

The Spirit in Biodynamic Agriculture

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The Spirit in Biodynamics is a very rare beast. It is usually heard described as being the human in charge of the farm enterprise, the one who brings direction to the farm. We almost never hear it being a growth influencing force. We hear the Etheric and Astral mentioned in somewhat vague terms, as growth influencers, but where is the Spirit. We know RS told us everything has the four energetic activities functioning at all times, but somehow plants have lost their Spirit function. However when using the four energetic activities as the basis of BD actions, we will come to see the Spirit or Star Forces to correctly address it, is the primary 'architectural' source activity from which all other things arise. It has to be considered as the central driving impulse of plant manifestation. The Etheric and Astral are responding to the Spirits direction. The Spirit manifests in many different ways within our BD worldview.

In several ways it is unfortunate we use the term Spirit, as it has so many connotations for so many people. Many folks give it a religious reference, pertaining to a creator 'father' God, or a more generalized universal presence, or as something that manifests only as a self consciousness within humans. Dr Steiner made an attempt to clarify this self consciousness, from World Spirit by calling it the incarnated Spirit, Ego. However this too has its difficulties given the common reference of ego, to mean 'self centered', and not in a good way.

For a energetic Biodynamics, Spirit is a very real and functional terminology of one of the main levers we use to influence life processes. Most everyone will agree that Spirit is the primary creative force, however I appreciate it as a 'physical' force sourced from the very real Stars, and that the constant beam of EM force coming from any particular star, will be received by the Earth, before being reflected back into life, as the archetypal resonance, standing as the 'central organising pillar' of one particular species.

We have three different relationships to the Stars to consider. Firstly, our primary relationship with the Stars is the one we have with our Sun. The Earth exists in intimate relationship to the Sun, as a manifest compost heap within the Sun's EM onion sphere. The Sun is our parent, the 'being' from which we came, literally, and our life depends upon it. This is called the **World Spirit**. The second relationship with Spirit is beyond our Sun. The Sun is only one of billions of Stars that belong to our Galaxy, which is our ultimate localised organised 'being'. The Sun is its child. Beyond the Galaxy, there are many other galaxies, and thus many many other Stars, all beaming their individual resonance at us, constantly. All of these forces, our Galaxy and all others, are collectively called the **Cosmic Spirit**, but our Galaxy takes central emphasis for us at this level. I find it useful to remember the saying, 'there are as many stars in the sky as grains of sand in the Sahara desert', when contemplating the Cosmic Spirit, and how each star can manifest on Earth as a individual species, as suggested by Paracelsus. There are enough stars out there even for every human to have their own star.

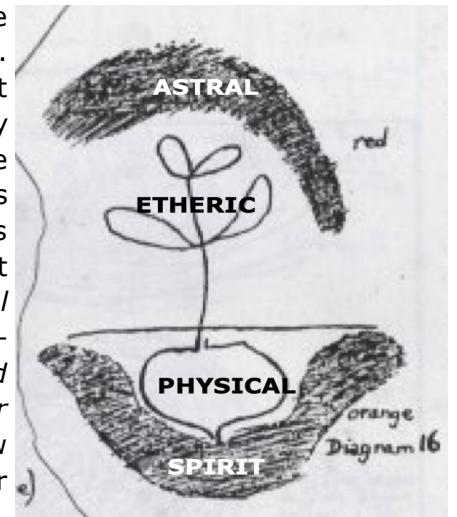
Our third relationship with the Spirit, is when the Star forces are reflected back from the Earth, and we see life processes. Here we find the internalised Spirit, holding the blueprint of a Being, and via the processes of evolutionary developments through the species of nature, the **Internalised Spirit** has come to be experienced by us, as our eternal conscious self, which stands behind our comprehension and objective rationalization of the world around us. This is purported to be a purely human experience, however once blood begins to appear in a species, we see the fingerprints of the Spirit internalising.

The rest of nature supposedly does not experience Spirit as self consciousness. For most of

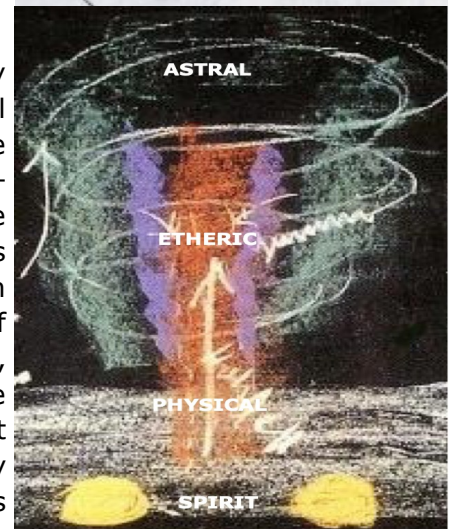
creation, the Spirit is just the 'holder of the plan', with a central organising, and directing role to play out through its more physical processes. If the Spirit 'goes on holiday', an array of illnesses arise in all kingdoms of nature. In Humans, we see such illnesses as anxiety through to cancer, diabetes and dementia. Indeed most modern illnesses are due to a poorly incarnated Spirit. In plants there will be no upright growth or seed formation.

Dr Steiner provides this overview.

"Let us draw the plant in its entirety (Diagram 16). Down here you have the root; up there the unfolding leaves and blossoms. And as above, in the leaves and blossoms, the astral element (red) is acquired from contact with the air, so the ego-potentiality (orange) develops below in the root through contact with the manure. The farm is truly an organism. The astral element is developed above, and the presence of orchard and forest assists in collecting it. If animals feed in the right way on the things that grow above the earth, then they will develop the right *internal Spirit* / ego-potentiality in the manure. If they produce, this ego-potentiality, *it will connect with the plants ego potential and Cosmic Forces, already within the Earth* (see gold balls in another RS image) and work on the plant from the root, causing it to grow upwards from the root in the right way according to the forces or gravity. It is a wonderful interplay. (31)



The plant-world develops in such a way that it represents only physical corporeality, etheric corporeality; that is, in the actual plants themselves. But when we come to the astral element of the plant-world, we must imagine this astral element of the plant-world as an astral atmosphere which encompasses the earth. The plants themselves have no astral bodies, but the earth is enveloped in an astral atmosphere, and this astrality plays an important part, for instance, in the process of the unfolding of blossom and fruit. The terrestrial plant-world as a whole, therefore, has one uniform, common astral body which nowhere interpenetrates the plant itself, except at most in a very slight degree when *pollination* begins in the blossom. Generally speaking, it floats cloud-like over the vegetation and stimulates blossom and fruit formation. (32)



The plant egos / *Spirit* dwell in the very centre of the earth, whereas the animal group souls , and *plants astrality*, circle round the earth like trade winds. All these plant egos at the centre point of the earth are mutually interpenetrating beings, for in the spiritual world a law of penetrability prevails and all beings pass through one another. We see the animal group souls moving over the earth like trade winds, and how in their wisdom they carry out what appears to be done by the animals. Studying the plant we see that its head — the root — is directed towards the center of the earth where its group ego is to be found. The earth itself is the outward expression of soul and spirit beings. From the spiritual point of view the plants seem like the nails of our fingers. The plants belong to the earth, and when we look at them singly we do not see a complete entity, for the single plant is just one among the whole number of beings constituting a group ego. In this way we can enter into what the plants themselves feel. The part of the plant that springs up out of the earth, what from within the earth strives up to the surface, is of a different nature from what is

growing under the earth. There is a difference between the cutting off of blossoms, stalk, leaves, and the tearing up of a root. The former gives the plant soul a feeling of well-being, of pleasure, just as it gives pleasure to a cow, for example, when the calf sucks milk from her udder. There is actual similarity between the milk of animals, and that part of a plant which pushes its way out of the earth. When in late summer we go through fields where corn is being cut, where the blade is passing through the corn stems, then the whole fields breathe out a feeling of bliss. It is an intensely significant moment when we not only watch the reaping with our physical eyes, but perceive the feeling of contentment sweeping over the earth as the corn falls to the ground. But when the roots of the plants are pulled up, then that is painful for the plant souls. (33)

Curiously enough, the spiritual investigator becomes aware that it is generally impossible to consider the world of plants, this wonderful covering of the earth, as something existing by itself. When confronted with the plant he feels just as he does regarding a finger, which he can consider only as belonging to a complete human organism. The plant world cannot be considered in isolation, because to the view of the spiritual investigator the plant world at once relates itself to the entire planet earth and forms a whole with the earth, just as the finger or piece of bone or the brain forms a whole with our organism. And whoever merely looks at plants by themselves, remaining with the particular, does the same as one who wishes to explain a hand or a piece of human bone by itself. The common nature of plants simply cannot be considered in any other way than as a member of our common planet earth.

