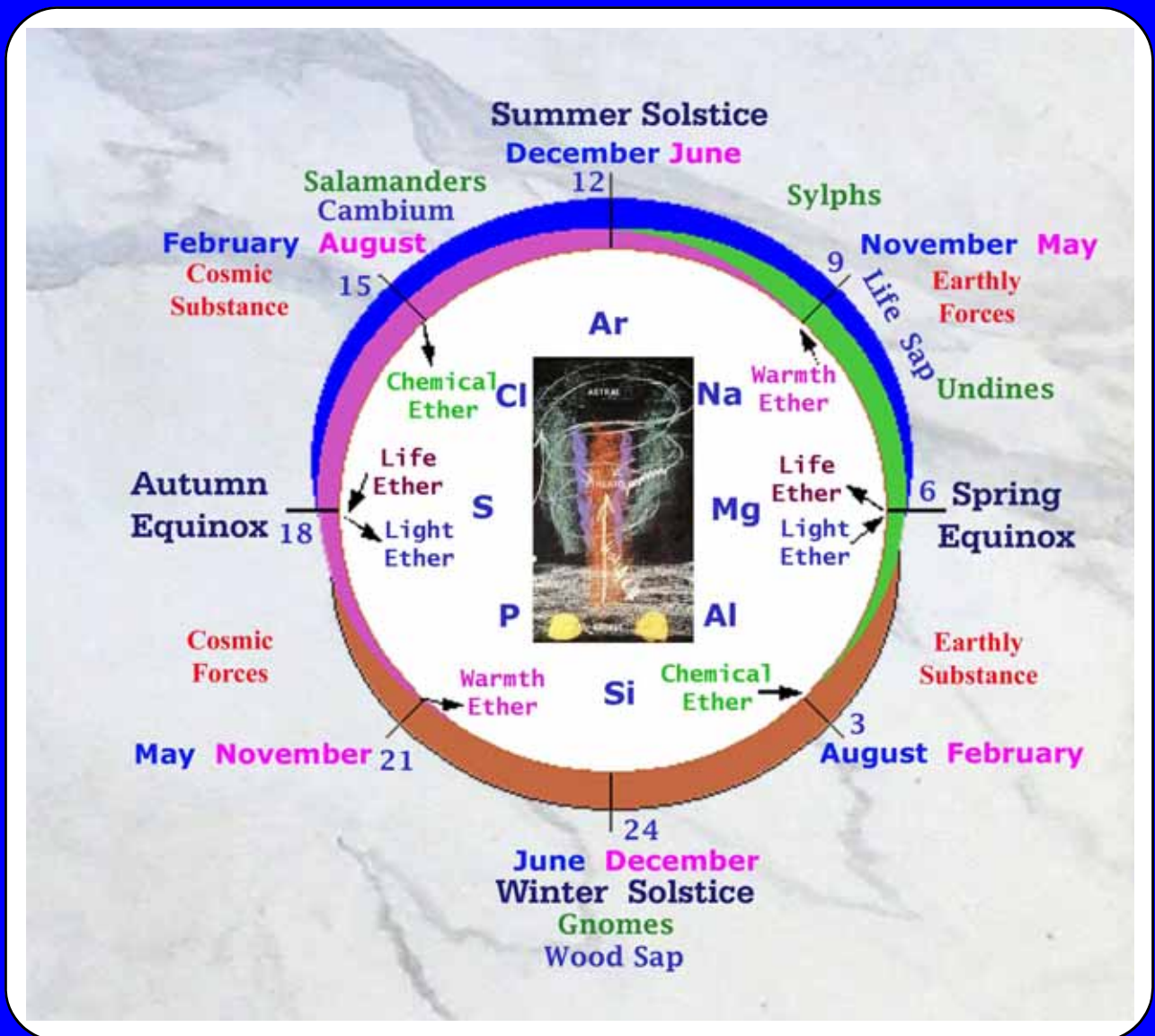


Dr Rudolf Steiner

The Growth of Plants



Glen Atkinson

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I am making available to my fellow students.
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Rudolf Steiner's Plant Growth Story

Glen Atkinson 2018

Introduction

After 40 years of delving into Dr Steiners (RS) Agriculture and Medical lectures, working on what his story was, I got to wondering what it was he actually said about how a plant grows. So, I entered 'Plant' into the search function of the Rudolf Steiner archive , and up came a range of references, of which, around 20 provided some direct story of his view of how plants grow. Some of his stories I knew, but a couple I had not come across before. It was good to find the 'Sap' Story, given on 31 October 1923, which tells of specific Plant growth processes, through the seasons. This story is then reflected into 'The Man as Symphony' (lec 7 - 2 November 1923) , which provides a clear enough story of Elementals and the Ethers, running through the same cycle. Together these two lectures give us something very special, to add to the Agriculture Course

All the lectures and paragraphs I found relevant are collected together as an appendix to this article. (if you have more references please let me know) .

Like my study into Equisetum, I have attempted first of all to condensed all the various bits into a cohesive story. Hopefully this makes your journey through the process easier. The references follow.

As is RS way, each reference tells a slightly different part of the story, from all the others. **Our challenge is to layer these stories over each other, using the obviously common denominators, as the 'structural' pieces, and merge them together to find his overall message, for how we can use nature forces to grow healthy plants, animals and humans.** Altogether this story provides a seasonal based framework, upon which our Biodynamic understandings and practices, can be organised and planned.

