be gleaned by our ordinary senses.

The bees now had to be coaxed from the canopy of the hive into the hive proper. Steve and two prisoners stepped into the breech, all hopes upon them. Security had to relent and put back the two prisoner's lock-up time. They had been on the bee course, and now nothing could go forward without them. After four exhausting hours atop a high ladder, and a series of trial and error manipulations to get the great cluster to move inside the hive, the bees were in the sunhive at sunset. A truly fantastic achievement for Steve and his men. Their exhilaration was boundless. The first swarm is a happening never to be forgotten.

The project's open day celebration was a great success. Our bee conservation project is truly rewarding, says project manager Paul Evans. *'The bees received massive attention, they were out in force. We were watching them closely. We think they feel at home now. So we now have our very own Rye Hill bees in our Rye Hill made sun hive, in a garden we created together,'* Steve wrote, *'Do I sound proud or what?'* We all share Steve's sense of pride, as well as his sadness upon learning that Rye Hill prison which already houses nearly 700 inmates, is destined to become a mega-prison. A large area earmarked for flowering meadows has been withdrawn to make space for more cell blocks.

The bees responded with unequalled fecundity as if to assert themselves and blazon their message in this strange world where prisons grow faster than flowers. They are knowing, the bees. Thanks to social media we now get instant news about them:

Stephen Hammond @steveh9491 May 17 So excited, no sleep yet. First swarm collected & only one sting. Not bad.
Stephen Hammond @steveh9491 May 26 Bees swarm again at HMP Rye Hill, witnessed incredible scenes and still had the luck to collect and add to 2nd sunhive with inmates help.
Stephen Hammond @steveh9491 May 27 Quite amazing 3 swarms from 1 hive in 11 days, have some great photos for you. Great work from the prisoners at HMP Rye Hill.
Stephen Hammond @steveh9491 May 27 Bees must love it at HMP Rye Hill, 3 swarms in 11 days, from 1 to 4 hives in the blink of an eye. Plus 4 baby wagtails in raised beds.

Whitsuntide at Rye Hill prison 2015. Three sun hives alive with bees. Many thousands of bees have swarmed into the prisoners' lives from the mother hive. Three new bee colonies born within those walls. When I returned recently with Peter Brown to inspect the new colonies, we were delighted to find that the bees had already caused much wonder and excitement. The sunhives, mounted high, make for a strong presence in the prison yard. Where previously the eye travelled inexorably to the razorwire on top of the wall, one cannot but look up to the bees now. A gracious change indeed.

Those of us privileged to bring to Rye Hill prison biodynamic rye, sun hive making skills, as well as bees and their wondrous ways, share a deep sense of gratitude – for the kindness we have met, for the hope embodied in the growing gardens, and all the people who have opened their hearts to the bees. The bees are doing good work here, they are loved and most keenly observed. Now the prisoners will learn how to take care of them through the seasons of the year. They will be bee guardians. Bees are in their lives now. May it help them and offer much solace and understanding.

Bees always foster change in the lives that they touch. They are good at that, it's what they do best.

Rooting for change

Exploring ways to keep our pigs outdoors at Tablehurst Farm to benefit both the health of the pigs and the health of the soil

By Peter Brown

Pigs can have a place on most farms, on one scale or other. If we follow the principles of a biodynamic farm then we will only keep as many pigs as we can feed from the farm itself. A market garden might keep a couple to use waste vegetables and maybe help cultivate the soil; a predominantly dairy farm will likely not have need of them, unless they make cheese in which case the pigs become indispensable in being able to utilise the whey produced. Again, perhaps it is a predominantly arable farm with plenty of grain and there is a local market for good pork, this will make pigs very attractive as it will help maintain the fertility of the farm as well as giving added value to the grain produced. Whichever it is, the question is how best to keep pigs?

INSIDE OR OUT AND WHAT ARE THE PROBLEMS?

Pigs are happiest when they can dig in soil, and in woodland they are particularly happy but unless there are very few of them they can cause a lot of damage there. The fact is they can do a lot of damage wherever they are outside, by rooting out vegetation, creating mud and thus erosion, making holes and pushing through conventional fences. On the other hand there are few situations where the pigs are happy inside as they need the possibility to properly dig and explore and use their sense of smell. From my experience what works best is if they are sharing a deep litter yard with cattle. This is because there is not the strong smell associated with pig buildings and they love rooting in old hay and silage, fresh cow pats and the bedding; they are never bored! To make it work though, it is necessary to have a small penned off area with a small opening or gateway which the pigs can access but which the cattle cannot, so that the pigs can be fed without disturbance. It is advisable not to have small weaners in with lactating cows, as compared to youngstock or dry animals, as I have experienced a number of situations where they have learned to drink milk direct from the cows! The cows did not mind but the calves did.

These are pigs out for only a few weeks and already the ground is getting compacted.

Photos © Peter Brown

Pigs, of course, do belong outside and that is where they should spend most of their lives. This is usually done by keeping the pigs in pens made up of two strands of electric fencing. Over the years at Tablehurst I have tried many field layouts. In the early years we kept the pigs out all year and in the middle of a wet winter the soil soon changed to a kind of soup; the kind where it is easy to lose a boot while feeding them! The pigs were not particularly bothered so long as they had a nice dry and warm pig arc with bedding to retreat into. But for the soil itself and for the farmer feeding the pigs it was not so good! This problem has a lot to do with soil type and can be different on sand, or some gravels, where one can easily keep the pigs out all year.

At Tablehurst we bring our pigs inside in late autumn and put them out in a new field each spring. My experience is that for the first weeks of the pigs going out they are wonderfully happy digging up most of the grass and rooting in the soil. Later, if wet this becomes mud and if dry the soil is inclined to become trodden and bare and baked hard. The exception is the large holes the pigs dig near their drinkers, creating wallows. So, although the pigs have it better than most, there are clearly problems, particularly for the soil, as it sits bare for a number of months. These problems can be summed up as follows:

1 The pigs are out for only 8 or 9 months of the year and are brought inside for the rest of the time. This is due to our heavy soil and our wish not to overly damage it.

2 The pig field has to be moved every year so as not to put too much manure on the soil and to prevent a build up of intestinal worms.

3 The moving is a lot of work and entails removing and knocking in posts for fences and drinkers, taking down and then erecting wire electric fencing, moving pig arcs onto trailers and taking them to a new field, taking away and laying out again water and whey pipes and drinkers.

4 The field suffers quite a bit of compaction over the year and often particularly trying to remove pig arcs in muddy wet conditions at the end of the year with the JCB.

5 The field has large areas of bare, hard baked soil over some months. This is neither good for the soil or the pigs.

6 There are large wallow holes at the drinkers, which need filling in with a digger at the end of the season before the field can be cultivated, and larger or smaller wet muddy areas which make this cultivating difficult.

7 The manure is not evenly spread over the field as the pigs have their toilet areas so the growth is patchy in the following couple of years.

8 Crows can be a problem eating the food from the pens which receive ad-lib food.

9 All the pigs have to be brought into the barns at the end of the season which is a big, time-consuming job and then repeated in the spring when they are taken to the new field.

10 The whey system has to be re-installed when they come in.

A pig arc with floor and runners but too long on the same place!

11 The pigs use a considerable amount of straw in the yards, of which we do not have enough and is therefore being bought in.

12 Some buildings, like the lean-too along our main barn, cannot be used for their original purpose, which was the storage of our farm machinery and vehicles.

GOALS AND SOLUTIONS

So the question is can the system be improved? I would like to share some new ideas, which excite me, but I must clarify that they are only ideas at this point, with which we are at present experimenting. So what are the goals we would like to achieve in the pig keeping system?

For the pigs:
- That the pigs receive as much fresh green feed every day as possible.
- That the pigs have the possibility to be outside all year, that they can root in the soil and they also have a snug, warm bed.

For the soil:-
- That the soil is dug over nicely but is not eroded or damaged by poaching, being left bare over long periods, having large holes dug in it.
- That the pig manure is spread evenly over the field.
- That the field is left in excellent condition for following crops.