An outer circumstance might already suggest to us that, just as every stone has a certain relationship to the earth, so also everything plant-like belongs to it. Just as every stone, every lifeless body, shows its relationship to the earth by being able to fall onto the earth, where it finds a resistance, so every plant shows its relationship to the earth by the direction of its stem, which is always such that it passes through the center of the earth. All stems of plants would cross at the earth's center if we extended them to that point. This means that the earth is able to draw out of its center all those *Cosmic* force radiations that allow the plants to arise.

If we now study grain-producing plants, we discover remarkable little organs present in all these plants. Small structures in the starch cells are discovered. These cells are constructed in quite a remarkable way, so that within them there is something like a loose kernel. These structures have the unique property that the cell wall remains insensitive to the kernel at only one spot. If the kernel slips to another spot, it touches the cell wall, leading the plant to return to its earlier position. Such starch cells are found in all plants whose main orientation is toward the center of the earth, so that the plant has an organ within that always makes it possible for it to direct itself in its main orientation toward the center of the earth. This discovery, made during the nineteenth century by various scientists, is certainly wonderful, and it is most remarkable if it is simply presented as it is. Natural science *also* shows us that mistletoe does not have those curious starch cells that orient the plant toward the center of the earth.

But now let us turn to something else. If the leaf of a plant is studied, it is discovered that the outer surface is actually always a composite of many small, lens-like structures, similar to the lens in our eye. These 'lenses' are arranged in such a way that the light is effective only if it falls onto the surface of the leaf from a very specific direction. If it falls from another direction, the leaf instinctively begins to turn in such a way that the light can fall into the center of the lens, because when it falls to the side it works in another way. Thus

there are organs for light on the surface of the leaves of plants. These light organs, which actually can be compared with a kind of eye, are spread out over the plants, but the plant does not see by means of them; rather the sun being looks through them to the earth being. These light organs bring it about that the leaves of the plant always have the tendency to place themselves perpendicularly to the sunlight.

In this — in the way the plant surrenders itself to the sun's activity in spring and summertime — we have the plant's second main orientation. The first orientation is that of the stem, through which the plants reveal themselves as belonging to the earth's self-consciousness; the second orientation is the one through which the plants express the earth's surrender to the activity of the sun beings. You will find little by little how the plant covering of our earth is the sense organ through which earth spirit and sun spirit behold each other. The carbohydrates can arise only if the sun spirit and the earth spirit kiss through the plant being." (30)

Spirit in the Environment

Dr Steiner has provided us with several stories of how the Spirit works within Life. The cornerstone image of his worldview, 'As Above , So Below' suggests whatever occurs on Earth is but a reflection of what is going on above.

We first meet the Spirit, in the Agriculture Course in the first lecture. However it is not very obvious. In this lecture he talks of the two basic streams of activity, the Cosmic and Earthly streams. The Cosmic stream is all that comes from above, while the Earthly stream is what comes back outwards from the Earth. He comments that the Cosmic stream starts with the Stars and it uses the outer planets, warmth and light, and silica as its physical carriers. What is not made totally clear in lecture 1 is that the Cosmic stream includes both the Star based Spirit forces, and the Planet based Astral forces. Wherever the cosmic stream goes throughout RS stories, both of these are present, however depending on the place this stream is working, one or other of these partners will dominate. From lecture 2 onwards his stories talk of Cosmic Forces, where the Spirit is dominant, and Cosmic Substance, where the Astral is the dominant partner.

The second lecture tells how the Cosmic and Earthly streams work into and out of the Earth, and through plants, however for the sake of comprehension, it is best to talk of this a little later. A better place to start is the third lecture, as it provides a very useful and practical indication of the four primary activities and their physical carriers. Sadly, his description is not as clear there, as when he tells a similar story in his medical lectures (7).

In the third lecture, he outlines one of his greatest gifts by showing how the elements of protein act as the physical carriers, of the four astronomical energetic spheres, into life. We only need to look at the reality of a star to know that Hydrogen, the lightest, and first element of chemistry, is the base fuel by which a star runs. A star's very real EM forces, arise from the nuclear generator at its centre, fueled by the combustion of Hydrogen and its first 'child' Helium. So wherever we find Hydrogen in nature, we have the physical tracks of the star forces, we call Spirit. It follows that nitrogen, found around the planets, eg our atmosphere is 80% N, is the physical carrier of the planetary activity, we call Astrality. Oxygen, found in a free state in our atmosphere (20%), and liberated by plant life processes, is the physical carrier of the life giving Etheric, while Carbon, the physical basis of life forms, is the carrier of the Physical forces. Sulphur – the 16th element of chemistry – acts as an 'oiling agent', allowing these four elements to combine and work together, into biochemistry. Too little Sulphur and the bodies become stuck and in Humans we see autism, while too much Sulphur and the bodies can not take hold of each other,

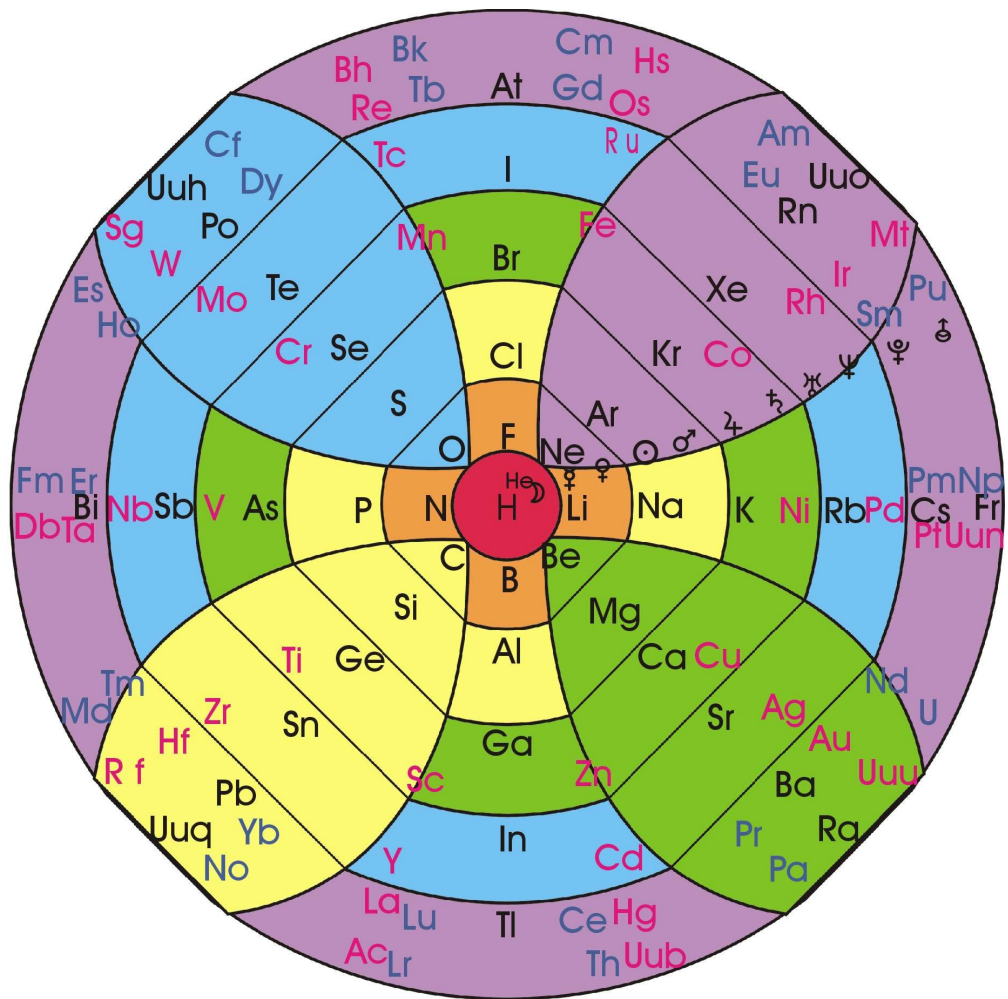
and we see hysteria manifesting. In lecture 3 RS did not tell us of Hydrogen's incarnating 'architect' function, he only talked of its excarnating function.