The theme running through it all can be summed up in this from "The Spirit in the Realm of Plants" given in Berlin, December 8, 1910 -

"Thus we cannot picture the earth only as a physical structure, for the physical structure is for us something like our own physical body, which can be seen with the outer eyes and touched with the hands, and which is observed by outer science. This is the earth body that present-day astronomy or geology studies. Then we have to direct our attention to what in the human being we have come to know as the etheric body or life body. The earth also has such an etheric body, and it also has an astral body. This is what awakens every spring as the thoughts and feelings of the earth, which recede when winter approaches so that the earth rests in its own ego, closed off within itself, retaining only what it needs in order, through memory, to carry over the preceding into the following, retaining in the plant's seed forces what it has conquered for itself. Just as the human being, when he falls asleep, does not lose his thoughts and sensations but finds them again the next morning, so the earth, awakening again from sleep in the spring, finds the seed forces of the plants in order to permit what has been conquered in an earlier time to emerge again from the living memory of the seed forces."

The cycle of the natural year is the subject, but it is RS tales of what goes on along the way that is the treasure.

It is fair to say there are seven main stories, and these developed over time. The eight is my contribution.

- (1) **Direct and Indirect growth processes**
- (2) **The polarity between the 'Sal' processes of the Earth and the 'Sulf' processes in the above ground**
- (3) **The growth processes from the previous year hold over into the following season**
- (4) **The 'Sap' seasonal stories of Wood Sap, Life Sap and Cambium and the Ethers.**
- (5) **The Cosmic and Earthly, Forces and Substances**
- (6) **The Energetic Bodies role in plant growth**
- (7) **The Seed Chaos**
- (8) **My Alchemical Chemistry (see pg 36)**

Ultimately, each of these stories has to be woven together into a fabric we see as Plant Growth. As with cloth, the Fabric of Nature is made of threads of energy, that can be pulled and released. RS's gift has been to show us the substances that control these threads levers.

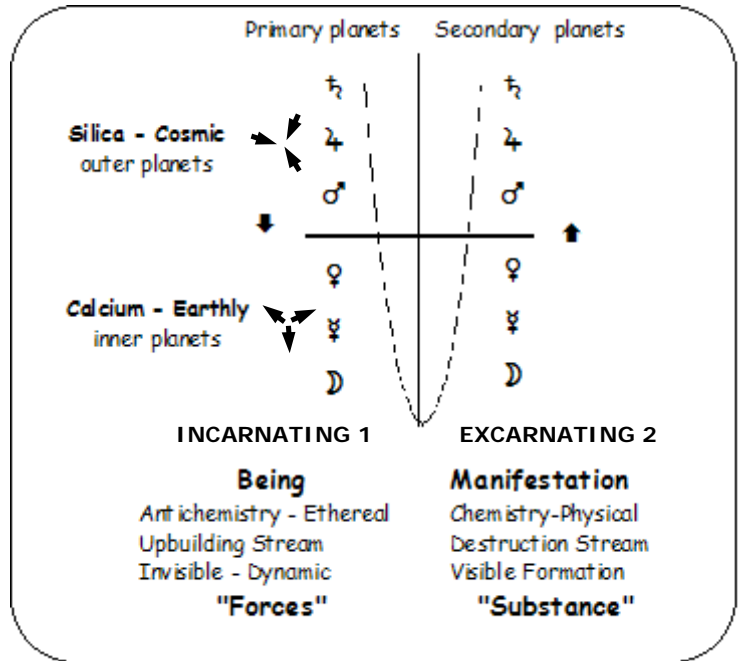
So lets first tell the story, as I see it, and then you can go through all the references to see if you agree with my assessment.

The Elemental Beings

I am known for my 'disregard' for the Elementals and the Ethers in most of my previous writings. In this article they are playing a prominent place. This is due to the role RS has given them in one of the central lectures. The value they play in this discussion is that they are 'inbetween' activities. The Gnomes for example live in the Earthy Watery environment and work to bring the Cosmic Forces and Earthly Substance processes together. The other elementals do similar things in their areas. So they fulfill a role as the place **where the basic activities interact**. Here they have value. It is not that I do not 'believe' they exist, I am against the 'elves and fairies' connotation they bring to the science of Biodynamics. Within the overall context of the larger energetic story, they find their rightful place, as facilitators of the primary processes.

Pulling the threads together

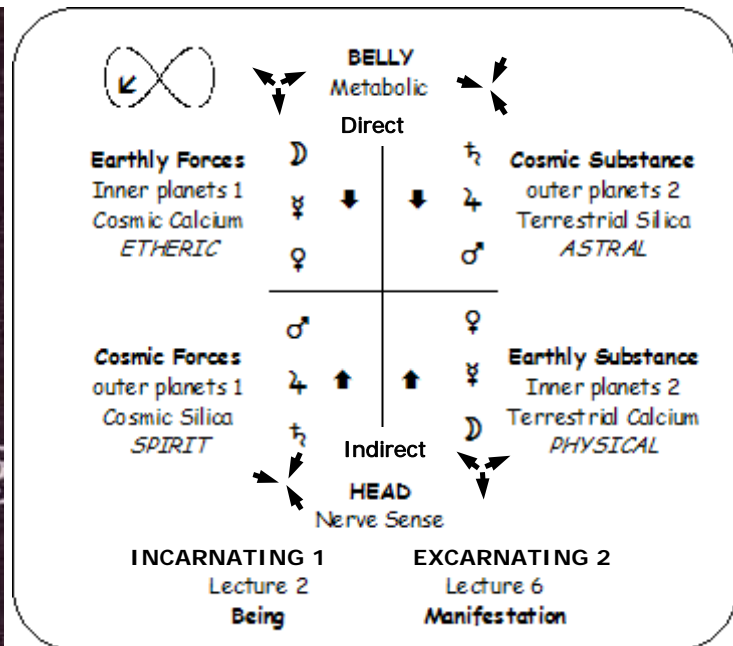
We should start with the 'Agriculture Course', but in doing so we are thrown fairly quickly into 'the middle' of the story. The first premise is '**As Above, So Below**'. Life on earth is an expression of the Forces coming to Earth from the Cosmos, which are then reflected back outwards, as Lifeforms. Dr Lievegoed describes Stage 1 of the overall process best, when in 1951 he gave a series of lectures, which described the "Incarnating and Excarnating" processes of the Planets. In the first part of his book he describes how processes come from the stars, are taken up by the Planets, adapted, and then received by the Earth. This activity then moves back outwards through the life stages of a living being. This can be called the 'Archetypal Journey', with its 'Incarnating and Excarnating Phases' describing human evolution through to the cycle of a plant. The **Outer planets** are identified as being 'Cosmic' and having a **contracting** influence, while the **Inner planets** have an **expanding** effect, on Life processes and are called 'Earthly'.