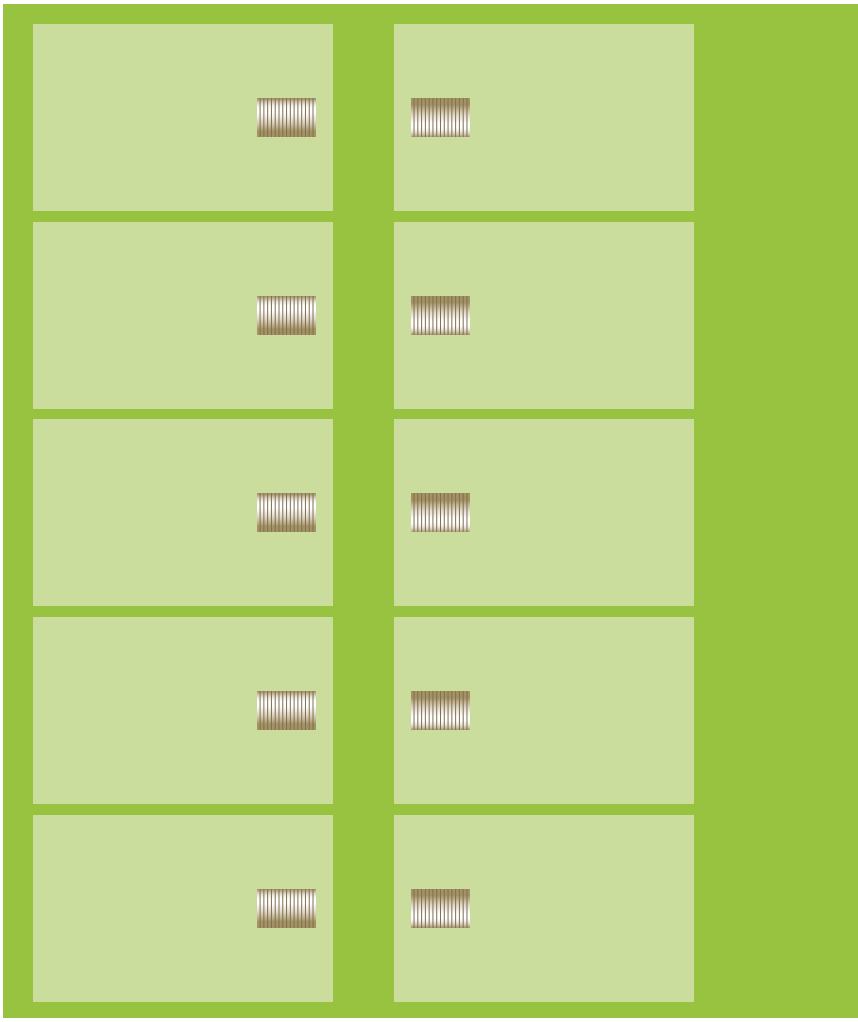
For the farm:-
- That it is not way more time consuming for the farmer.
- That it doesn't cost too much either in capital or for running.

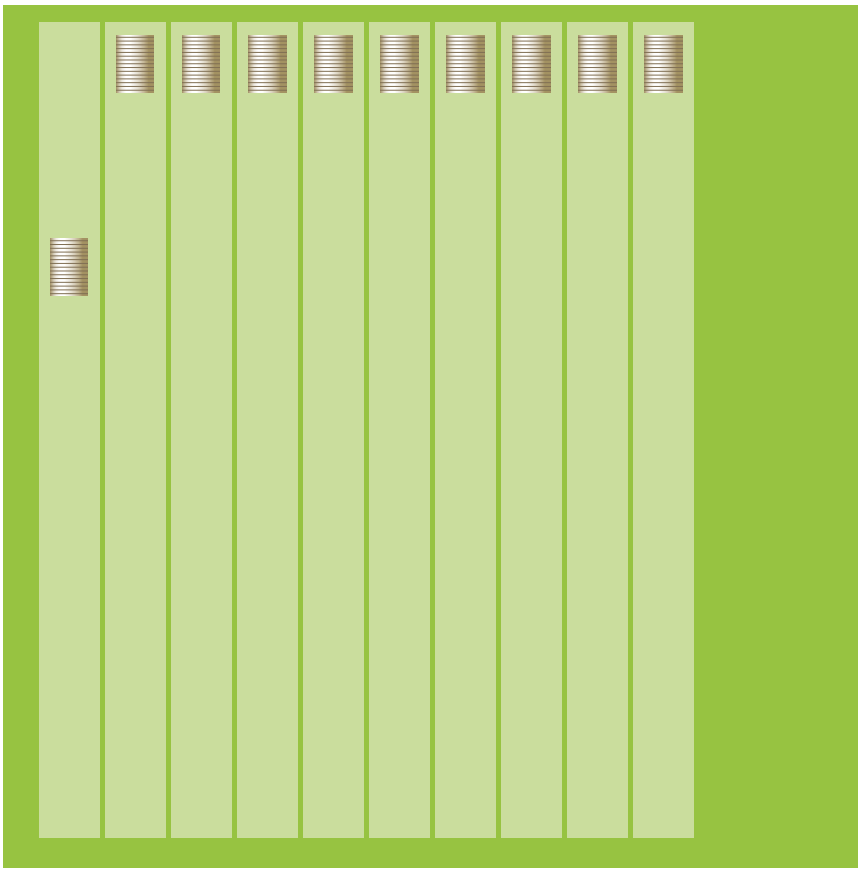
My ideas come from my experience with movable chicken housing in the nineteen eighties in South Africa and more recently what I have seen of Alan Savoury's techniques of grazing cattle and mob grazing. How could it work?

Instead of having the field divided into rectangles, using electric wire, with a pig house in each and a central feeding passage the new layout has all the houses lined up at one end of the field, each in its own strip which goes down the length of the field *(see both diagrams)*.

The idea is that the pigs and their houses move down the field so that they get fresh food every day and are never long on any bit of soil. Each strip might only be ten metre s wide and there is a short electric fence in front and behind each house. These short fences are easily moved every day to give the pigs a small fresh strip of ground, maybe a meter. How much you give will depend on the width of the strip, the number and size of the pigs and what is growing in the field. I have only ever kept the pigs on grass or stubble but this method opens up the potential to graze/feed them on a number of specific crops or mixtures. This would give them a lot more nutrition than just grass, especially in the winter. One could sow a mixture with kale or fodderbeet or turnips or a mixed green manure crop with up to 15 different plants in it and a lot of bulk. This will benefit the field tremendously, as well as the pigs.

Because the pigs will be moving down the strip, at say





Small pigs having just been given a new strip of grass. First they graze it and then they root it. Larger pigs root it much deeper and better.

a meter a day, they will not be very long on any part of the field. This means that the soil will be well dug over but not poached or compacted and the manure will be nicely spread. It does, of course, mean that the pig house will also have to be moved every few days and at least once a week. This is the biggest problem in the plan so how can we do this?

There are two housing possibilities with advantages and disadvantages and different costs. The one is using a special trailer which incorporates a pig house, feeders and water. This costs more but makes the management very easy. The house is very easy to move being on wheels, food and water do not need to be brought to the field every day, the pigs can be shut in easily at any time, be it to take them to a new field or transfer them to a lorry or livestock trailer. They can also lie under the trailer giving them cool shade in the summer and insuring all the ground is dug over well.

The second possibility is using the conventional pig arc. Most farms which have pigs will have arcs, but they will have no floor and so are not suitable for being moved often. By having a floor the house becomes warmer and drier for the pigs but most importantly it will use much less bedding as it will move with the house. We have made a floor on a 2.4m wide arc by putting six 6"x2" beams the length of the arc under a plywood floor. This means that it can be pulled like a sledge, so long as you don't try to go around corners. So how do we pull it? Well we do not want to drive on the field with tractors so the best is a wire cable and some sort of winch. Again we are experimenting to find the best and cheapest solution.

- One is to have a very simple winch for each house which can be made out of the robust wooden spools which are used for electric cables. One can attach a pole to it with a spike or pole through the centre into the ground. The wire cable can then be wound onto it by walking round in a circle, a bit like a donkey round a mill.
- An alternative is to have a strong electric winch, which can be moved to each strip in turn *(as is the case at Tablehurst)*. There are a number of different ways to do this and the best way will have to be found by trial and error.

Clearly the whole field system is dependent on finding a quick and easy system for moving the houses in order to make it viable. I am not able to go into details here in this article either of the trailer or the pulling systems but please do contact me if necessary.

FEED AND WATER

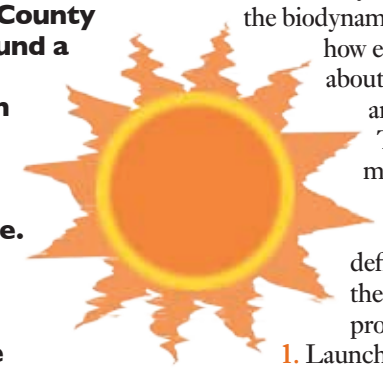
Pigs should ideally eat food produced on the farm, which would otherwise go to waste. Potatoes are a good example. When we used to grow a number of acres at Tablehurst Farm we used to sometimes grade out quite a high proportion due to wireworm. These we would cook and feed to the pigs and it saved a lot of grain. We also feed whey ad-lib to our pigs, which they love and enables us to get by with feeding quite a simple ration of beans or peas, barley or wheat, oats and rye and some dried kelp seaweed.