In aerobic life processes, we find that Hydrogen binds firstly with Carbon, to form methane before binding with Oxygen, to form the many carbohydrates. Later nitrogen joins in to form the proteins. Here Hydrogen provides the plan for the Carbon and Oxygen to use in their building activities. In lecture 3, RS only describes the anaerobic pathway in his description of the elements relationships. (C > N > O) The incarnating role of Hydrogen needs to be considered, as it is the bringing of the plan to the contractor and the workers.

To carry on this building metaphor for a moment, we can see Nitrogen – the planetary element – as the great energizer. Consider, the planets are the only moving part of the game. The Stars – while we know they are moving – the distances are so vast that within our life's experience they do not appear to move, and hence we call them 'the Fixed Stars'. We also know that if water – a carrier of the Etheric – is left to itself it will become stagnant. It needs outside influences to move it so it can stay alive, by activating and adding Oxygen. The Earth, we can see also sits there and slowly decays. So from our experience, the planets are the only moving parts, and their kinetic alteration of the Sun EM body, as they move through their Solar Union EM Spheres, leads to alterations in both, a) how the Star forces are altered on their journey through the Solar system EM body, and b) how we experience the other planets formative influences, due to their alteration of the Earth's magnetic field. It is nitrogen that provides the physical pathway for this planetary Astrality to move and activate all other parts of the life processes we deal with in nature. However, Astral activity is chaotic if left to itself. It will follow the EM wanderings of the 9 planets, with no limits. In Buddhism the astrality is characterised as a beast that needs to be identified, tamed and then used. (11) In lifeforms, it needs a plan to follow, and this comes from the Star 'architect', who provides the direction to the 'head contractor', the Planets, who then use the Atmospheric Etheric 'workers' to do what is needed to the Earthly materials they have to build with.

While the Astrality is 'the energiser', its energy is more of the nature of enthusiasm, and a hyper activity often seen associated with the many nitrogen alkaloid drugs. We need real food to stay healthy, and this comes via the Etheric and oxygen. Nitrogen readily attaches to Oxygen so it can stabilize as NO₂, similarly the Astrality uses up the Etheric /oxygen during its 'enthusiasms'. In our rhythmic system the lung processes are maintained by the astral related Potassium, which needs to be continually balanced by the circulatory systems Magnesium based Etheric activity. If Potassium levels in the blood become too high, the Astral dominants and heart palpitations and heart attacks, are the result. These two poles need to continually work together, to keep each other from excessive expressions.

We find this basic arrangement of the bodies outlined above in all kingdoms of nature. Even though the lower kingdoms do not have an incarnated Spirit, this 'Star' principle still plays onto those kingdoms as a collective influence, directly from the stars. It is experienced as we experience warmth. It is all around us and we are encased in it, and so we have access to it. This influence starts with the species type, and can be seen in the collective organisation of the 'flock, mob or hive'. Some people call this external organisation a Deva. Beyond this, the tracks of the Spirit can be traced through its working into the other energetic spheres, that are incarnated. Given everything is electro magnetic, all the energetic activities have to work into each other. The Spirit works into the Astral, Etheric and Physical spheres, while the Astral works into the Etheric, and Physical. All the lower activities also push back outwards into the spheres above. All these interactions leave tracks we can follow. Once we understand them, and their relationship to chemistry, we can use them as part of our energetic bag of tricks. (1)



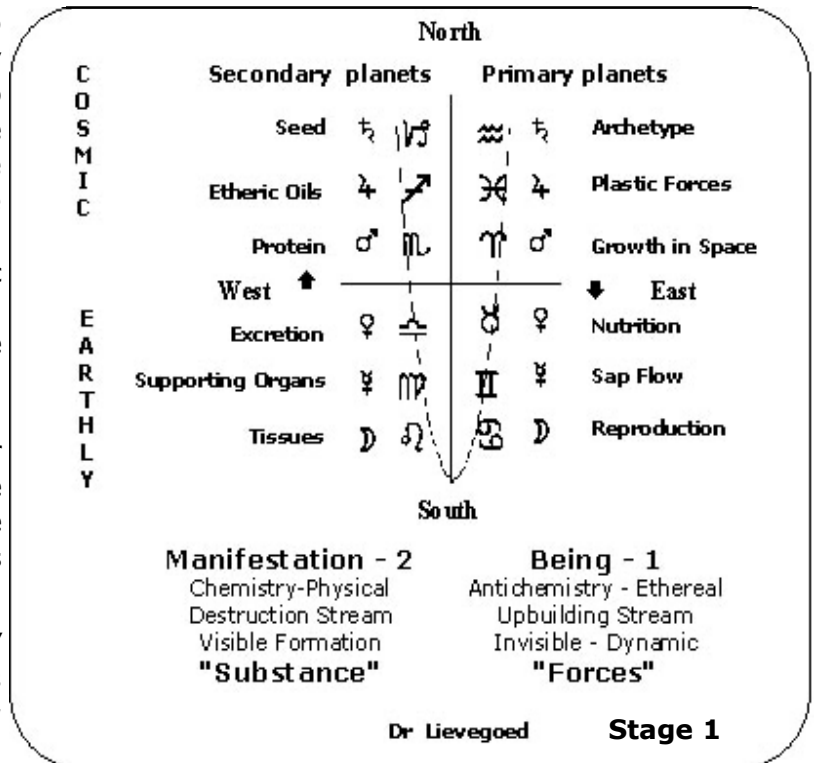
Spirit in the Astral Formative Forces

The incarnating and excarnating journey of the Spirit working with the other activities can be seen in more detail when seen from the perspective of the planets, as told by Dr Lievegoed. (14) The Cosmic and World Spirit resonance's (the plan) enter the planetary sphere and are taken hold of by Saturn 1. He becomes their servant, as the 'astral representative' of the architect on the board of the contractors company.

Jupiter 1 is the engineering head, who brings the Spirit and the Astrality together by making suggestions as to how best to adapt the plan to the requirements of the site. Mars 1 is the job foreman, who needs to organise the schedules for the actual work to begin. At Venus 1 we see the Etheric accumulating the required resources and materials. Mercury 1 brings all the workers together, while the Moon 1 makes sure the physical site is ready. This whole phase is the preparation for something to happen. This is the 'coming into Being' phase 1 part of the cycle. Work, birth or germination is about to begin.

The outward moving 'manifestation' phase starts with the growth processes of Moon 1 which wants to just grow endless cells, being directed by Saturn 1's plan, to form themselves in tissues,

(Moon 2), so more organised growth can begin to form. Mercury 2 provides the fluid movements needed for these tissues to be sustained, by facilitating the Etheric activity, while Venus 2 provides the nourishment for growth to be sustained. This included the flow of minerals and water upwards but also the products of photosynthesis back to the roots. The processing of waste products is also done here. Venus 2 brings the plant to flowering, but it is not until Mars 2 with the introduction of the light filled astrality that we see the formation of proteins as pollen etc and the actual act of fertilization occurring. Jupiter 2 brings in the atmospheric light and warmth, leading to the formation of fats and other alkaloids, along with fruit quality. It is the Saturn 2 process that sees the contracting forces dominate, and seeds ripen, so the stars plan can take one step further. Behind all of these processes Saturn has stood holding the basic plan in place, from which the other planets could divert a little way. If the etheric activity is carried further into the fruiting process, for example, a certain amount of flavour is exchanged for larger fruit, and more leafy subsequent generations can result. An upright annual plant such as Chamomile *Officinalis*, can start to exhibit perennial and sprawling characteristics of its wild cousin, but the core plant type remains. (3) Saturn 1 holds the plan of the species all the way through.



Spirit in the Etheric Formative Forces

The layer of our creation below the planets is the magnetic field of the Earth, within which our atmosphere is found. Within Biodynamics this is the realm of the World Etheric and its parts are the Ethers and the Elements. Much has been written and investigated about this

sphere, even though it brings the most confusion to the overall BD theology. This is due to some people placing this realm as central to the whole BD story, when it is only one of the six main layers of activity we have to work with. It is not appropriate to go into this topic further here, as I have addressed it elsewhere (20). See page 6.