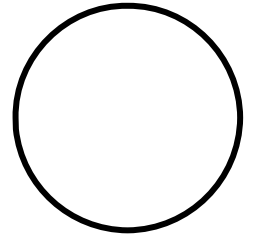
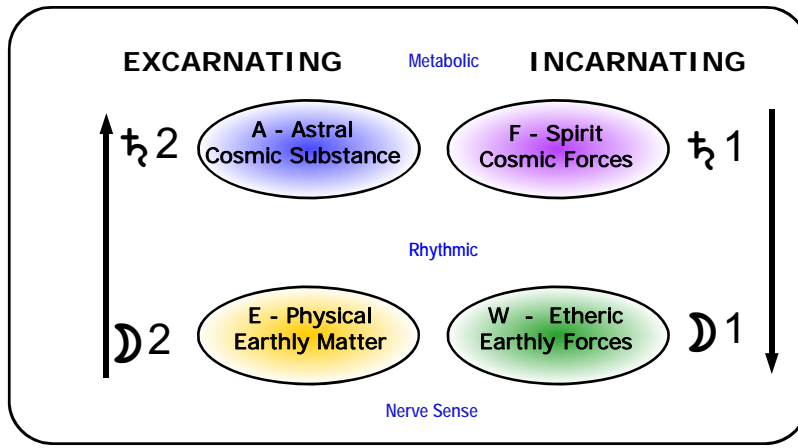
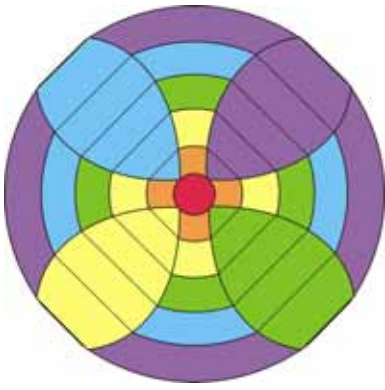


Dr Lievegoed's 'Archetypal' chart.—Stage 1

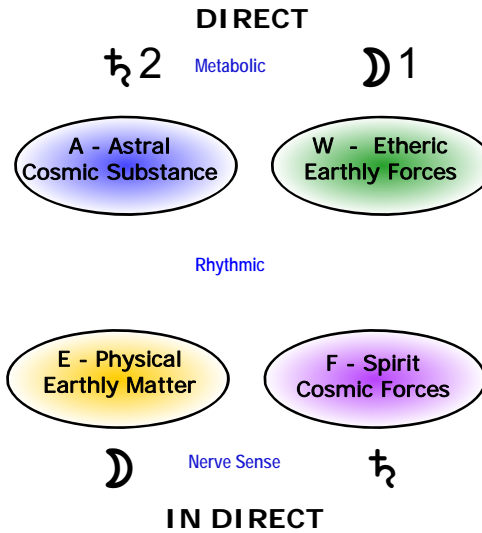
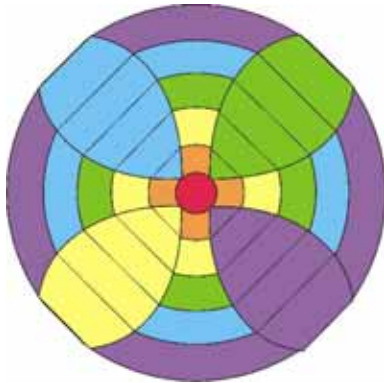
In the second part of BL's book, he talks of how **in living processes**, these planetary activities polarise with each other, to form a unified outcome eg, Saturn 1 and the Moon 2 work together to create the skeleton, and so on.

This is where the Agriculture Course takes over. RS gives us information about the how the Soil, Plants and Animals organise and manifest according to the same planetary polarities, however he describes them in a clearer manner, and in relationship to the physical systems of a physical body. BL's polarities become RS 'pairs'.