Lastly how does one get food and water to the pigs? Clearly if one is using the trailer method one can have a couple of months food stored on each trailer, which means the daily feeding is easy as nothing has to be carried to the field. With the pig arcs the food must be taken daily to the field. We fill bags with 15Kg food and carry them on an ATV with a trailer, which we drive around the perimeter of the field. For the water and whey we use pvc pipes which lay on the ground and can be moved easily. The drinkers we are using use a nipple which the pigs push putting letting the water flow into a part bowl from where they drink it. We are now using a concrete slab which the drinkers are on and which can be pulled or lifted with a front loader. This is fine in summer but it can freeze up in winter. We are therefore looking at metal wallows which the pigs love in summer and which hold a fair bit of water so that if there is frost for a few days in winter it is not a problem. If the fields have slopes one should think of using shorter wallows say 4 or 6 ft so that the water does not overflow so easily.

Biodynamic Farming in Ireland – *A Time for Renewal*

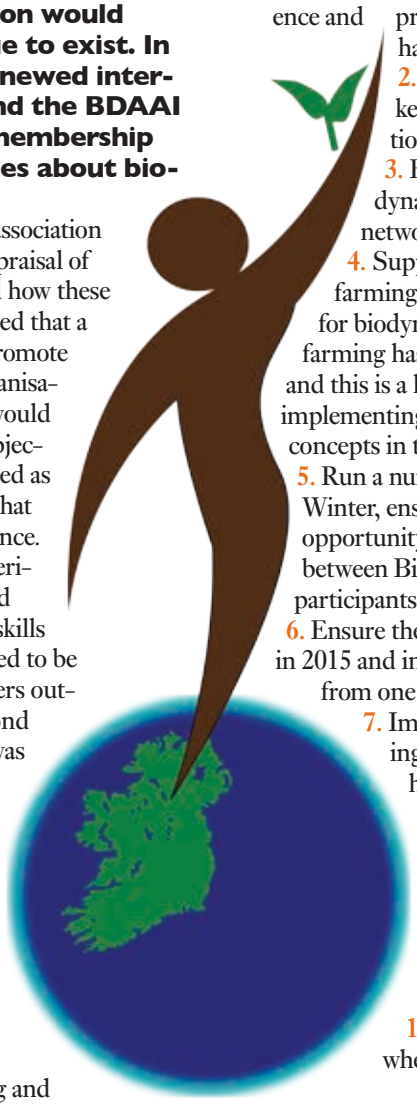
By David Wallis

The Biodynamic Agricultural Association in Ireland (BDAAI) was inaugurated in September 1991 and since then has strived to promote biodynamic farming in Ireland. From its inception it has remained a small association with an active membership of between 25 and 40 people. In its early years it was chaired by Anthony Kaye from Inis Glas in County Wexford. Activities centred around a Spring and Autumn conference with guest speakers invited from abroad. Over the years a small core of committed biodynamic practitioners were key to the association's continued existence. The ongoing support from the Camphill community was essential in keeping the spirit and activities of the association alive and without whom the association would have found it difficult to continue to exist. In recent years there has been a renewed interest in biodynamics worldwide and the BDAAI has experienced an increase in membership and a greater number of enquiries about biodynamics.



In 2014, the board members of the association began the process of making an honest appraisal of the aims and objectives of the BDAAI and how these were being delivered to date. It was accepted that a more proactive approach was needed to promote biodynamic agriculture. Being a small organisation with limited resources meant that it would have to be smarter in how it pursued its objectives. Two positive elements were recognised as key to initiating and developing activities that would bring biodynamics to a wider audience. The first was the members' skills and experiences: there was a wealth of knowledge and understanding of farming and gardening skills that hitherto were underutilised and needed to be exploited in engaging farmers and gardeners outside the biodynamic community. The second positive element was that the association was small: if change was deemed necessary it would be easier to steer the association in a new direction without leaving many, if any, behind.

Thus by the close of 2014 a number of key decisions were made and a set of activities decided upon. A first test of 'engagement' with other farmers and gardeners was the holding of a short, intensive soils course in Feb/Mar 2015, titled 'Soils, Biological Farming and Biodynamics'. The participants were a mix of biodynamic, organic and conventional farmers/gardeners. The exchange of ideas and views between the participants was very revealing. In essence there was a mutual acknowledgement that all farmers/gardeners have a deep connection to the earth and each wished to leave their farms/gardens in a better shape than when they started farming. It was very instructive for the biodynamic members attending the course to note how essential it was to express concepts and ideas about biodynamic farming in a communicable and understandable way to other farmers. This can only get easier with more engagement with the wider farming community.



Following on from the soils course there was a greater confidence in defining the next steps needed in 2015 for the BDAAI to renew itself and continue the promotion of biodynamics in Ireland:

1. Launch the New Website to reach a wider audience and provide information on what the BDAAI has to offer.
2. Develop formal relationships with the key agricultural organisations and institutions in Ireland.
3. Encourage members to attend Non-Biodynamic Events and improve our collective networking skills
4. Support the promotion of Biological farming: in this there is a great opportunity for biodynamic farming to expand. Biodynamic farming has proven that closed systems are possible and this is a likely objective of many farmers who are implementing and will implement Biological farming concepts in the coming years.
5. Run a number of soils courses in the Autumn/Winter, ensuring that all BDAAI members have the opportunity to attend, as well as maintaining a mix between Biodynamic, Organic and Conventional participants.
6. Ensure the Farm Apprentice Programme is begun in 2015 and increase the Approved Training farms from one to four.
7. Improve our biodynamic preparation making skills and bring in outside expertise to help.
8. Improve communications between members and the association through mailing lists.
9. Hold small workshops for members interested in discussing particular topics. Include non-biodynamic farmers/gardeners if they are interested.
10. Encourage the preparations to be used wherever possible.

One of the BDAAI members, Kevin Dudley met three participants whose first contact with the BDAAI was at the soils course in February/March 2015.

Kevin Dudley had a short chat with Trevor Harris and Alfie & Devon Beattie:

Trevor and Jane Harris have five children and have a 90ha organic farm in Cooltrim, Donadea, Co Kildare. The farm consists of 46ha of tillage and 44ha of grassland. The tillage crops are a mix of oats, triticale, oilseed rape, combi-crop (peas & barley). The livestock are a 100 ewe sheep flock, selling mid-season lamb and a 27 cow suckler herd selling two year old beef. The grassland stocking rate is 1.6L.U./Ha.

Trevor, how long have you been interested in organic farming?

I was interested in Organic farming from the time I was in Agricultural College. After college I came home to work with my dad who ran a conventional tillage operation. I very quickly realised that in conventional farming I was working for other people: the chemical and fertiliser company reps knew exactly what price our crops were making and basically sold their products at the highest prices the farmer could bear. I simply wanted to get off that merry-go-round, as for me it was not a system I wanted to be part of. I was also attracted by the idea of not using chemicals both for my own and my family's health and that I would be producing food that was chemical free.

When and how did you start farming organically?

Well I started farming organically in 1999 with sheep only – that was a major mistake and a steep learning curve. I started with a mixed bunch of bought-in hoggets and ewes, and lost a lot of them through poor parasite control in the first few years. The ones that survived were tough out and gave me a good hardy mixed breed to go on with. The flock is now a mix of Mule, Blackface & Texel ewes and I use Belclare rams on the flock. I also bought in a number of older (cheap) suckler cows of a very middling type and have been upgrading the herd since. I now have a herd of mainly Limousin and Charolais cross stock. On the tillage side I started with growing oats only and then added triticale and then wheat. It wasn't long before I needed to consider a lot more carefully the crop mix and rotations. I now grow oats, triticale, combi crop (barley & peas mix), oilseed rape & red clover and use 3 to 5 year grass leas in the rotations. There is so much to learn in using rotations effectively and I am always looking to improve my cultivation methods.

Did you find it easy at the start to get information on organic cropping and husbandry systems?

I read as much as I could but to be honest when I started farming organically the amount of info available to Irish organic farmers was small and how I really learned was by doing it. Thankfully much has changed since and there has been significant advisory support from Teagasc (the state advisory service), Open days supported by both Teagasc and the two Irish organic certification bodies and NOTS (National Organic Training Skillsnet). Also with more farmers going organic, farmers sharing info among themselves has been of great benefit.