In its journey through the Atmosphere , the Spirit is best seen in the working of the Warmth Ether and the element of Fire. In RS creation story of our Solar System, warmth is the first state from which all other states arise. This period is called the Old Saturn period, due to the primary ball of warmth extending out as far as Saturn. Marti (21) says this is when time originates, and that the warmth ether developed during this period, making things come into existence, and furthers their development and brings them to maturity. The stages of time through life such as the change of teeth and puberty are bought to us through the warmth ether. Van Gelder (22) emphasises 'the impulse-creating warmth of enthusiasm that occurs as the intention that underlies action' and provides directionality to life. (The astral enthusiasm talked of earlier is more of the excited hyper active kind, rather than the spirit intentional energy indicated here)

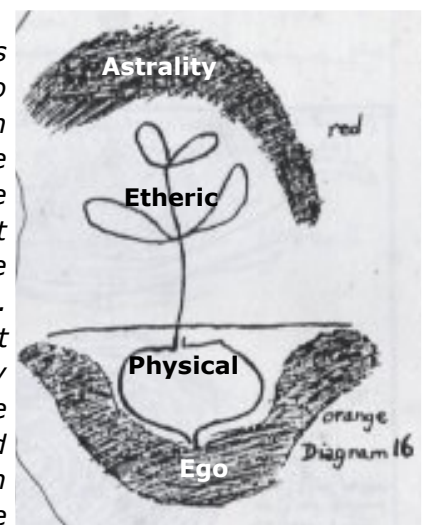
All of these images as similar to those talked of earlier as qualities of Spirit.

While the Ethers have become the cornerstone reference for a Wachsmuth influenced Goethean observation of nature, - without any reference to the Astral or Physical Formative processes - RS gave no preparations that directly relate to them, and no specific tasks one can take to effect them, other than manipulate the physical elements of warmth, light, moisture, and soil quality, we place around a plant. Which are all standard tasks of gardening. Within the Agriculture Course there is only two clear undisputed references to the Ethers. Their story is told within the lecture series 'Man as Symphony of the Creative Word'. (28) This is probably why the Etherities can not understand the Agriculture Course after 100 years.

Spirit in the Physical Formative Forces

While the Ethers are the workers that stand two steps back from matter, and bring growth energy from the atmosphere to the plant, it is the next layer down in matter, that we find the Physical Formative Forces. These processes stand just behind substance, and are directly involved in the movement of substances. A significant hint of the Spirits role in this sphere is in lecture 8 where the following picture is provided with these accompanying words.

. "In man the greatest possible quantity of intestinal dung is transformed into cerebral excrement because man bears his ego on the earth. In animals the quantity is less. Hence there remain more forces in the intestinal excrement, of an animal which we can use for manuring. In animal manure, there is therefore more of the potential ego element, since the animal itself does not reach egohood. For this reason animal dung and human dung are completely different. Animal dung still contains ego-potentiality. In manuring a plant, we bring this ego-potentiality into contact with the plant's root. Let us draw the plant in its entirety (Diagram 16). Down here you have the root; up there the unfolding leaves and blossoms. And as above, in the leaves and blossoms, the astral element (red) is acquired from contact with the air, so the ego-potentiality (orange) develops below in the root through contact with the manure." (more on this later)



Here we are bought to the image of Human manure being of a fundamentally different

nature to animal manure, due to the internalised Spirit of the Human, using up all the 'ego potential' left over from the animal. The suggestion follows that if we are to use human manure, for agriculture, we need to put it onto pasture so it can be taken up by plants and then feed to animals, before we use this manure for our own food crops. By doing so the plants concentrate unused Astral and Spirit forces, from the environment. The animal uses the astral forces, in the formation of protein and organ systems, but leaves the Spirit forces unused, as it is not rationalizing its existence, and writing articles such as this one. We can benefit from these leftover forces, in our lively thinking and directed willful actions, when we 'collect' them from plants and animals we eat.

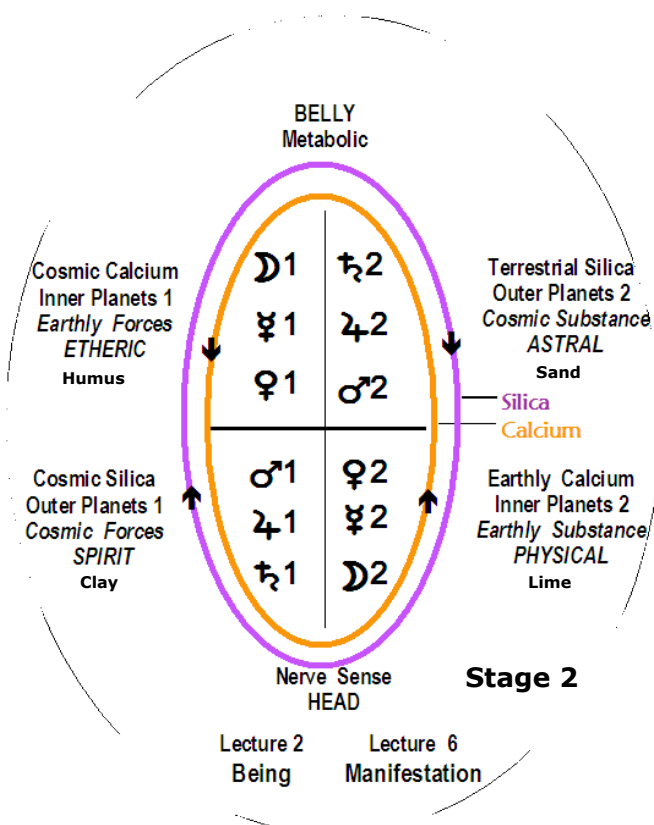
But not all of nature's growth is based upon manure. So Spirit forces are not only available from manure, they must be in nature already for the plants to be able to accumulate them.

The story of how the Spirit forces accumulate in the soil and root zone in the first place is given to us in the second lecture. After the initial description of the threefold 'agricultural Individuality', there are 14 pages (of the green edition) describing how the four energetic activities work, as the Physical Formative Forces, into the Earth, through Sand, Clay, Humus and the alkaline Cations. This seasonal based story is enlarged by two other lectures given a week apart in 1923. Each of these lectures use a different language to tell the same story. (28 & 29)

Firstly we are told of the Cosmic streams cycle, followed by the Earthly processes journey. In lecture one, the External activities are outlined, and we are left to assume the cosmic activity is coming from above. Its source is Spirit and Astral spheres, which work through the outer planets, the elements of light and warmth, and the siliceous substances. So wherever the cosmic stream goes so goes the Astral and Spirit.

In lecture two the story begins with the autumnal light and warmth moving into the Earth with the help of the siliceous sand, within the soil. We need to appreciate that the Cosmic and Earthly processes are each a cycle, moving from one season to the next. RS chooses to start with the autumnal part of the cycle, which corresponds to the ending stages of plant growth and thus the Manifest phase 2 of the planetary story given earlier.

Once we look into the physical Seasons story, we can see a development in the structural order of the Physical Formative Forces, from that given in the Agriculture Course. The seasons story is told in the 'Sap Stories' (28) and Elementals and Ethers stories (29). I call this change of energy orientation, moving from Stage 2 to Stage 3. (see next page) The Direct and Indirect planets stay the same, however a further flip of the Indirect group can be observed. The Cosmic Forces and Earthly Substance change places providing us with the flow of these activities that show through the seasons. This order is most strongly indicated as a 'formative' pattern, when we observe the chemical elements 'Metallic and Gaseous States' (6) , and follow the Chemical Elements through RS medical lectures, (pg 11) and onto the Sap Stories. As part of the Alchemical Chemistry story, my 'Rosetta