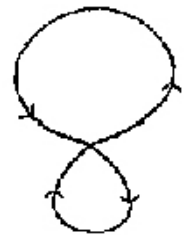
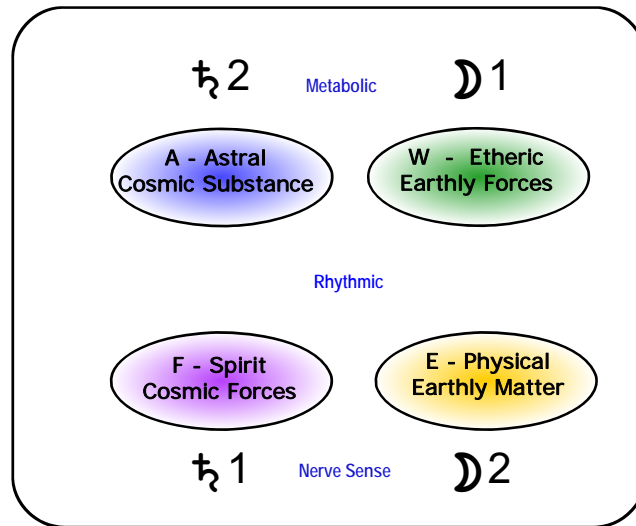
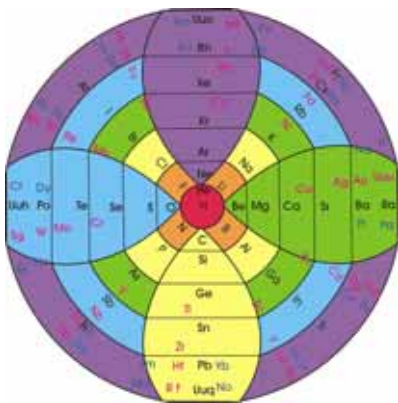




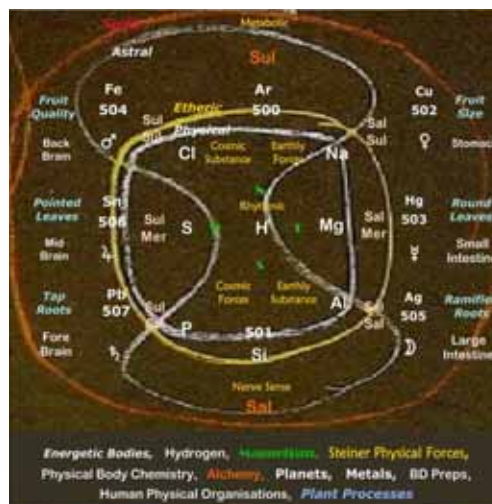
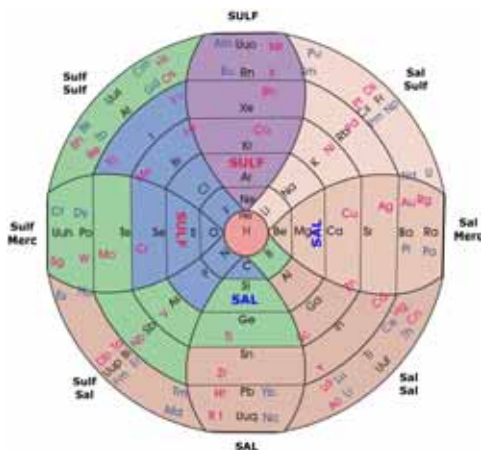
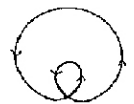
Lievegoed
Stage 1
ARCHETYPE