In your first years farming organically did you operate a closed system or did you bring in amendments or farm yard manure from outside?

Yes I did, I imported FYM on an annual basis as I felt I needed to build up soil fertility and I continue to import FYM as I believe the soil needs it. When you say a closed farm system, I find it hard to see how it can be done without effecting output but I'm open to reconsidering my views

Guest Speaker, Benno Otter, Head Gardener at Dornach demonstrating compost making to some participants at the Spring Conference in Ballybay, Co. Monaghan

on this after attending the BDAAI soils course. Also, I have not been entirely happy with the Morgan's soil test that is the standard soil test used here in Ireland. I now know that it only measures the soluble nutrient levels in the soil: it doesn't indicate how active the soil biology is and how effective the biology is, or is not, at making nutrients available to the plant. The Albrecht soil tests that I recently did were a revelation: all or almost all the questions I had in my mind about my soils and what was right and wrong with them were answered after doing those tests. The samples were expensive as there was no lab in Ireland to do them but in truth, getting them done was well worth the money. This has given me serious food for thought and I'm looking at my soils now in different way. Also, I have to say, I have been very surprised at the knowledge about soils a number of the biodynamic guys have. I could see that when I did the soils course and it's been great to exchange ideas and learn from each other.

So you found the soils course beneficial?

Very much so – it was hard to believe that so much could be covered in four sessions.

Some years back I did a short course with Laverstoke Park on soil biology and that piqued my interest in what was going on under the ground. But, the truth is that before the BDAAI soils course there was nothing available in Ireland that I knew of anyway, that could expand on the subject in a way that would be helpful to organic farmers or I suppose any famers for that matter. On the course, it was great to have a discussion among the attendees after each presentation. The fact that there was a mix of biodynamic farmers/gardeners, organic and conventional farmers made the discussions very lively and engaging. You know it was great to see, hear and feel that all of us, irrespective of our farming/gardening methods have a strong attachment to the land and want to do the best for our farms and gardens. And, I have to say, that the biological farming approach which was outlined on the course made sense to me and it certainly helped in appreciating what the biodynamic approach was about. I was very interested in the discussion about the need to give more thought to the use of the preparations in Ireland and whether the usage of the preparations needs to be modified to be more in tune with our cooler, damper climate.

Tell me more about your view of biodynamics

Well, to be honest, there were four sessions on the course: the first three dealt with soil biology and chemistry and the last was on biodynamics. I would not have been able to make head nor tail of the biodynamics approach without the biology and chemistry sessions first. I still find it hard to grasp and it's hard to believe how the preparations work.

I have to say that it was very important to me to see that there was science behind it. In certain circles science is a bad word, but it's how science is used that matters. I have to admit though that the quantum physics principles that were touched on when introducing biodynamics went over my head. I think they went over everybody's head including the presenter's! But to be fair – the whole point of referring to quantum physics was to make very clear that science is only beginning to catch up with biodynamics.

I like the idea, I have to say, of the farm, as an entity that includes the farmer, as being an individuality: Now that I am aware of it I pay more attention to this idea on my own farm.

Without yet knowing too much about biodynamics there is a great sensibility about using your instinct and intuition to focus your intention.

That sounds good!

Yea, it does, doesn't it!

So you are going to go ahead with putting out the biodynamic preparations on your farm this year?

Yea, the Biodynamic Association asked me would I be interested in using the preparations as a trial and I'm willing to go along with it. The association will supply the preparations, stirring machine and sprayer to spray two rounds each of the humus and silica sprays on about 4ha of grassland and 4ha of tillage. I'm interested to see how it's done and I'm busy at the minute sorting out my rainwater collection system.

BDAAI Chairman, Mattheus Wagter (in blue jacket) and friends

Are you happy about doing it?
Do you mean was there a bit of coercion? Of course there was! But I'm well happy to try it – I'd be a fool not to. I'll put it in a nutshell for you: the impression I get from the biodynamic guys is that it is possible to have a closed farm system using biodynamic methods. Now, in fairness, it was made clear on the soils course that starting off with balanced soils, or if they are not balanced, to add suitable amendments over 3 to 5 years to bring the soils into balance, makes it easier for the preparations to work and that using the preparations properly over time can lead to a closed farm system. The idea that a farm can be completely self-contained or very close to it has a great appeal to me for obvious reasons. Up to now I did not believe it to be possible and in fact would have said so to new guys starting to farm organically. I'll put it plain and simple: I would be happy to be wrong on this one!

You have referred to the 'biodynamic guys' a number of times. Are you a member of the BDAAI?
As of a couple of days ago I am!

So you're now one of those biodynamic guys as well?
Ha, you have me there!

Trevor, thanks for the quick chat and best of luck with the trials.
Yea, thank you Kevin and I will let you know how I'm getting on.

Kevin Dudley also had a chat with Alfie and Devon Beattie:

Brothers Alfie and Devon Beattie farm 80ha in Clonmoyle, Rathangan, Co. Kildare.

56ha is in continuous winter wheat and 40ha is in grassland, carrying 100 dairy cows and 30 followers. The grassland stocking rate is 3.25L.U./Ha

Hi guys, you both mention that you have felt for some time that there was something not quite right with your soils. Can you explain what you mean?

Alfie: well, to be honest with you, up to six months ago we were farming away in a typical conventional manner: doing what we were told, putting out lots of chemical fertiliser and sprays, but both of us have been unhappy with the results, especially on the tillage ground: yields have been very unpredictable and we know that it is not all down to the weather. Like Trevor's story, we felt that the Morgan's soil tests were not giving us a true picture of what was going on in our soils. For instance we had always been told that potassium got 'tied up' in our soils and that we should apply a 'little and often' approach.

We recently adopted that approach and we found that it worked, but we were still none the wiser as to what was going on in our soils.

Basically all I can see with conventional agriculture is that you are going to have to get bigger and bigger, work harder and harder for less and less – it's a rat race to the bottom.

Devon: Until we did the Albrecht soil tests – when we first got the results neither of us could even read them, but by the end of the soils course we both were delighted that for the first time in our farming careers we had an understanding of what our soils were about. I have never looked at our soils the same way since.

Alfie: Me neither! Our soils were not locking up potassium. It was the fact that 90% of the soil exchange capacity was loaded with calcium which meant that there was no room on the clay/humus colloids to hold the optimum level of potassium and what we had been putting out was being washed away! That was one of a load of things we learned. Hard and expensive lessons.

Has the soils course and the follow up discussions changed your view as to the way your farming?

Alfie: absolutely!! Well, we attended the course because we wanted to learn. To be honest before the course started I thought that biodynamics was all airy fairy and mumbo jumbo.

I think you did too Devon?

Devon: Yea, I did! I looked it up on the internet and read some stuff about cow horns and moon influences and I thought oh oh, I'm not sure about this.

Alfie: But after the first three sessions I had my eyes opened about biological farming and I was amazed to realise how much chemical nitrogen suppresses soil biological activity.

Devon: But the preparations, the cosmic influences and all the hard to understand stuff about biodynamics initially went over my head: it was all above my paygrade!

Alfie: I'll be straight with you: if the first of the four sessions of the course was on biodynamics I would not have returned for anymore. The biodynamics only made some sense to me after the biological farming approach was explained. What made me think differently or think at all about biodynamics was when the refractometer tests were done on the conventional and biodynamic fruit and vegetables.

Can you explain?

Alfie: Yea, in the third session a refractometer was used to show the nutrient density of the sap from different fruits and veg, both conventional and biodynamic. It was quite clear that the biodynamic produce had a much higher reading than the conventional.

That got me thinking: before that I thought an apple was an apple, a cabbage a cabbage, but now I understand what nutrient dense food means. You end up questioning everything about producing food.

Devon: the thing is that it keeps going round in your head, I mean I have been questioning everything we are doing in conventional tillage since we got the Albrecht tests and did the soils course. It makes you realise that there has to be a better way. In fact there is a better way, which is biological farming.

Where do you think biodynamic farming might fit in?

Devon: Look, I'll be straight with you, I don't know yet. What I have learned is that it is not a million miles away from biological farming. If we could start by balancing our soils, the biological activity will improve. The impression I get is that the biodynamic preparations seem to be used to improve how the biology works and to connect all the parts together, if you know what I mean. At this stage I can't explain it better than that but I might have a better idea in the future.

Can you elaborate?