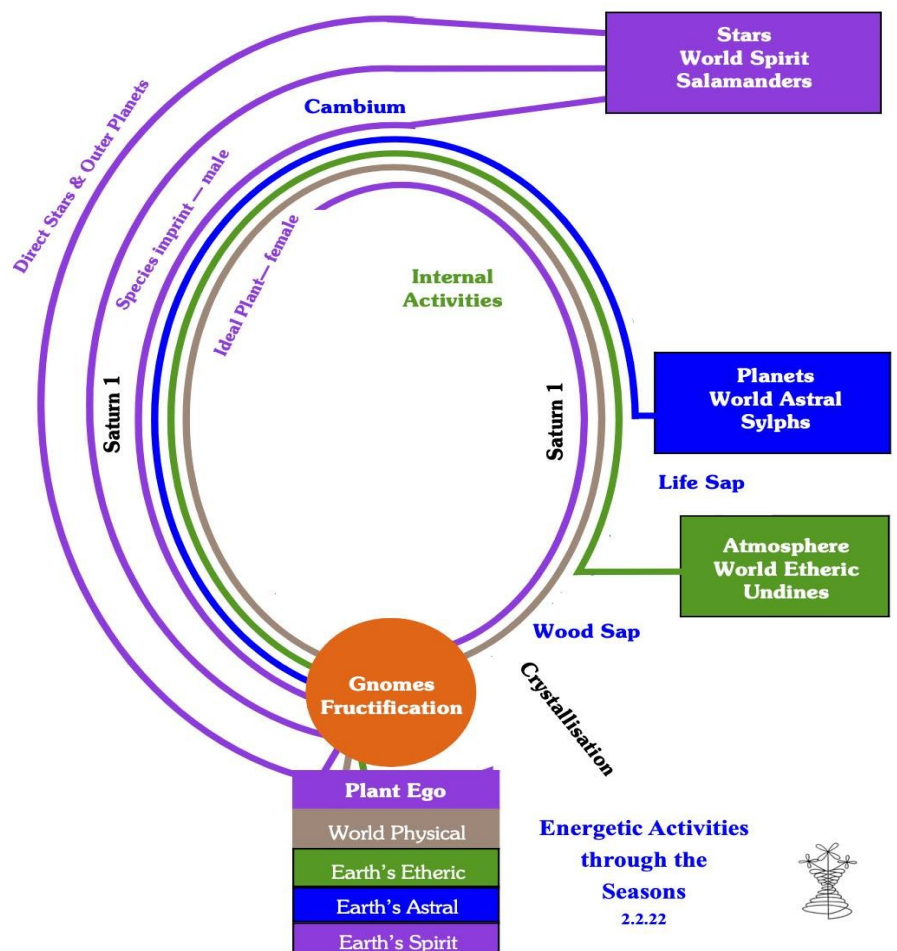
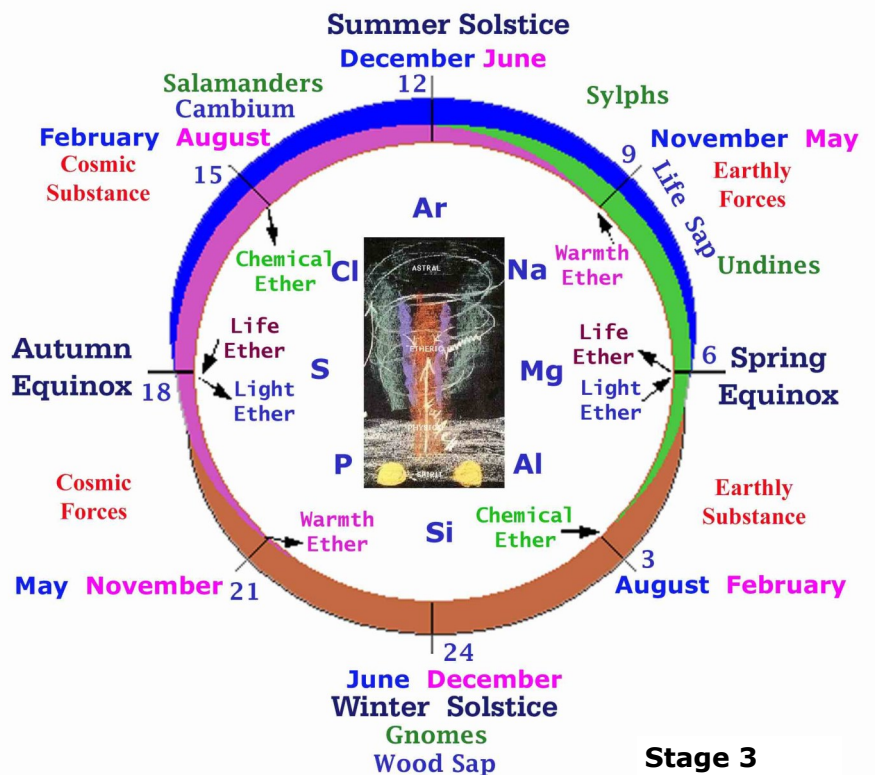


Stone' picture arises, (see pg 13) which connects the Physical Formative forces (PFF) to the Chemical Elements, and to the Seasons. **Stage 3** is an image of "What is Manifest"

The inward part of the cosmic cycle reaches a peak of consolidating activity during the time RS calls 'crystallisation'. This occurs in the weeks after the shortest day, in the northern hemisphere, and appears to be related to the Earth crossing over the Sun's path (2). This inward stage, sourced from the above ground, metabolic sphere, is firstly called the Cosmic Substance phase of the cycle, within which the Astrality is the dominant partner. In (29) RS talks of the warmth processes coming from the Stars being drawn into the plant, through the growing season and manifesting, with the other growth processes, as the 'female' cambium processes, that pushes the root exudates into the soil. This 'ideal plant' seeps into the Earth, in Autumn. The gnomes gather up all of this material and energetic residue of this seasons best possible plant. A plant appropriate to its growing period. A Phenotype of its time.

The Star stream, has a second 'male' pathway, where the star forces that carry the new species impulse, enters at the seed chaos phase of the plant, which occurs at pollination. This keeps the rose being a rose. This is the annual reinforcing of the Genotype.

We are told how during the growing season, the Earthly forces want the plant to deny the Spirits plans and spin off in all sorts of directions. This Spirit pathway through the seed, keeps things on track, all the way through to the next



seed set, while the Earthly female stream wants to keep it changing throughout the growing season. Saturn 1 keeps the Spirits message on track.

A third pathway sees the Cosmic Spirit forces taken up directly by the Earth and collects 'at the centre of the Earth', as the Plant Ego, and from there it can work back outwards. During winter all these streams of activity are gathered up, along with Etheric and Astral Earth forces, by the Gnomes, in the Fructification event, to make the conglomerate 'Wood Sap'.

From the crystallization point the cosmic 'Saturn 1' stream must again work upwards, as part of the Wood Sap, through the plant and all the way through to the new seed formation, for the complete plant cycle to be fulfilled. RS suggests (three times) that if this upward cosmic activity, or Cosmic Forces are not strong enough, we need to add clay to our soil to help it along. RS gives an example of a dominant Earthly substance and a weak Cosmic Force stream, when he talks about fungal problems in lecture 6 of GA 327. Which means the Cosmic forces are being over powered, and why he says the problem is too much vitality. The over active Earthly Substance is not being harnessed by the Cosmic Forces.

A fundamental characteristic of the Cosmic activity, is that it works as a contracting 'anti clockwise' force, while the Earthly processes work through the clockwise expansive spiral. As the cosmic activity comes from the stars, the cosmic stream moves from the periphery to the centre, hence its autumnal movement into the earth to crystallization. Wherever we find the cosmic process we find contraction. In the root zone it forms tap roots, as it moves through the leaf zone it causes leaves to serrate and become pointy. In the flowering period it brings the contraction of the anthers and the development of pollen, the deep colours to the flowers, while within the fruit zone its warmth activity brings the roundness to fruit and seeds, but more importantly it contracts, through a dehydration process for the ripening of the seeds.

The contracting processes are played off against the expansive process bought by the Earthly alkaline physical and etheric activities, at every stage of plant growth.

In the below ground 'nerve sense' region, which corresponds to our head, both the activity of the astral and spirit can be found, however in the 'thinking individual', or the tap root of the plant, the Spirit is playing a dominant role. In the metabolic region of lifeforms we will find the astral and spirit are both necessary, however the astrality is the dominant overall player of this pair, there. Hausmann, in his medical writings (12) talks of the solution for shrunken kidney diseases being bought about by the Internal Astrality being needed in the metabolism to stimulate the Internal Etheric into action, and thus produce a dominant catabolic expansive movement, in that region. If the internal astrality is not strong enough - due to an overly active World Astrality over powering it - the internal etheric becomes sluggish and various circulatory problems arise. In this relationship we are shown an image of the interaction of the Cosmic Substance and Earthly Forces outlined in various ways throughout the course. This is also the picture of Equisetum RS asks us to research.

The Spirit needs to be present in the metabolism as well, to bring in the warmth needed to contain inflammations which arise here, and to keep the Astrality under control, while maintaining the processes associated with the liver, gall spleen and pancreas, however overall it plays a secondary role to the Astrality. In the nerve sense system their roles are reversed.