Lecture 8 Agric. Course
Stage 2
BEHIND MANIFEST



Seasonal Cycle
G. Rosetta Stone
Int. Phy PT
Stage 3
MANIFEST

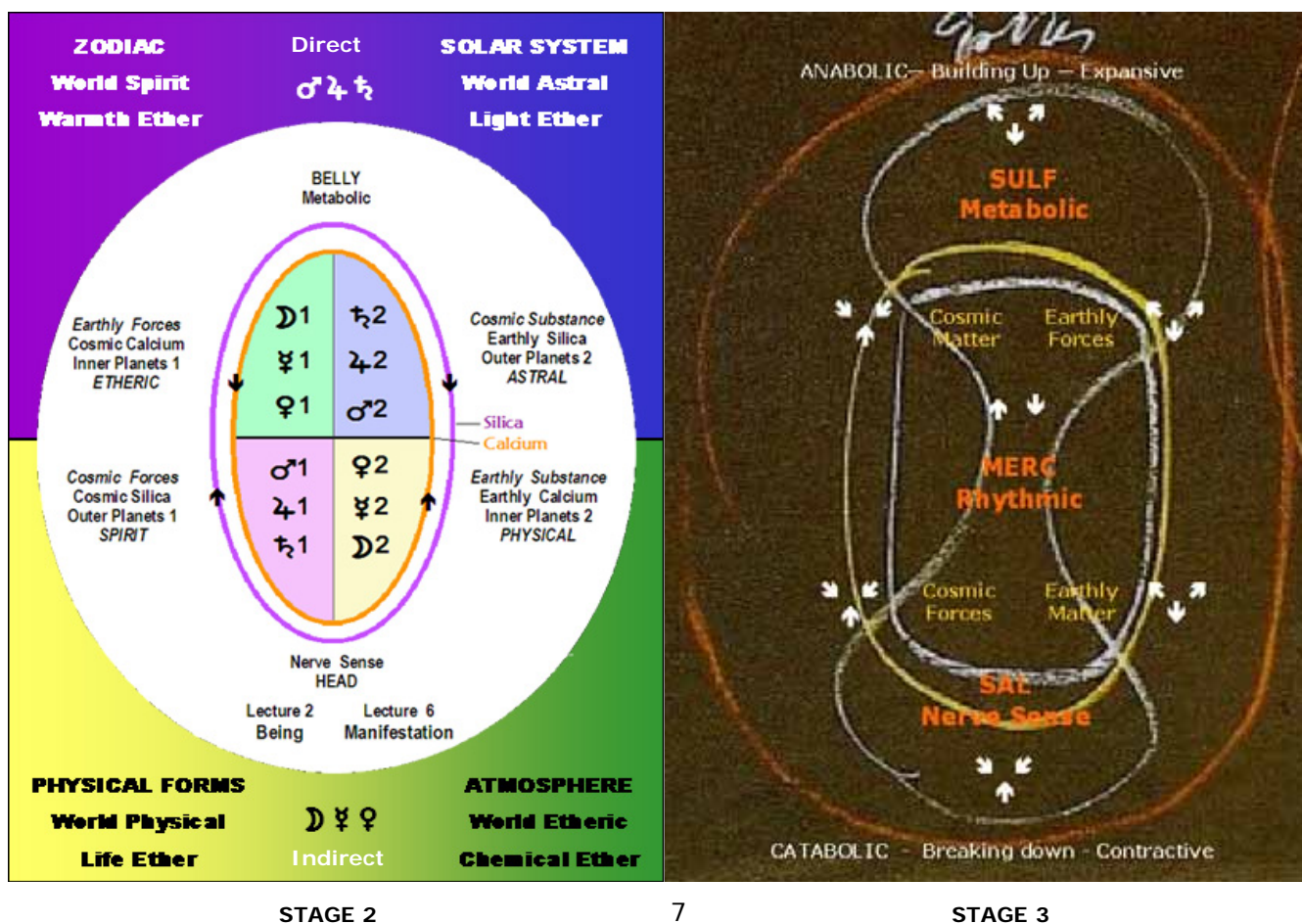


Dr Steiner provides this image of these activities, (18) in Lecture 8, and I have enlarged it, with the rest of the course, on the right. It is at this stage of the creation process, when things begin to move and polarise, and where BL and RS begin talking about **Direct and Indirect Planets**.

A further difficulty of this topic is that RS described **three different versions** of what constitutes Direct and Indirect planetary activities. I will go into the details of these three approaches later in the 'Layers of the Story'. Each of these three organisations appears to have their specific place of application. The one we are discussing here appears to be **most related to the internal growth processes of living beings**. In this version, we are focusing upon the **Direct forces coming from Above, they are absorbed by the Earth, and then reflected back outwards, as Indirect forces, in the same place**. These are firstly 'World' processes, occurring outside in nature, and secondly they work inside lifeforms to influence the way internal activities occur. These activities sound very similar to the Incarnating and Excarnating Streams, but NO, these **Direct and Indirect activities are only talked of in regards to the Stage 2 organisation**. (See BL pg 19). So yes it is complicated and easily misunderstood.

To get from Stage 1 (outer reality) to Stage 2 (inner reality) there is a twist needed in the diagram. On the Incarnating side, we flip the planets over. This provides RS 'pairs' within the physical systems. **Once we enter into Life Processes everything has to polarise**. Cations align with Anions, Positive and Negative charges attract and so on. So, like the pulsating / polarising phase of cell division, this movement towards Life appears in the diagrams via a Lemniscate twist. This middle stage 2 stage provides, **the laws that stand BEHIND creation**.

RS also defines a **primary polarity for the plant and soil**, that this 4 fold group sit within. The activity of the soil and roots of the plant are similar to the Head of the Human,



These two diagrams do not 'switch over' as described for page 6. They start from opposite places.

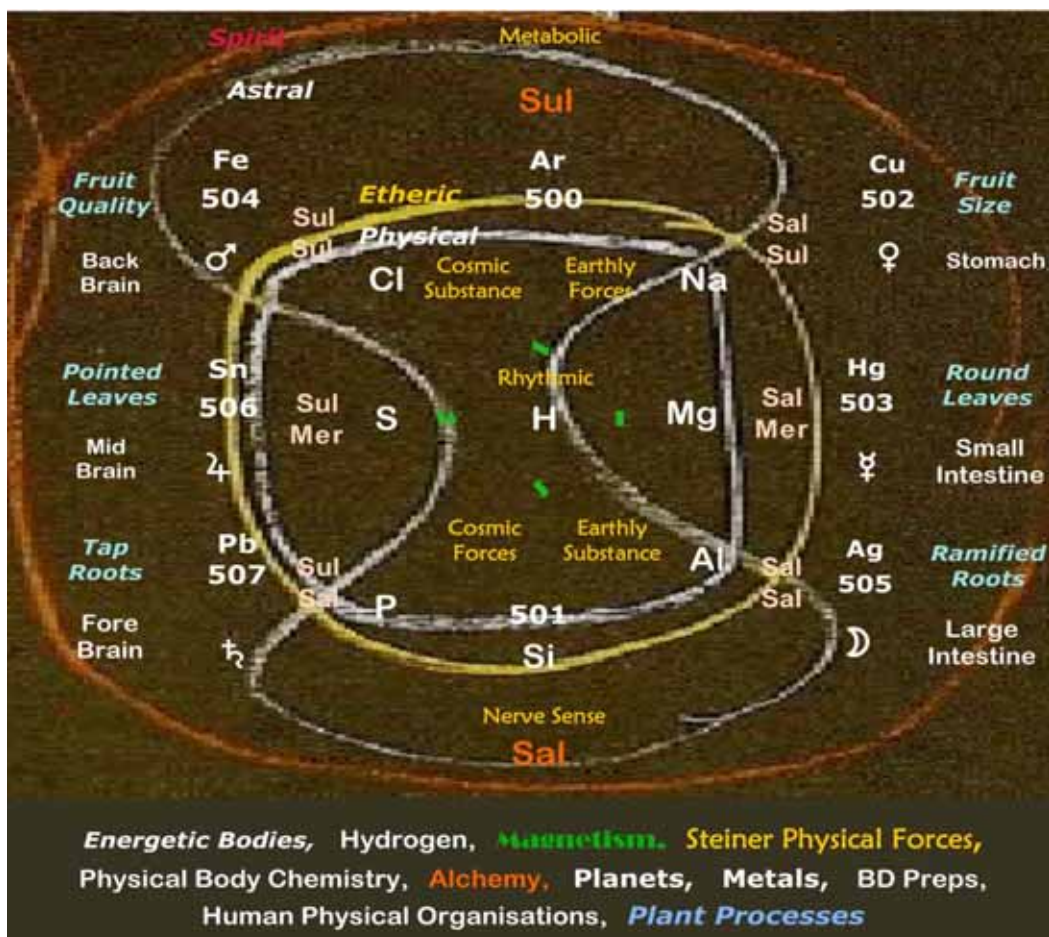
with a predominately contractive quality, While the flowers and fruit of the plant, being the reproductive parts of the plant, are reflected in the Human Metabolism, as a expansive influence.