Devon: Well, we are going to do the preparation trials using two rounds of the soil and atmosphere sprays on some of the tillage and grassland. Also, I understand that the BDAAI will be organising occasional workshops on various aspects of crop and animal management. That would be a big help in understanding more, I'm sure.

Alfie: Yea, it will be interesting to actually put out the preparations and see if there is any response.

Do you think you will get a positive response?

Alfie: I'd like to think so. I don't know, but I'd imagine it would be likely that there would be a better response on the grassland than the tillage. To be honest, I think it's like anything else in life: just getting on with it and doing it is the best way to learn. We are under no illusions about whether it will work or not. From talking to the biodynamic guys a conventional farm, using a lot of chemical fertilisers and fungicides as we are is not likely to respond to the preparations as well as an organic farm. Either way, we're going to try it and we will keep an open mind about it.

Devon: I agree, and it's not as if we are on our own with this: The help will be there from the biodynamic association, yourself included!

Great! It seems that you are both up for it!

Devon: Of course we are! What have we got to lose? As Alfie said, let's just put the preparations out and see what happens. I mean in such a short time both our views have changed big time in relation to how we are farming and how we should be farming. I'm not suggesting, that at the drop of a hat we are going to turn around and start farming biodynamically tomorrow, but we are going to work towards improving our soil biology and you never know, one step follows another.

Are you now members of the biodynamic association?

Devon: Yes we are.

Well then fellow members, many thanks for the chat!

Alfie: Thanks Kevin, and safe journey home.

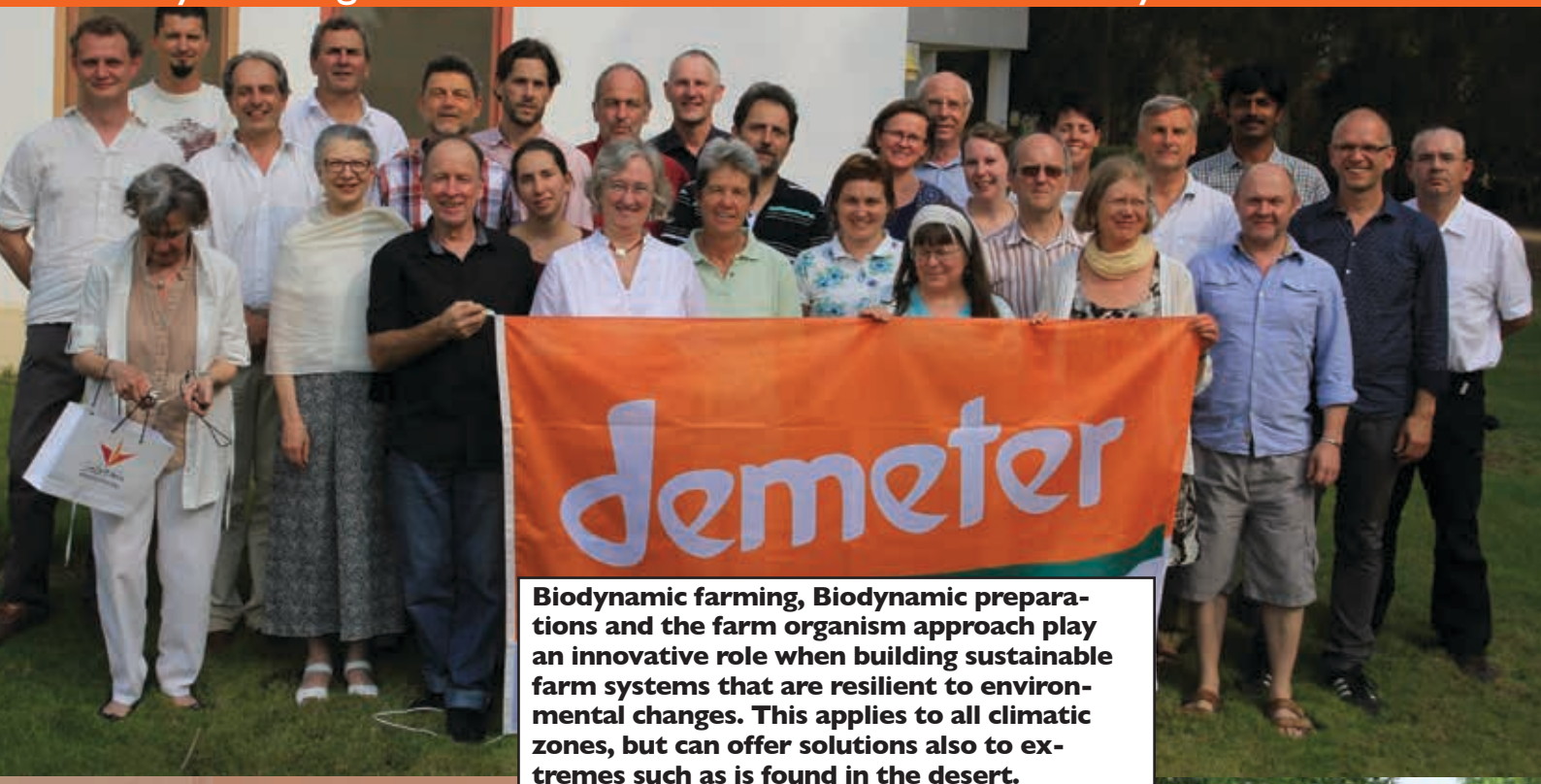
Footnote: *The BDAAI would like to thank the BDAA for the encouragement and support that has been offered to it in recent times. It has been very reassuring to know help and advice is a phone call or an email away. It is with gratitude that the BDAAI acknowledges its appreciation.*

Spraying 500 Irish style!

Trevor and Jane Harris and Family

Demeter International - Greening the Desert

Biodynamic Agriculture flourishes at the Sekem Community North of Cairo



Biodynamic farming, Biodynamic preparations and the farm organism approach play an innovative role when building sustainable farm systems that are resilient to environmental changes. This applies to all climatic zones, but can offer solutions also to extremes such as is found in the desert.

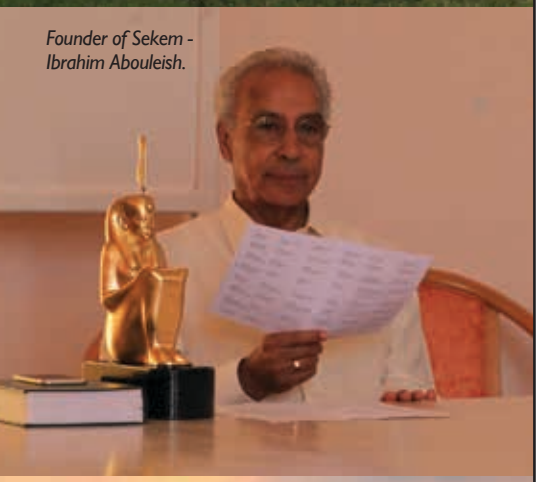
When delegates to the Members' Assembly of Demeter International met in Egypt from 6th to 11th June, there was intense discussion on how to best implement the Biodynamic approach with its understanding of the importance of animals. Animals contribute enormously to the soul life of the farm organism and their husbandry requires respect also for their innate behavioural needs. This, together with the Biodynamic preparation work, must be anchored in the Demeter Standards but over and above that must be able to develop freely.

Twenty seven delegates from 20 countries visited agricultural enterprises in the desert and on the black soil of the Nile Delta, saw examples of further processing these Biodynamic raw materials and viewed examples of animal husbandry adapted to the harsh desert environment. In workshops and the plenum sessions, the conference worked on possibilities to intensify this work in many corners of the globe and what consequences that would have for Demeter inspection and certification. Keynote addresses on the reconciliation of Islamic and Western world views provided links between the world of ideas and the practical world, further underpinning the workshops and debate.

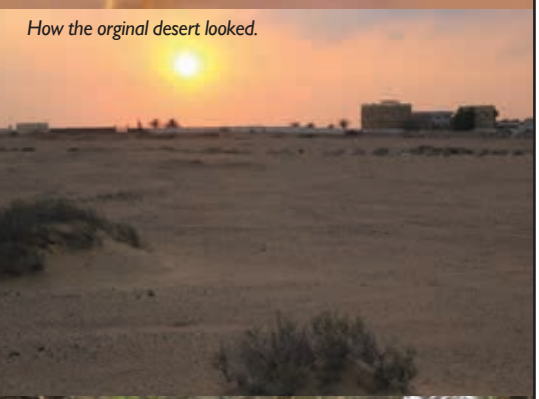
Demeter International, now in its 19th year, meets annually in June for the harmonising of Biodynamic activity world-wide. This year the meeting was held at the Sekem community (www.sekem.com), North of Cairo, hosted by the Egyptian Biodynamic Association. In addition to work on development of Biodynamics, the Board of Demeter International was elected for the next three year period and standards amendments ratified.