We know a plant will not grow on light alone. Warmth must also be present. So, the light forces above the plant carry the astrality, within which we will find the birds and insects, however we must not forget the role of warmth and the activities this facilitates, such as seed strength and fruit flavour. The larger mammalian predators draw upon the warmth of

the atmosphere for their existence. (15)

It is through the Autumn period, that the Cosmic partners change dominance as they move within the soil. The Spirit activity becomes dominant as the 'Cosmic Forces', strengthen through early winter ready for the upward phase of the cycle. This term appears elsewhere in RS literature and refers to the forces that comes from above, (both stars and planets) and within which we live, and which can be detected with our back brain, as 'cosmic imaginations'. This is the constant stream of random images that cross our 'minds eye', which we consider as thoughts, and dreams. It is with the help of Phosphorus that we can bring these cosmic imaginations into our front brain to make them rational objective thoughts or clairvoyant predictions, depending on our skills.

RS use of this term in lecture 2 allows us to follow these cosmic gifts through the plant. It is in these forces (Outer Planets 1 and especially Saturn 1) that the 'will of the species' is being carried, so that the seed that is finally produced will stay true to type – Genotype. It is possible to alter the astral and etheric parts of this journey through the plants life, and bind in other characteristics that do show a divergence from the parent giving rise to the Phenotype. However no matter what changes one makes to the colour of flower or size of fruit etc, an apple tree will only ever produce an apple. This is the Spirit / Cosmic forces keeping things on track.

For healthy seed formation, both parts of the cosmic stream need to meet and intermingle. If this upward stream, fueled by the spirit is not strong enough, and 'runs out of steam' before it reaches ripening, fungal rot attacks will become evident, usually from the time of flowering onwards. They do occur earlier from this same cause, such as 'damping off' disease. This is due to the Earthly Substance processes , from below, dominating. If the warmth and light does not come from above, then whatever is brought from below will not be 'cooked ' sufficiently and alkaloids are not produced, with the seed not contracting enough to retain viability and strength of germination in the following spring. If the Astrality works in too strongly we see powdery mildew and rusts forming, along with all manner of pest attacks.

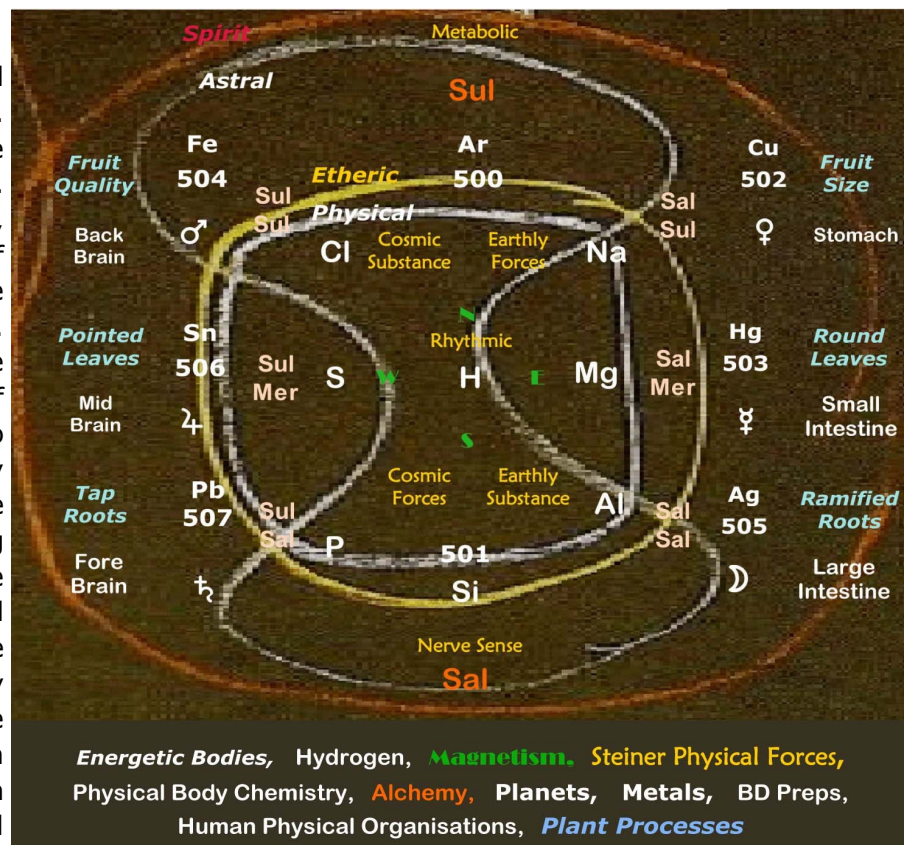
While I have told the 'cosmic' story here, the whole fungal story is only understood when the Earthly poles journey is added to what is said here. See (9)

So back to the manure's ego forces. The 'Plant Ego' is the primary spirit activity sitting below the plant, in the siliceous substances. The plant takes this up, along with Earthly activities in the early Spring. If this is eaten before it gets to accumulate some 'atmospheric spirit' from the warmth and seeding processes, this materialised spirit activity will be given onto the animal, and remain unused to be given back to the Earth in the manure. Having been 'worked on' by plants and animals it is fair to assume that this is a more sophisticated form of Spirit, than that found coming directly into the Earth from the Stars, and intensified through crystallization, but nevertheless it is still a Spirit activity. The difference between these two forms of Spirit, could be imaged as the difference between the octaves of C in music. Same tone, but a different harmonic frequency. Or the difference between the experience of taking homeopathic Silica and drinking a fresh carrot juice.

The Spirit's footprints through the mineral sphere. (23)

The following section deals primarily with the elements of the third 'Cosmic' ring of the Periodic Table. All of the elements in this ring are considered light or warmth bearers, who often burn with a very bright light, often cold, eg Sodium, Magnesium, Aluminium, Phosphorus and Sulphur, or in the case of Silica act as a light enhancer. Chlorine carries this light and warmth process so strongly that it quickly burns anything it touches. This high light phenomena is best understood when we place planetary rulers over the 12 rings of the

Periodic Table. Twelve is a twofold division of the 6 primary rings. (27) These elements sit on the fifth ring based on this division. This ring is ruled by the Sun, which is the primary source of World Spirit activity. All these elements are THE light bearers. In the overall scheme of the Periodic Table this is the ring of the 'Cosmic' physical body, and so this is where the primary energy of creation is carried into the physical body, thus allowing manifestation to occur. The elements of this ring are all central elements in anchoring the life processes, as shown in my 'Rosetta Stone' image. These are the elements Dr Hauschka uses in his discourse on the elements in the Atmosphere, Hydrosphere and Geosphere organisation. (4)



Clay

While Silica is a primary carrier of Spirit in nature, and we see it in strong upright structures of the plant, it is with clay, that we can see the 'good heart' bringing qualities, in plants. The key to clays role in stimulating the upward Spirit activity can be found in the role of Silica's intimate partner in clay, Aluminium. While aluminum silicate's are found in nature, something further has happened to these two to form the lattice structure of clay. We know that it takes tremendous energy to separate them in their clay bond, which suggests tremendous energy has gone into clays formation. Clay forms in shallow water environments, and the energy source is most likely the Sun beaming down upon the Earth, everyday. We do not talk much about Aluminium in agriculture, as like Silica there is plenty of it about, however we have recognised the important role Aluminum's smaller brother Boron has in plant growth. Boron is essential for the upward flow of plant sap. If it is in short supply we see the plant wilts through the middle of the day. Boron also has a role with Fluorine in the solubilisation of Silica, so it can become available to life processes. This relationship is seen in glass making. Similarly Aluminium is a very 'softening' element. As an amphoteric element it can act as an acid or a base depending on who it is related to, and shows a similar tendency with Calcium and Silica, moving between both with equal ease. Dr Hauschka (4) talks of its mediating role in the plant between the blossom and the root, when it 'carries the Earth forces upwards from the root, and the sun forces of the blossom to the root.' Which is a mimic of the job done by Boron with regard to physical nutrients carried in the sap. The softening qualities of Aluminium upon the rigid crystallized Silica, can be seen further in clays ability to be modeled by outside forces. With the help of Water Air and Fire, clay becomes very useful pottery. Where the Silica processes dominate the Aluminium we have the development of precious gems like Ruby, Sapphire and Emeralds, along with others. While where life moves towards the Lime pole we form bricks and build houses. Without adequate Boron and Fluorine, Silica substance will not be available to the plant. Similarly Aluminium with its bond to Silica in clays, helps make the

Spirit carrying qualities of Silica available to the plants, in the upward moving force stream.