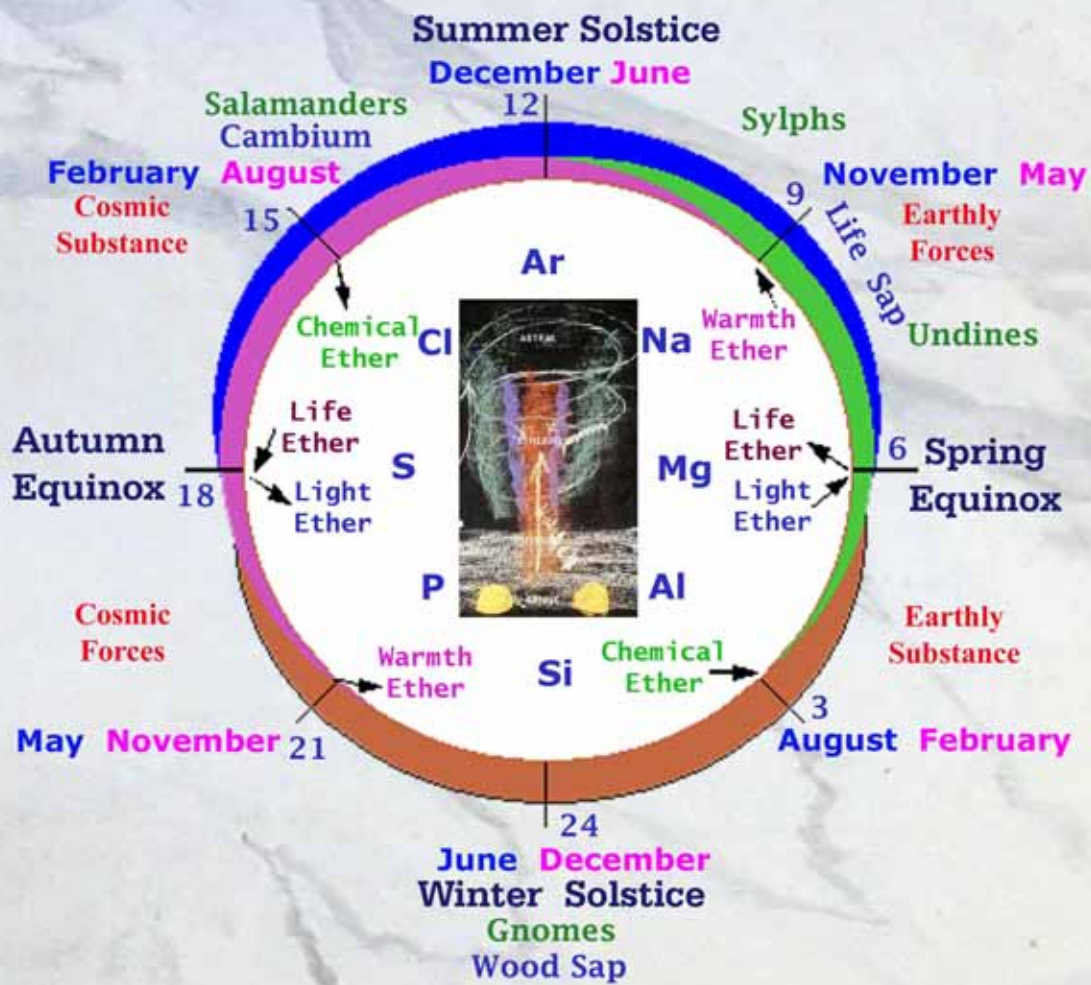
When we put lectures 2 and 6 together, we can see RS begins with the **Direct Forces** coming from above, which has two sides. There are forces coming from the **Outer planets 2**, (those beyond the Sun) which have a inward moving contractive Catabolic action ,and the **Inner planets 1**, (those between the Sun and the Earth) referred to as Earthly Force activities, with their expansive Anabolic quality. Add these, to the two types of **Indirect planets**, and we have a fourfold form. When they work within the Physical, the **Direct Inner 1** are called the **Earthly Forces**, **The Outer Planets 2** are **Cosmic Substance**, **working from Above**.

The Indirect activities are, **Inner planets 2** called **Earthly Substance**, and **Outer Planets 1** are the **Cosmic Forces**, **working from Below**. Thus we have a expansive and a contractive influence in both the Inward and the Outward activities. We can also say there is one Incarnating and one Excarinating process in the Direct and Indirect streams of activity.

So while we can find a dominant expansive process in the Metabolism, we can also find a contractive growth process, working with it. Similarly within the Nerve Sense system, it has a dominant contractive influence, the Spirit based Cosmic forces, with a secondary expansive influence, coming from the Physical Earthly Substance processes. This expansive influence has 'migrated' from the metabolism, into the head, through evolution, and supports the 'nourishment' of the brain substance. Too much of this and we have migraines.