Demeter International looks optimistically to the future with increasing areas being farmed Biodynamically. Presently 158,300 hectares are Demeter certified in 50 countries. The positive consequences for the earth, for global climate and for the nutrition of mankind are significant and offer encouraging perspectives.

(Press Release from Demeter International)

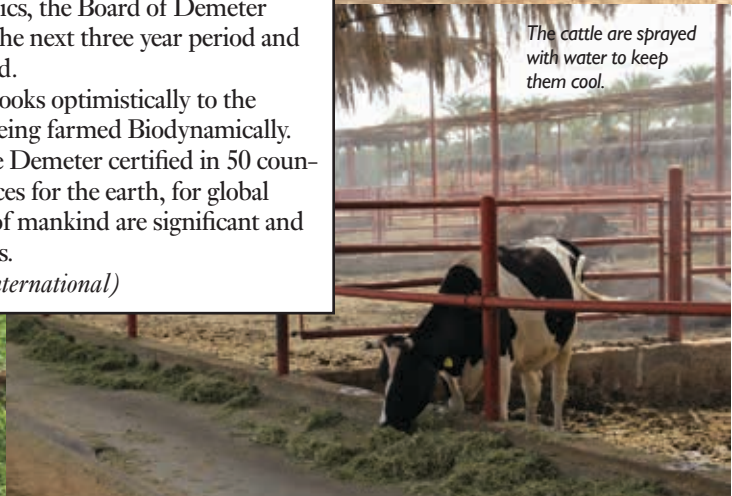


Founder of Sekem - Ibrahim Abouleish.



How the orginal desert looked.

Growing herbs under the palm trees.



The cattle are sprayed with water to keep them cool.

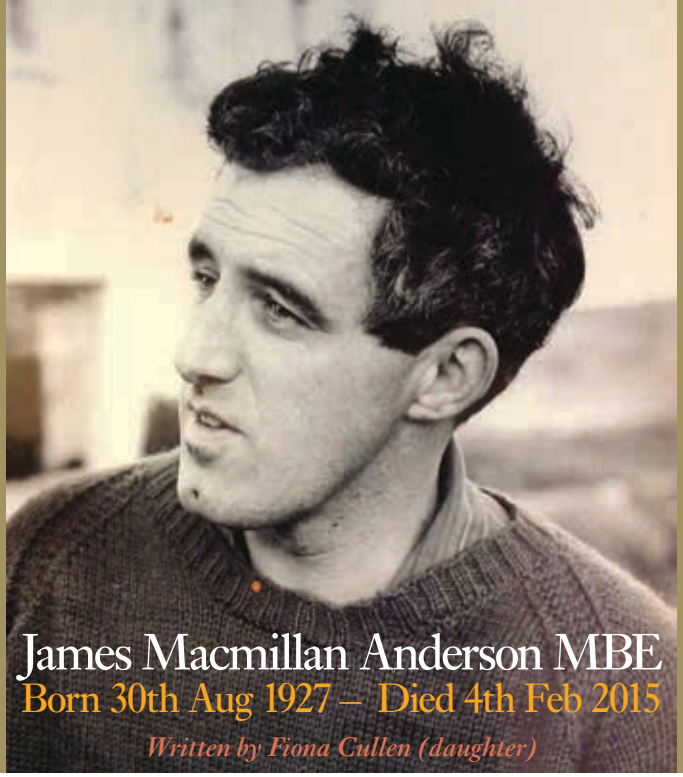
All photos © Richard Swann

Bedouin shepherd seeing to sheep in Sekem.

Morning Circle in Sekem.

Cultivating basil in Sekem.

Bagging herbs for essential oil production.



James Macmillan Anderson MBE

Born 30th Aug 1927 – Died 4th Feb 2015

Written by Fiona Cullen (daughter)

Jimmy Anderson MBE has died aged 87. Jimmy was one of the key people instrumental in establishing biodynamic farming in the UK as a recognized part of the organic movement in the 1980's through his work with UKROF developing standards and inspection procedures. In 1999 Jimmy was awarded an MBE in the Queen's Birthday honours for 30 years of service dedicated to Organic Agriculture. In 2009 Jimmy received a lifetime achievement award from the Biodynamic Agriculture Association.

Jimmy, the son of a GP, grew up in Elie in Fife where as a boy he enjoyed working on neighboring Broom Farm. He attended Edinburgh Academy, which was followed by 3 years of National Service in the Royal Navy where he was stationed in the Western Pacific on a minesweeper squadron. On his return he attended Edinburgh University where he commenced studying medicine. During this time, he met and fell in love with Pauline (nee Barrington) who wanted to marry a farmer. Jimmy switched his studies to agriculture, to which he felt he was much more suited. He and Pauline married in 1952.

It is difficult talking about Jimmy's life and achievements without including Pauline. Jimmy and Pauline were real soul mates in the true sense of the word. It is hard to talk about the contribution of one without the other. They were a strong and enduring couple and they worked well together in everything they did, complementing, sharing and supporting each other throughout their marriage.

They began farming and raising a family in Perthshire in the mid 50's. They began farming on Woodburn farm near Crieff in partnership, with Jimmy's old school friend Ian Stewart. During this time Jimmy also worked as a fieldsman for crop chemical firm SAI. They then managed to buy Outfield, a small conventional upland farm at the foot of the Sidlaw Hills between Perth and Dundee, which they farmed for 8 years. They developed a strong interest in folk music and the folk revival. Jimmy started to compare in the local folk clubs in Perth and Dundee, hosting a wide variety of guest singers at the farm including Ewan McColl, Peggy Seeger, Martin Carthy, Dave Swarbrick and the Waterson's among others. They also started to host folk week-ends on the farm and singers and musicians came from far and wide.

They became interested in whole foods and began to question the use of chemicals on the land. So began their search for more holistic and sustainable farming methods. This combined with a search for a better way to feed and educate their children. Their search led them to the purchase of a very run down 'Vale Farm', in the village of Halstock, Dorset. Here they started to farm using organic principles for the first time while also carrying out extensive work on the house and initiating the excavation of a substantial Roman Villa' which was carried out by Dorchester Museum. They also became very involved and active in the English folk song and dance scene in the area.

They then heard about Emerson College in Forest Row, Sussex in 1967, and went to meet its principle, Francis Edmunds. This formed part of their ongoing search for an education system that they felt was right for their 5 children. They decided that they had to learn more about Steiner's ideas and enrolled in the Foundation year and Agriculture course, respectively, at Emerson. They also sent their children to the nearby Michael Hall Steiner School. Following this they bought Busses Farm on the outskirts of East Grinstead. It was encountering the work of Rudolph Steiner which gave them the principles that would guide the rest of their lives.

The word organic is now very much an accepted part of our language, but in the late 60's when they started Busses Farm using bio-dynamic methods, they were well ahead of the times. Although bio-dynamics was beginning to become more established on the continent, in the late 60's there were only 5 bio-dynamic farms in the UK. Jimmy and Pauline, not only planted seeds in the soil but sowed the seeds of, what were for the time, very innovative ideas involving a holistic approach to farming, and the principle of the farm as an organism. They began offering placements for students training in agriculture at Emerson College. Many of the people who passed through the farm went on to start their own initiatives in other countries all over the world.

Busses Farm was driven by very strong ideals. Jimmy and Pauline started 'The Seasons' Organic, whole-food and craft shop in Forest Row, Sussex, with friend and fellow

BDA Council 1987
Back (left to right): Julian Pyzer, Bernard Jarman, Michael Schmundt, Michael Newton, Joachim Grundmann, Tony Matthews, Anthony Kaye
Front: Jimmy Anderson, Katherine Castellitz, Pauline Anderson, Mary Anne Parsons, Pat Thompson, Olga Holbeck

farmer's wife, Diana Phillips. The Seasons provided an outlet for the cereals, vegetables and milk products produced at Busses Farm and the other bio-dynamic farms in the area. It was very well supported by the Forest Row community, and is still in existence today, albeit in a new and larger location in the village.

They also opened a small whole-food organic café called 'Seasons Kitchen' in Forest Row with, one of the original Busses farm students Lucy Murton, who managed the day to day running of the cafe. The cafe ran very successfully for two years providing an outlet for much of the Busses farm Bio-dynamic vegetable, dairy and home baked produce, as well as a much needed meeting place for the local community. It was an early attempt to foster a stronger channel of communication and co-operation between producer and consumer.