As every gardener knows, clay soil by itself will not grow good plants. It is only when humus, sand and missing cations and anions are added, that plants grow well. I can speak with some experience of clays activity, as I have had a garden on volcanic pumice ash for the last 10 years. Therefore there is very low humus, low cation exchange capacity and no clay present in the native soil. Initially I added plenty of compost and other mulch materials and added the appropriate range of minerals indicated by soil testing. The first two years saw good growth, as would be expected of a new garden, however in year three everything stood still and looked 'weak'. I tried more Sulphur, given we have 2000mls of rain a year, and various liquid manures, however nothing really did it. Soil tests were fine and there was plenty of organic activity, but not good growth. Eventually I began applying crumpled yellow clay, obtained from some 100kms away. I used approximately a 6 inch ball of clay to 10 sq mts of bed. After the next rain that section of the garden took off and 'good hearty' vegetables began to grow. 7 years on and the garden is still producing very good crops of vegetables. Capsicums are a very good indicator of the clay function. If it is not strong enough the capsicums will not size up. They set, and stay small and are liable to rot before ripening. Applications of clay both as a substance and as a homeopathic spray, have seen the fruit immediately begin to size and ripen fully, without rots. It is as if the tourniquet is released and the upward sap stream pushes right through the plant and out the fruit. (10)

Phosphorus

Another element the Spirit uses in its journey through matter is Phosphorus. Dr Hauschka talks of its polarity with Aluminium, in the Geosphere (5), while my circular Periodic Table (6, 23) also identifies Aluminum and Phosphorus, mediated by Silica, as the elements of the Nerve Sense system and its companion the soil.

Unlike Aluminium, Phosphorus is very finely distributed over the Earth, although life processes find access to it from decaying plants and from deposits of bird manure, however healthy soil fungal biology is needed for sufficient plant uptake of phosphorus from organic sources. While Aluminium is a stable element due to forming very strong bonds with other elements, Phosphorus can self ignite if left open to the air, giving off a very bright cold light. Like Aluminum it is amphoteric, and moves easily between Calcium and Silica. Phosphorus proteins make up our nervous system, which we find very active in our skin, while its association to Calcium is found at our centre through the formation of Calcium Phosphate in our bones. It is also important in energy generation through the processing of carbohydrates via the ATP process which develops during photosynthesis, and provides energy for many other processes. It is Phosphorus that allows us to bring our picture consciousness into clear reflective thoughts, in our front brain. Here Phosphorus helps Silica incarnate our spirit, so we can achieve self consciousness. Dr Steiner (13) refers to Phosphorus as a dissolving agent that works in our brain. This process continually dissolves the 'earthing' processes of Calcium and Aluminium. Where this process is too weak we see Aluminium condensing and filling our brains, with various dementia states being the result. The Spirit can not stay incarnated when its Earthly companion is 'hogging the limelight'.

In plants, Phosphorus is an essential element, that performs several vital functions that can be seen as 'spirit functions'. It is essential as part of several central plant structure compounds, and as a catalysis in the conversion of several biochemical reactions in plants. It is pivotal in capturing and converting the sun's energy into useful plant compounds, and is a vital part of DNA, the genetic carrier of 'memory' and form of all of life. It is also part of RNA, the compound that interprets the DNA code, so proteins and other compounds

essential for plant form can be developed. The structure of both DNA and RNA are held together by phosphorus bonds.

It is also seen as 'the usher at the movies', through its role in the moving various minerals to where they are needed in the plant. In this action we see it is a World Astral element, carrying out the will of its master.

Sulphur

Sulphur (S) also carries the footprints of the Spirit, but in a more internal way than Phosphorus (P). While P is a World Astral element, S is the element of the Internal Astral arm, both in the Physical sphere. We also see in S character that it is on the anion side of the manifest etheric arm.

S is found in many more forms and internal functions than P, as seen in its importance in all protein formation. S is changeable enough to appear in 6 or so different forms, which can change from one to the other through heating. Unlike P, which works in 2 forms (elemental P and Phosphoric acid). S is inflammable in the air, and when it is burnt it has a very dark hot flame. It combines easily with Hydrogen to form the unforgettable rotten egg smell of Hydrogen Sulphide. In all its many combinations it provides heat to biological processes, which provides the images of being a Spirit carrier however "Sulphur is a uniting force that promotes cosmic essences to work together in building up matter — where we need to have more life in our physical processes, with no interference from the activities of the soul.— where an excess of it causes dizziness and dimming of unconsciousness" (26) This last image is the opposite of P, which enhances consciousness. Hauschka goes on to say that S has the role of keeping the soul from incarnating, so that the purely vegetative forces of the physical and etheric can go about their up building work undisturbed. All these images are talking of how S enters into the physical and etheric realm more deeply than P, and acts as the Spirit's facilitator on the shop floor, rather than as the director role played by Phosphorus. In the relationship of Phosphorus to Sulphur we see an image of the difference between the working of a World sphere element and an Internal sphere element.

Halogens

Other elements that carry the Spirit are those of the Halogen group and the noble gases. (1) The halogen group which include **Fluorine, Chlorine and Bromine** exhibit one quality of the Spirit as yet unmentioned. The Spirit through its highly contractive nature is a death force. Left to itself it will consume all the etheric forces available to it and bring life processes to an end. We see this in the contraction of the plant to the seed, which in annual plants brings the plant to an end. The Spirit's push for consciousness is generally met by the outward push of the physical and etheric, but if the Spirit is too much, they will be consumed and Hydrogen's secondary task of carrying the Spirit back to the stars will be fulfilled. In the Halogens we see this same quality of drawing all life and oxygen to themselves, and especially so in their acidic form when they accompany Hydrogen. Hydrofluoric acid is strong enough to melt a glass rod. Dr Steiner talks of how fluorine rounds off the expansive processes magnesium brings to teeth, in the formation of enamel. In Phosphorus we see processes directed, with Sulphur we have processes sped up and moved along, while with Chlorine we have them brought to an end. RS talks of the positive role Chlorine

plays in our stomach, where Hydrochloric acid brings the etheric activity of the food we consume to an end, in doing so our etheric body can be stimulated through this 'struggle'.

Iodine deserves a special mention, as it plays a very pivotal roll in some 32 biochemical sequences, along with being central in the control of the metabolic system, through being the prime element in good thyroid function. Only small amounts are needed, however given Iodine is deficient in most soils away from the oceans, shortages are not uncommon. "Adult population inhabiting the iodine deficient areas is characterized by a high degree of apathy, reduced mental functioning, lack of physical energy and reduced work output, all contributing to poor quality of life. Iodine deficiency has emerged as a socio-medical problem of vast dimensions associated with physical and mental retardation, neurological disorders, feeble mindedness, low educability, poor performance, social handicaps, dependability and disfigurement (1)." (25)

From this quote it is obvious that the Spirit's ability to incarnate is facilitated by appropriate levels of Iodine. I have identified the Halogens as being expressions of the World Spirit, while in the very aloof and self contained nature of the noble gases, we can see the expressions of the Internal Spirit. The various members of these families carry the Spirits activity into the other bodies. Chlorine carries the World Spirit into the Physical body, while Bromine carries it into the Etheric body, while Iodine is the carrier of the World Spirit, into the Astral sphere, all on the manifest Spirit anionic arm (1). In the circular Periodic Table, (PT) if there is one point where we can say 'God' resides, it would be with the last halogen **Astatine**. It is an extremely rare element whose isotopes have a half life of 8.1 hours, so it is very ethereal. This point in the PT is where the Cosmic Spirit meets with the World Spirit, on the manifest anionic Spirit arm. Hence the most 'Spirit' point. So Iodine being the astral element below Astatine, we can expect Iodine is doing Astatine's bidding. Iodine is Gods head contractor — to use the earlier building analogy. Iodine provides the overall guidance for the metabolic functions of the physical body, and especially the development of many brain functions, the 'home' of the incarnated Spirit.

One fact of chemistry is that biological processes make very little differentiation between any one member of a chemical family. A biological process will accept Chlorine, if it is a high enough density in a solution, as a substitute for Iodine, even though the Chlorine does not have the desire 'wattage' provided by Iodine. Hence the process will be unable to complete its cycle and cell death occurs. Eventually the process will become exhausted and other diseases follow as a result.

