

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 ‘chriann 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



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.

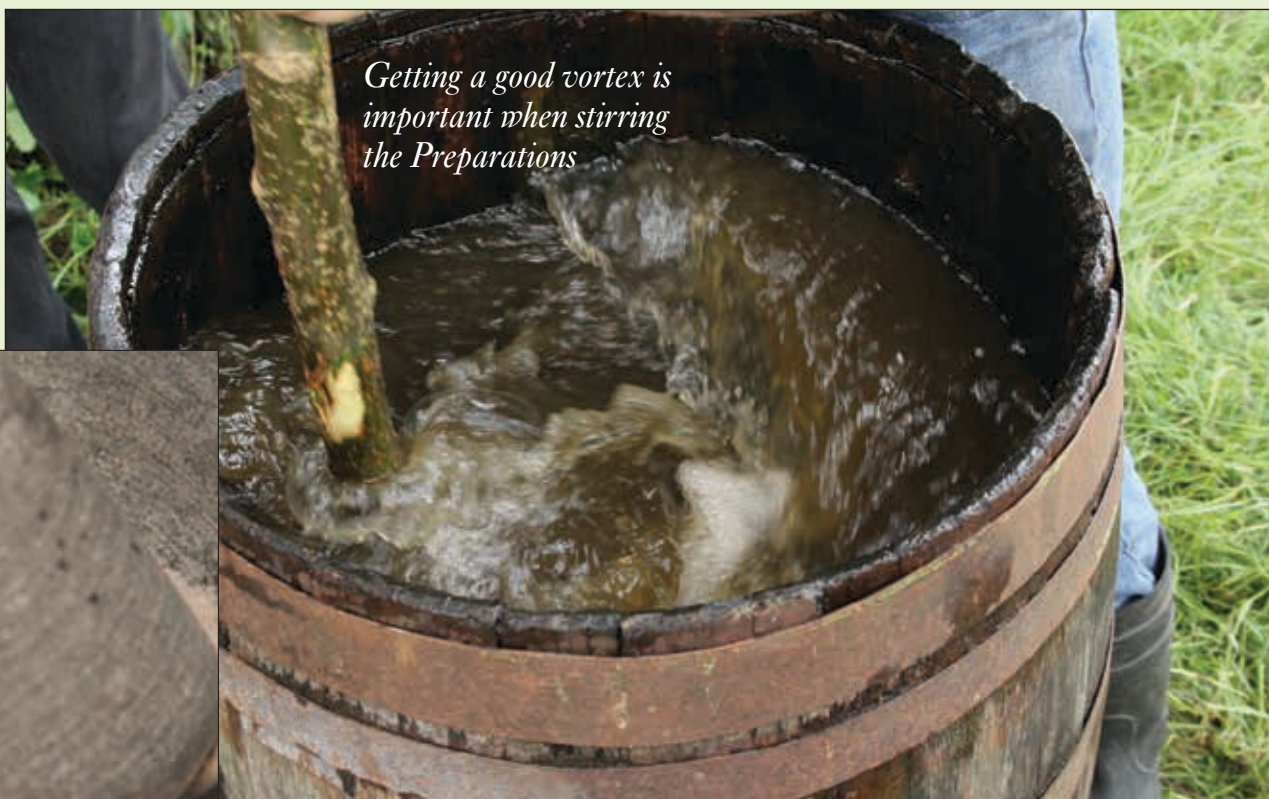
Steiner spoke about clay being connected to a 'cosmic upward stream' from soil to plant. From this we presume that clay plays a key role in the retention and transfer of these energies. He also spoke with amazing perception about the activities of earth elementals, as has Susan Raven, while in a remarkable 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.





Horn Manure Preparation (500) being buried in the autumn

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?

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