Busses Farm was an amazing and inspirational place for many of the young people who passed through it, unfortunately it was plagued by being financially under resourced and eventually had to be sold much to Pauline and Jimmy's sadness.

Following the sale of Busses Farm, Jimmy and Pauline decided to move back to Scotland. They started a small Bio-Dynamic garden in Pencaitland supplying vegetables for the Church of Scotland's Netherbow Restaurant in Edinburgh. They then became involved in an initiative to set up the Helios Fountain Project in the Grassmarket in Edinburgh. This was envisioned as a small study/cultural centre combined with an anthroposophical books, crafts and cafe complex. Jimmy and Pauline agreed to run the largely biodynamic wholefood café at the back of the premises, for two years. Helios Fountain café was idealistically run and also well received and frequented. After 2 years of building up the business they recognised that it was time for them to move on to new things. Helios Fountain continues to run today in the same location, as a book and craft shop.

Deep gratitude was expressed by many people who new Jimmy and Pauline during this time for their valuable contribution to the Edinburgh Anthroposophical society and the tremendous creativity, hard work and commitment.

Jimmy then began one year Social Development training at the Centre for Social Development at Plaw Hatch near Forest Row, while Pauline undertook training in both Art Therapy and Rhythmical Massage.

They then moved back to Edinburgh in the late 80's. Jimmy took on the role of Demeter Inspector, managing the UK Demeter certification scheme for biodynamic farming.

At the time of starting this work he was the only inspector in the UK, a role which he continued for eighteen years. Jimmy also set up a Farm Consultancy Initiative which he named 'Farm Future'. This was an advisory and certification consultancy offering advice to farmers and gardeners who wished to switch from conventional to biodynamic and organic methods of farming and gardening.

Jimmy's described his Demeter Inspector's role as "someone who could talk from experience of the land and point out and guide the farmer towards the right way of doing things". Jimmy was very straight-forward in expressing his belief that the biodynamic approach was totally sensible, realistic and a practical form of agriculture. Jimmy started 'Farm Future' an advisory service for farmers wishing to convert to more sustainable farming methods.

Following retirement, and anxious to re-connect to the land, Jimmy and Pauline moved to Netherfield Farm near Beeswing in Dumfries shire in 1998 which they transformed into a special place offering therapeutic B&B, offering rest, care and rejuvenation with home grown biodynamic food. This project encapsulated what they had been striving for – a mixture of production, therapy, including nutrition and accommodation: "the farm as a social and healing organism". Netherfield Guest House was a very special place for those who stayed there.

In 1999 Jimmy was awarded an MBE in the Queen's Birthday honours for his 30 years of dedicated Service to Organic Agriculture. Jimmy always felt that his receipt of his MBE was a discrete official vote of confidence for bio-dynamic work in the UK.

Sadly Pauline died in 2007. Jimmy is survived by his 4 daughters Fiona, Shuna, Kirsty and Corran, his son Fergus, and by his 6 grandchildren.

RESTAURANT REVIEW
AMICO BIO
Green Thinking – Better Living

Barbican , 44 Cloth Fair,
London EC1A 7JQ
Tel: 0207 6007778
www.amicobio.co.uk
Jessica Standing

'We cook with whatever we receive from our family Biodynamic Farm in Italy so our dishes are always interesting, seasonal, fresh and full of Italian passion'

I had headed to London chiefly to lend a hand on the fantastic AG Brockman's biodynamic market stall in Brick Lane E1 who were there as a "one off" as part of a Neff ovens promotional event. As I have well known passion for quality biodynamic vegetables and the aforementioned oven brand it seemed like the day could not get any better.

It did – as I also had a 5.30pm reservation at the Barbican branch of Amico Bio which purports to be "London's original vegetarian-organic-Italian restaurant" but is actually mostly and excitingly for me – biodynamic.

I had visited their Oxford Street branch about 2 years previously; a spontaneous dinner after a BDA Trustee meeting at Rudolf Steiner House. This initial foray was inspired by a dear friend who had given me an Amico Bio paper placemat some time before, which had stuff about Rudolf Steiner and biodynamics written upon it! I was so impressed I just had to go and find out more.

I had chosen an early dinner time this visit to ensure plenty of time to catch the tube back to Paddington but also in the hope of being able to have a quick chat with the man behind the Amico – Bio concept and execution – Chef Pasquale Amico.

Seated in a comfortable corner, I ordered Lime and Mint Breeze cocktail whilst I perused the menu and admired the simple, rustic and charming décor including photos of family and produce on the walls.

The menu - including Stuzzichini (something to share), Antipasti (starters), Piatto Unico (a plate for one comprising lots of different things), pasta, ristotti & Zuppe options and Mains ran to 2 sides of A4 sheet. A good sign in my book as a small menu means the dishes contained therein will be fresh!

It was a tough choice – there was much I was tempted with like the Antipasto misto – potato croquette, pasta cake, rice croquette, panzerotti, salad and scarola conciata £9.50 or the cabbage and spelt fritters, Tuscan bean puree and pumpkin salad £7.50, wholemeal risotto of the day £9.50, and a whole host of delicious sounding Secondi. (Although the menu changes daily you can get a flavour of what might be on offer by visiting their website at www.amicobio.co.uk/Food-Menu)

I decided to go ultra-simple and chose the Olive miste to start. As someone with a passion for good food I have learnt that if a restaurant cares about their olives they tend to care about everything else too – a little like the saying " take care of the little things".

A delightful little plate was put before me by the charming and efficient waitress containing a mixture of giant black olives, green olives and pale yellow beans. First surprise was that the black olives were hot with a nicely fiery kick of chilli (when I enquired about this I was told that warming them enhances the flavour). The green ones were juicy as a plum, soft and subtle and the beans sitting in a little pool of olive oil were the perfect foil with their almost hazelnut like creaminess.

For Mains I plumped for the Cuppolo di Verdure Fritte – or Tempura of seasonal vegetables served with a sweet and sour sauce (£11) and again I could have easily chosen all of the main courses they sounded so yummy. When it arrived it was like art on a plate – a riot of the lightest crispiest battered vegetables spilling out of a brown paper cone almost like a horn of plenty. I detected squash, carrot, radicchio and peppers. The sweet and sour sauce was unguent and delicious.

The head chef, Pasqule kindly left his kitchen to chat to me about his ethos and vision for his food.

It was becoming a vegetarian himself and a pursuit for a healthier lifestyle that inspired the Amico Bio brand along with his passion for seasonal fresh produce. Having a family biodynamic farm in Capua, Italy is definitely a bonus and Pasquale was adamant about cooking beautiful food with what came from the farm itself – we cook with what we receive he told me repeatedly - resulting in truly seasonal food that truly honours the produce itself. Being a biodynamic/organic restaurant is no mean feat – being one which is also uber seasonal, vegetarian and vegan is downright medal worthy.

If you are in London then I thoroughly recommend a visit to either branch and enjoy a bit of biodynamics in the City!

I have to end this review with a rave about AG Brockmans (the UK's oldest BD Farm, set up in 1953!) and their amazing range of Demeter produce. As well as the much needed staples such as carrots, potatoes and the such like they also offer an incredible range of salad and wild foraged items - all of which glowed with health and vitality and a real testament to biodynamics.

They are now attending 12 farmers markets in London, offer a box scheme and online ordering – see **http://agbrockman.co.uk** for full details and to sign up for their newsletter.

FERN VERROW: A Year of Recipes from a Farm and its Kitchen

by Jane Scotter and Harry Astley

Photographs by Tessa Traeger
Published by Quadrille. £25
Available from the BDA
Reviewed by Allan Jenkins

So, finally Fern Verrow. The book of the food of the farm: the thoughtful thoughts and philosophy of Jane Scotter and Harry Astley of the 16-acre smallholding of that name in the shadow of the Black Mountains in Herefordshire. I have followed Jane for more than 20 years, from the cheese counter at Neal's Yard Dairy in London, where I found her a little fierce, to the land she now farms with Harry between Hereford and Hay-on-Wye. I have bought her food when she sold only salad bags in Covent Garden, through to Borough Market and now further east to Bermondsey Spa where at the right time of the year (and with Jane and Harry there is almost always a right time) their stall will be ablaze with colourful fruits and flowers, emerald leaves, amethyst and amber roots. My devotion to them, their food and their farm is a purely selfish act: Jane and Harry are simply the best growers I know, the standard by which all others are judged including the crops I grow myself. That I have an allotment in London, grown (a little more loosely) on biodynamic principals is largely due to Jane. I would still have done it but it would be harder, less rewarding without her as advisor and inspiration. She showed me how to stir at dawn after a late London night with Islay whisky. She is my unstinting source of practical wisdom and hazel bean poles, and now with this beautiful book, she and Harry will inspire many others, too. This is a soulful, mindful read packed with exquisite pictures and recipes.