We got to the lemniscate stage 2, with RS Ag Course order, and then there is a stage 3 , **Enfolded Manifestation**.





| | |
|----------------|---------------------------|
| May | Southern Hemisphere |
| November | Northern Hemisphere |
| Spring Equinox | Seasons |
| Cosmic Forces | Ag. Course lecture 2 & 8 |
| Light Ether | The Ethers Cycle |
| Wood Sap | Cosmic Workings Lecture 5 |
| Gnomes | Man as Symphony Lecture 7 |
| Si | Alchemical Chemistry |

THE SEASONAL COMPLEX
North

(c) The Garuda Trust 2018

This is the story told in the 'Sap Stories'. 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', and follow the Chemical Elements through RS medical lectures, and onto the Sap Stories. As part of the Alchemical Chemistry story, my 'Rosetta Stone' picture arises, which connects the Physical Formative forces (PFF) to the Chemical Elements, and to the Seasons. (see pg 6 bottom 3 images. These pictures are set to Magnetic North) **Stage 3 is an image of "What is"**

To **set this picture into motion**, where Life exists, we come to **the cycle of the year**. The movement between all these parts, occurs throughout the seasons of the year. Given this is an endless cycle it is difficult picking a particular place to start.

RS usually starts at mid summer, where the plants have reached their peak of outward expression, with the setting of the fruit. By this time two streams of activity can be noticed. All of the growth the plant has made through the season, culminates in the 'ideal plant form'. This begins to wilt and returns to the Earth as a female 'Ash', which the Gnomes gather up, along with existing Earth activities, to form Earthly Substance .

A second 'warmth' stream coming from the Stars, (Cosmic Forces) joins the seed at pollination, through the **seed chaos** phase, and also falls to the Earth, as a male stream of activity. This inward process pushes right through the Autumn, causing ripening and lifting nutritive quality. Then through leaf fall and on into the 'crystallisation period' just after mid winter, all aided by the sandiness of the soil.

Both of these activities from Above, are received by the Gnomes of the Earth. They are beings of the Life Ether, and have a dual role of bringing the World Silica Force influences coming from the Stars, into the Earth due to their love for 'Cosmic thoughts'; and facilitating the Lime based 'ideal plant', Earthly Substance processes, by binding them with the minerals of the Earth, in the act of **Fructification** during the winter. They relish the Spirit Cosmic Forces, and revile the Physical Earthly Substance, they must endure. They are the beings of the crystallisation, the place where the Cosmic contraction reaches its peak at mid winter. In their hatred and repelling of the Earth, they create the upward forces we can see expressed strongly through the Spring time, by Clay and Boron. This makes the Life Ether more complex than the other Ethers, in that it has qualities of both the Spirit Cosmic Forces and the Physical Earthly Substance processes. It is not simply a 'Physical Ether'. It is nice to have the Gnomes to facilitate these two opposing processes interaction. This 'Life Ether' period runs from the Autumn equinox through till the Spring Equinox.

A week after RS told this story, he calls the Gnomes activity the 'Wood Sap' phase. This is where the Earthly processes, made up of the crystallised Cosmic Forces and Earthly Substance, from the past season, work upwards, with the help of Boron and Clay (AlSi), into the burst of spring growth. This Mid Winter to Spring period is the 'Earthly Substance' stage of the year, where the humus formation is completed and the Wood Sap, that becomes the core of the tree, is carried upwards.

Sprays used at this time, to enhance this process, caused the plants to feel energised, however the plants appear like a cohesive energetic mass of growth, jumping out to meet us.



[The text at the bottom of the above blackboard drawing summarizes the three plant processes and reads:
 Wood-sap: Earth; Chemical
 Living-sap: Surroundings of the earth: The Living
 Cambium: Stars: Spirit]

Cosmic Workings in Earth and Man - Lecture 5
 31 October 1923 - RS

This burst of upward Life Ether — coming from last season - has to be met by the Life Sap process, coming from the present seasons' Moisture and Light. This 'Life Sap' process is in itself a combination of the workings of the Chemical Ether based Undines, and Light Ether based Sylphs or in the words of the Agriculture Course, The Earthly Forces and Cosmic Substance interact. This is the realm of Equisetum and Humus. The Astral stimulates the Etheric into action, within the metabolic sphere, creating the leaves with their substance creating photosynthesis and flowers. The Undines / Chemical Ether begin a month or so before Spring , showing as the first burst of leaf growth, while the Light Ether / Sylphs processes gain strength from the Spring Equinox, when the general flowering begins. In the language of the Physical Formative Processes, The Life Sap phase is an interplay of the Atmospheric Etheric processes RS calls the Earthly Forces and the Atmospheric Astral Light processes called the Cosmic Substance process. In this Etheric phase from around the Spring Equinox, for the next 6 weeks or so, the Earthly Forces dominate. The chemical processes of Magnesium, are seen in its centre role in photosynthesis, within the leaves. (The 'Life Sap' should not be confused with the 'Life Ether'. They are very different things. Life Ether is a Spirit Physical interaction phenomena, while the Life Sap is a Etheric Astral interaction phenomena. I suspect this 'problem' is the basis of GW Schmidt's 1971 'mistake'.)

Once we move into the Light processes more strongly , a month or so after Spring the Potassium processes come more into play. In RS's picture he draws the Life Sap process as a swirling vortex. It is our task to make this a strong vortex to 'suck in ' the warmth processes.

The 'light' spray used then saw the raw growth forces of the Wood Sap become more refined and 'individualised', while the growth seems to stretch upwards with the increased Light forces.