In the right proportions these World Spirit elements help guide some processes, however where they become too strong, the World Spirit activity displaces the Internal Spirit, and thus we see a depletion of personal will forces, while the physical hardening processes of the Spirit are enhanced. The present toxic levels of Chlorine and Fluorine we are ingesting via our treated water, are standing behind the will less compliance we are seeing presently in our populations, as the corporate takeover the planet occurs unopposed. These 'lower' halogens are swamping our Phosphorus and Iodine, so the populations can not think straight. $A+B \text{ no longer} = C$. The dementia epidemic that comes with these elements is growing everyday, due the Internal Spirit being pushed out, and the Astral body being left to its own devices.

Sodium

Of the four main cations, Sodium, Potassium, Calcium and Magnesium I have come to consider Sodium to be the 'Spirit' element. The Albrecht soil system suggests we want to create the ideal soil mineral balance for microorganisms to thrive. Then we need the cations to be in the ratio of approximately 70% Calcium, 14% Magnesium, 4% Potassium and 1% Sodium and 6% Hydrogen. So sodium is the lowest proportion however it is THE element that controls the movement of water in a system. Too much Sodium and water becomes 'held'. It is the dominant element in the extra-cellular fluid, of most living systems and with Potassium also plays a major role in the functioning of the nerve system.

I see Sodium as the Spirit controller of the Etheric, Potassium brings the Astral into the Etheric and water, Calcium is the stimulator of the Etheric element, while Magnesium helps the Etheric to bind with the Physical.

Trace Elements

In the trace elements the Iron family manifests the Saturn 1 activity into the higher bodies, while the Manganese family are expresses of Saturn 2. We can see these activities in Irons role in bringing about the environment for photosynthesis to occur, thus providing the plan for the primary basis of a plants life, while Manganese is an essential element for seed formation and maturity.

Noble Gases and Ring 6

The Spirit can also be 'collected' from the Noble Gases, and from all the elements of the 6th and 7th layers of the Periodic Table see (1) The Noble Gases and the layer 6 elements have a special affinity for the Internal Spirit activities while the Actinides work with the World and Cosmic Spirit activities.

The Spirit and the BD preparations

All of the above elements can be used to influence some activity the Spirit is involved in. Within Biodynamic Agriculture we are also given a few preparations.

Horn Silica (501) is the primary carrier of the Cosmic stream and its activity can be specialised and directed through particular chooses of homeopathic potency, and by the companion chemical elements one might choose to combine it with. While it is a primary strengthener of the nerve sense processes, especially when used in the afternoon, it is also seen to incarnate the light processes through the metabolic region, when applied in the morning. On the one hand it will strengthen the plants structure, on the other it will often force a plant into flowering, and bring great fruit quality.

Valerian (507) is accepted by most BD folk as the Saturn preparation. The relationship it has to the 'phosphoric substance' and the warming influence it brings to plants both indicate this preparation is helping to strengthen the Spirits activity in plants. In some plants this preparation can encourage movement to seed formation, in others, such as trees, it shows an increase in flowering, by often bringing it forward, and shortening the flowering period.

Dandelion, (506) encourages the Spirit and Astrality to work together, and in turn

incarnate both more strongly into the physical body. RS comments on it bringing more sensitivity to the plants to receive what they need from their environment. It has also been seen to help with fruit set and fruit sizing and flavour by encouraging the Jupiter 2 processes of alkaloid and oils development in plants.

The specific effect of these preparations can be enhanced further by using them in a particular warmth constellation and by the choice of homeopathic potency.

Cow Horn Manure (500) needs a comment, because of its time in the ground during the fructification and crystallization periods. Given this is the time when the soil is most alive with cosmic forces and earthly substances, it is fair to assume that this preparation will carry some of both this activity. Having said this we need to note that cow manure is a 'humus' substance of the metabolic sphere, rather than the nerve sense sphere, and when applied to the soil it has a very enlarging 'Earthly' effect on plant growth. When used in excess it makes for big leaves and pushes off the flowering process of plant, allowing some plants to remain in their leafing mode for a longer period. This indicates its is more related to the Earthly Substance processes than the Cosmic Forces. In clay soils this may not be such an issue, however in sandy soils a tendency to rotting diseases could be enhanced. So while the 'strength' of plants grown with 500 suggests good cosmic forces, these other indications suggest it is a very secondary influence, to the dominant Earthly Substance processes.

The Preparations and the Constellations

Aries	Sagittarius	Leo
Cardinal	Mutable	Fixed
Metabolic	Rhythmic	Nerve Sense
Flower	Leaves	Root
Mars	Jupiter	Sun /Saturn
Astrality	< >	Spirit
Flower	Fruit flesh	Seed
1-10	10-20	20-30

The question of working with the Constellations, to stimulate the Spirit activity further, can be answered from two standpoints. Both of which should be very useful, even though they focus the Spirit in two different directions. (24)

The first will be considered 'traditional' , while the second is one

of my innovations based upon RS, Lievegoed and Kolisko's suggestions

From the Thun sidereal approach to the Zodiac , it would be expected that if we wish to encourage the Spirit warmth axis of our creation we would work with the Fire constellation, Aries, Sagittarius and Leo. So we can suggest Valerian and Silica applied in one of these constellations will stimulate the activity of the Spirit in nature.

If we use the chart I presented in 'Biodynamics Decoded' (17) for defining the effect of the constellations, we can see Aries is the Cardinal / Metabolic constellation, while Sagittarius is the Mutable / Rhythmic constellations, with Leo being the Fixed / Nerve

Sense constellation.

Jupiter 1	Saturn 1	Saturn 2	Jupiter 2
Pisces	Aquarius	Capricorn	Sagittarius
Cobalt	Iron	Manganese	Chromium
506	507	507	506
	Flower	Leaves	Root
	1-10	10-20	20-30

Likewise Aries is ruled by Mars, Sagittarius by Jupiter and Leo is ruled by the Sun, whose polarity is Saturn. So if we are looking for the Spirit part of this story we would go

with Leo, Aries is the Astrality, while Sagittarius has the job of join these two together and bring them closer to the Physical body. Add the potency choice and you will have a 'spell' worth applying.

It can be further identified that as this reference system is based up the 3 fold modes ,we are working with the Physical sphere, and focusing upon the element of fire, behind these constellations we are reaching the 4 fold Etheric sphere. So I suspect this method would be good for controlling the growth of the plant ,within that season.

In the second method of working with the Constellations, we look at the references that are developed from following the planets, and in particular the image of the zodiac arising from the dual constellational rulership of the planets. The details of double planet patterns, were developed further for BD by Dr Lievegoed. In 'Energetic Activities' (18) I completed the Zodiacal relationships for the double planetary activity. This work arose from the question of how we might be able to focus the existing BD preps into their primary or secondary planetary functions. Thus this relationship to the zodiac became one possible solution. When looking at the Valerian preparation the two constellations are Saturn 1 being Aquarius, while Saturn 2 is Capricorn. Similarly if we wished to emphasis the Jupiter preparation Dandelion, we would use Pisces for the Jupiter 1 constellation and Sagittarius to emphasis the Jupiter 2 process.

To further enhance these actions we might consider which trace elements are related to these planetary activities. In the case Of Saturn 1 it is Iron, Saturn 2, Manganese, Jupiter 1 is Cobalt and Jupiter 2 is Chromium. (19). These elements are on the Etheric ring of the Periodic Table, and so will focus the Spirits activity within the Etheric sphere. To work on the Astral and Spirit spheres more strongly, the appropriate 'brothers' of the elements mentioned can be used. Potency choice for any of your remedies can further refine their focus to a particular physical system.

Given these references are arising from the planetary sphere, these remedies can be expected to work more deeply into the plants Astral qualities and processes, as described by Dr Lievegoed, and may well show up significant changes in subsequent generations.

While I have explored both these reference systems, and feel comfortable with my suggestions, this is a huge avenue of research and so much more needs to be done before I can speak with complete confidence in this approach. It worth putting here as hints of a way forward.

Epilogue

It has been fun being with this essay, and I trust there is enough here to emphasis that the Spirit is a cornerstone part of the Biodynamic 'game', and that it needs to be continually included in ones practical considerations. If there is no Spirit, there is no plan, no direction, no upward growth, and we see all the other processes run amok, leading to all manner of viral, bacterial and fungal diseases.

Biodynamics, is a world view based on the four primary parts, sourced from our environment. If a BD story, does not place itself within this context, then it needs to be questioned very seriously.

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