The year is divided into four (of course): earth (winter), water (spring), air (summer) and fire (autumn).A diary of the seasons and elements is punctuated with meditative text – both are gifted writers – recipes and pictures from revered food photographer Tessa Traeger. Christmas makes a special appearance, as does Three Kings Day. There are

short essays, for instance, on foraging, edible flowers, and an elegant introduction to herbs and teas. There is also a page of suggestions for spring garden sandwiches that lives in my imagination still. Biodynamics is addressed simply and practically through, say, poetic pieces on stirring and living water, horn manure and silica preparations, also working with the moon.

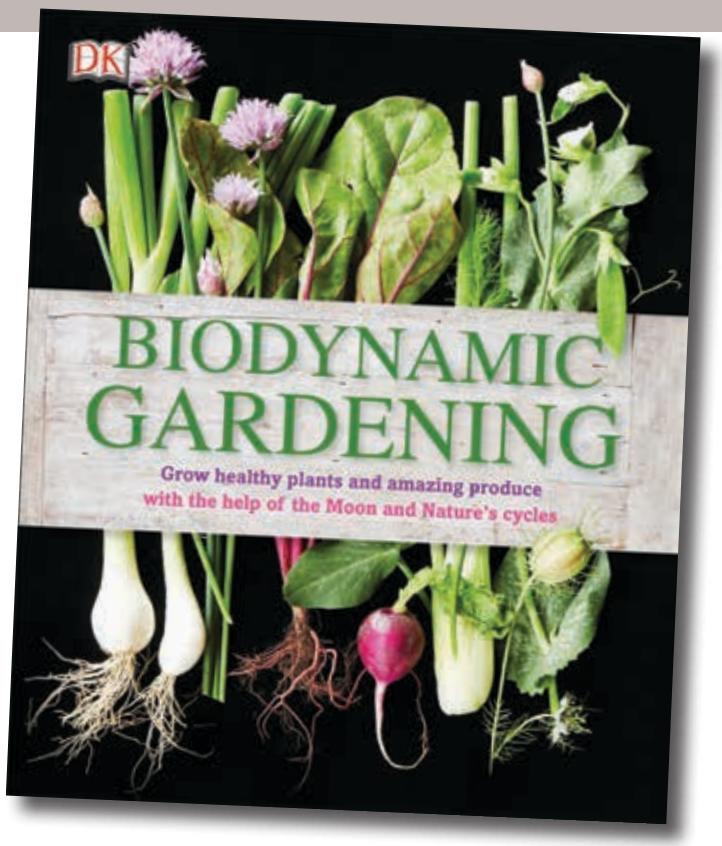
The majority of the book though is taken with recipes and here Traeger's strengths are on show, the food styling and photography captures the essence of their simplicity, letting inherent flavours shine. Desserts are particularly strong, perhaps captured best with a sensual summer fruit trifle, held in the photograph by Jane's capable hands; there is a luscious jocasta ripple ice-cream, a rose angel cake with crystallised petals. There are fruit jellies and jams and a failsafe Seville orange marmalade. The strength of autumn, perhaps my favourite season, though is in the savoury dishes. I have eaten the onion tart in the fairyland garden at Fern Verrow on my first visit to this magical space, as perfect a plot of land as any in England. Everywhere there is testament to the care, the concern for nature, the seasons, the soil, that saturates this book. I have walked the farm's perimeter, marvelled at its energy, ground silica for 501, unearthed buried horns, searched for last year's compost preparations. Fern Verrow is a special spot, the people who farm it are special too.

There is a scene in a jazz movie, Round Midnight, where an aspiring French saxophonist sees Dexter Gordon play, watches a master at work, and feels compelled to throw away his instrument. I have sometimes felt like that with Jane and Harry. Whenever I grow something exceptional I cannot help but compare it to the steady stream of extraordinary crops they conjure from their soil but then I remember the most important lesson they have taught me: about intent, and I am grateful to be growing and to be a part of the process. This book, like its authors, has heart and soul and wisdom. It will inspire its readers to cook, to be aware, to perhaps be more biodynamic. I commend it. In a quiet modest way it is an important part of the canon of Rudolf Steiner-inspired thinking, but it is also always a delicious treat that will encourage you to grow if you can and put good food on your table.

Allan Jenkins is editor of Observer Food Monthly.

BIODYNAMIC GARDENING

By Monty Waldin
Published Dorling Kinderlsey
256 pages, hardback
£16.99
Available from the BDA
Reviewed by Rachael O'Kelly



Accepting that no book is ever a replacement for rhythmic, practical experience and regular inner work on the subject of biodynamics, whilst simultaneously acknowledging that our world sits in a time where the biodynamic preparations and sustainable practises not only need to be recognised but also adopted extensively, this book provides a worthy companion with which to start a journey and be inspired.

Seduced by the slick black cover with glossy images of vegetables (sporting roots I'm happy to say) I immediately want to look inside. The pages of the book do not disappoint, filled with detailed, visually stunning, exquisitely staged photographs and clearly defined chapters, you are invited into the world of cow horns and moon rhythms. Written by Monty Waldin, the celebrity face of biodynamic wine growing, passionate about getting biodynamics into the world with Bryony Young as biodynamic shoot consultant, their extensive experience shines through. The book takes you first through the concepts of organic gardening techniques and then leads into the specifics of biodynamics. In contrast to many other books on biodynamics, this is both a 'how to' gardening book and an explanation of the theory behind the practise. Designed to be picked up regularly and accompany you through the growing season, this really is a most comprehensive, practical book.

Complete newcomers might find it slightly overwhelming, you cannot just jump in and 'know' how to garden biodynamically. As you might expect, the book demands that you engage with biodynamics and taking time to think into it. The subject matter is not simple, not straight forward and not easy but if you are willing to make that commitment then a world opens up to you. Monty Waldin frequently summarises complex concepts in an easy to understand, light way "...but in the 1920s... Cow intestines were often used to make pork sausages for the table. What Steiner was suggesting was to make sausages from chamomile flowers and feed them to the garden via the compost pile instead"

Once you have embarked on your background reading you are rewarded by being able to dip into the plant finder sections on root/fruit/leaf and flower days, peruse the advice on compost teas and experiment with the step by step instructions on making the preparations. Use this as a resource manual and it feels very rich, informative and interesting. But be prepared, you will need to accompany this guide with a planting calendar. It really is incredibly extensive, giving alternative techniques for making the preparations depending on the size of your garden or the equipment you have available, suggesting possible rotations and highlighting herbal remedies specific to individual plants.

Techniques and methods are specific to Monty Waldin's practice - many would insist that Preparation 505 must be made in very slow running water, not a barrel made to mimic bog-like conditions, but all techniques are presented for the home gardener and as such are made wonderfully accessible. The more 'gritty' aspects of biodynamics are not washed over or hidden from, rather you meet all the techniques head on including the 'warts and all' double page spread of pig's heads being stuffed with oak bark. Monty Waldin's text clearly and concisely explains the reasons behind the sheaths, grounding it firmly in the physical, mineral kingdom but leaving room for a whisper of the super-sensible.

Aspects such as the farm organism are touched upon but in a very limited way - the reality of reducing inputs and maximising a self-sustaining ecosystem is possibly the hardest subject when working on a 'back garden' scale. As for elemental and formative forces, the more spiritual side of biodynamics is unsurprisingly absent but somehow, when you open the pages on 'tuning into nature' or the 'biodynamic preparations' there is an air of something not quite tangible woven between the text and the images, breathing into the spaces. Aspects such as making peppers are explained very simply and not elaborated upon but perhaps this is best. Biodynamics is, after all an exploration, the developing of a relationship with your own garden and the forces at work in it. If this book leaves aspects open to question and research then I see that as no bad thing.

Once people have opened their minds and eyes to the potential of this subject there is a strong enough movement around biodynamics to 'hold', accompany and grow with them. Any guidebook that calls for people to become more sensitive to their surroundings, recognise plants, insects, animals, environment and cosmos as living, interconnected entities needs to be celebrated.

Become a member in July, August and September and you can buy this book at a very special price of £12 (Incl P&P). Purchase in our webshop or call the BDA Office.

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