RS talks of how this seasons Atmospheric Life Sap processes have to take over from the Earthly Wood Sap processes to produce the leaves and flowers, or else the plant would run out of steam and die. While the Physical Earth Substance part of the Wood Sap runs out, around the spring equinox, the Cosmic Forces Spirit processes, coming from the previous season. are intent on setting the seed for future existence, carries on. It hitches itself to the atmospheric processes, when the inward Light based Cosmic Substance processes begin.

After mid summer we come into the 'Cosmic Substance' period of the year. About a month or so before mid Summer, the Warmth Ether carried by the Salamanders begins to work more forcefully. RS suggests the warmth processes do not have to develop. They develop out of the intensity of the Life Sap vortex. If the Earthly Forces and the Astral side of the Cosmic Substance processes work together properly—supported by Equisetum and Potassium processes— and some hot weather, then the Warmth Ether / Salamanders carrying the Spirit inspired Star forces, will work inward. **These summer warmth processes take two paths.** A male one via the seed, and the other is a female process where the warmth works upon the general growth processes of the plant. RS called this process the Cambium processes. It works inward from the Stars, through the warmth to fill the plants , animals and us with Cosmic Substance. RS says "the fat pig is a sack of Cosmic Substance". These growth processes form the 'ideal plant form'. This inward process pushes the sap, through the Cambium layer, back into the soil as root exudates. This stream of activity also drives the overall plant processes through ripening and back into the Earth, with the help of Silica Sand in the soil. This goes all the way towards the crystallisation stage of mid winter. This 'Cambium' phase can be seen to work with the contractive Chlorine process, from mid summer through till a few weeks before the Autumn equinox. This is the time orchardists usually applied Potassium Chloride or Calcium Chloride during the fruit ripening periods, for size and quality.

The '**Seed Chaos' stream** is the period when the Plant Archetypal forces are received by Saturn 1, from the Stars, during pollination. RS sees this as the male 'fertilising' side of fertility. This is when the new plant is open to new cosmic influences, regarding species development. This is then carried by the seed through into the winter processes.

The 'warmth' spray, made to enhance the 'cambium' process , caused the plants to take on a more compressed and strong gesture. They stand strongly in their own space and begin to draw in substance and bulk up. This is the time of the Cosmic Nutrition stream, were nutritional quality is 'cooked' within the plant.

A month or so after mid Summer the Etheric / Chemical Ether processes weaken, which allows the Light and Warmth processes of the Cosmic Substance to dominate in the Ripening period. Sulphur becomes the dominate element , seen in its role in the protein synthesis of the seed development , now. The leaves drop and their lactic acids need incorporating into the soil, from the Equinox period.

At the Autumn equinox the Light processes recede and a month or so later the Warmth processes do the same. From the Autumn equinox the Gnomes again greedily take up the Light and Warmth processes coming from above, crystallising the Cosmic Substance. The

Gnomes refine the Cosmic Substance Atmospheric warmth into the 'Earthly warmth' of the Cosmic Forces, while binding the 'ideal plant' and the Earthly processes to the soil with the help of the available Lime. This is achieved with the help of Phosphorus and Nitrogen as the biological processes work in the soil, to form the clay / humus complex.

After mid winter the cycle upwards begins again.

It is upon this framework that we can discuss the particular combination of preparations and other substances we might use to help these processes along.

This story leaves me with a new appreciation of how we are farming the 'Above'. It is the Atmosphere, and then the Cosmos, that creates our plants and their products. It is as if the plant has two stomachs, the soil and the atmosphere. These are free things, available for us to access anywhere.

Cosmic Spirit to World Spirit

There is a question of what is the relationship of the Spirit activity coming from above as 'Cambium' and the Spirit activity in the centre of the Earth.

Paracelsus and others have said 'every species finds its source from a Star'..... I take this to mean that stars beam a constant force, which we call **Cosmic Spirit** archetypal forces. Each star has its own particular constant vibe, which when received by the Earth can provide a 'resonating pole', RS calls 'Cosmic Forces', for the plant form to collect around. On its way to Earth though, this force comes through the planetary spheres, where it picks up the planetary / World Astral impulses, which provides the varieties within the species, and then through the Atmosphere, where it picks up World Etheric impulses, which provides the phenotype differences within the varieties, and then into the Earth. All of this is reflected back outwards as 'Life processes' that manifest as Life forms, with their Internal Body activities. When the Earth receives the Plant Spirit archetypal energies - directly, and via the Inward Cambium / Cosmic Substance and Forces processes, working both through root exudates and seasonally - through the Autumn and up to the crystallisation period etc, these all accumulate in the Earth. Given the Plant does not hold these Spirit forces inside themselves, they can accumulate in the Earth, as **The Group Ego of the Plants** at the centre of the Earth as RS says, or in the Silica minerals of the Earth, below the plants as indicated in the drawing in lecture 8. I suspect he is indicating the same thing. I suspect the 'gold balls' in the Earth in the 'Sap' picture is also indicating the Plant Egoic forces being in the Earth. It is a nice image to be able to say the Gnomes do this for the plants...however I am also happy for it to be a 'cosmic chemical process' caused by the 'Solar Hypothesis where the Earths path crosses the Suns path in the sky ala Piccardi / Kolisko.

We need to also to take note of the building of Egoic forces in the soil via those unused by the cow etc, arriving through the manure. These are probably of a different specific quality - or let us say a different shade of purple - to the Cosmic Star forces, but nevertheless they add to the 'purple pool' of collective Spirit / Egoic activities working in the Earth.

You may find it useful to read the 'Layers of the Story' before reading the 'Preparations for the Seasonal Complex' chapter. It broadens the above chapter with far more detail.