

## Crystallisation — Is it a Spring event ?

I have had lingering questions about the crystallisation story in lecture 2 of GA 327 ( Agriculture ), since I gave it a shake 20 years ago or so. I did not ‘finish the thought’, by looking at what G Piccardi’s findings really meant for RS’s crystallisation story. I am again interested in it, due to the suggestion that as part of the crystallisation process **‘there are forces released that are good for plant growth’**. I would like to know what they are, and how I might use them.

This suggestion is embedded in a larger story of the **Galaxy sourced Cosmic Forces** cycle. We had several pages in the lecture on how the Cosmic Forces and its companions, work in the earth and in plant growth, and now more specifically they are active with ‘crystallisation’, and next comes the ‘Seed Chaos’ story. These stories are part of the annual Seasonal Cycle story ( 1 ) RS gives us. This has to be the context within which we approach an answer. We will talk more about this later.

In the crystallisation story RS makes very specific statements about the Cosmic Forces role, which in the light of further scientific research, appear to need to be questioned. His story seems based on Lili Kolisks’ crystallisation experiments, which she started in 1920. However, some of RS’s conclusions are not found in Lili’s ‘Agriculture of Tomorrow’. ( pgs 33 - 50 ) His suggestions make a great story , and appear to be widely accepted by BDers, until one comes across the work of Giorgio Piccardi, a Italian scientist who carried out extensive trials very similar to Lili’s, in the 1950 – 60s. He came up with similar, yet different results on several counts.

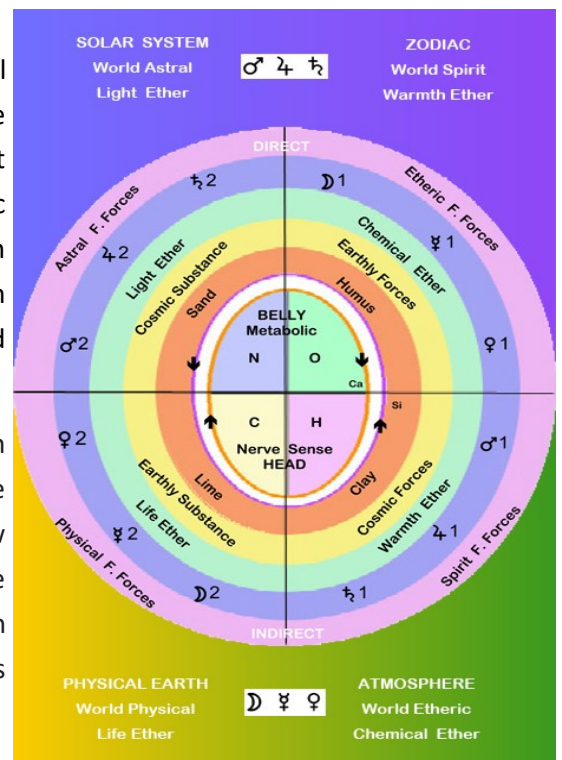
Lets gather the data

**Exhibit A—A google translation of the german text available at the RS archive.** I used this translation to avoid any biases an Anthroposophical translator may have. These paragraphs are on pgs 32 and 33 in the 1993 edition. (1)

These paragraphs are part of a broader discussion on the ‘Physical Formative Forces’, where he has talked of how the two parts of the Silica cycle and the two parts of the Calcium cycle influence plant growth, and then after this passage, he talks of how the Cosmic Forces bind into the seed via the seed chaos event at pollination. In this context ‘Cosmic Forces’ are not a general influence from above, they are specifically Spirit Forces coming from Stars, and influencing plants, most notably as vertical upright growth.

“Today, most people are aware that there is a difference between the air above and below the Earth, but they don't notice that there is also a difference in temperature. They know that the air below the surface contains more carbon dioxide and the air above it more oxygen, but again, they don't know the reason. The reason lies in the fact that, as soon as the air is absorbed by the Earth, it is permeated by a subtle life force.

The same is true for warmth and air; they acquire a certain vitality



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as soon as they are absorbed by the Earth. **The opposite is true for water and the solid element Earth itself.** They become even **more lifeless inside the Earth** than outside. They lose some of their external vitality. But it is precisely in this process that **they open themselves to absorb the most distant cosmic forces.**

The mineral substances must **detach themselves from the forces that act immediately above the Earth's surface** in order to be exposed to the most distant cosmic forces. In our cosmic age, this is easiest for them – they can most easily detach themselves from the immediate surroundings of the Earth and come under the influence of the most distant cosmic forces in the Earth's interior – in the period between **January 15th and February 15th**, that is, in Winter.

The time will come when such things will be recognized as precise signs. **This is the season in which the strongest formative forces of crystallization**, the strongest forces of shaping, can develop for the mineral substances in the Earth's interior. It is **the middle of winter**. The Earth's interior is then **least dependent on itself**—on its own mineral masses; it comes under the influence of **the crystal-forming forces that operate in the vastness of the cosmos.**

This, then, is the situation. Toward the end of January, the Earth's mineral substances feel the greatest desire to become crystalline, and the deeper we penetrate into the Earth, the stronger this desire becomes to become purely crystalline within the "house of nature." With regard to **plant growth**, what happens to the minerals at this time is **largely irrelevant** or neutral. That is to say, **the plants are largely left to their own devices** at this time; they are **least exposed to the mineral substances**. On the other hand, they are of utmost importance for a certain period before and after this period – and especially before, when the minerals are, so to speak, on the verge of transitioning into crystalline form; **they radiate those forces which are particularly important for plant growth.**

So we can say that around **November/December**, there is a time when **the resources present beneath the Earth's surface** are particularly effective for plant growth. The practical question is: "How can we specifically utilize this for plant growth?" The time will come when we realize how important it is to use these facts to guide plant growth in a targeted way. I'd like to point out right away: If the soil doesn't naturally draw the forces acting in winter upwards, it's advisable to mix in some **clay**. (I'll specify the correct amount later.) This prepares the soil **to transport the resources present in the Earth's interior upwards** and make them available for plant growth. **I'm referring to the crystallization forces** that we can already observe when looking at crystallizing snow. (However, the crystallization force increases with increasing depth within the Earth.) **This crystallization force must therefore be brought upwards at a time when it hasn't yet reached its peak** – which it will only reach in January or February."

**There are few things to extract from this.**

**Crystallisation opens the minerals to absorb the most distant cosmic forces.**

**Crystallisation occurs between January 15th and February 15th**, that is, in Winter

**RS says Crystallisation is caused by Cosmic Forces coming from the most distant stars...**

**That crystallisation is a winter phenomena**

**Cosmic forces and crystallisation are the same forces**

**Inferred that Cosmic Forces are influenced by crystallisation**

**Cosmic Forces are released from the Earth after crystallisation for the benefit of plants.**

**The positive growth forces are collected by the making of Horn Manure prep (500)' Plants are not influenced by crystallisation..... So does 500 pick it up?**

Most of these ideas have been widely accepted as facts by BD practitioners.

### What did Lili Kolisko find.

In chapter 5 of Agriculture of Tomorrow (p33) Lili provides a 20 page summary of trials she carried out from 1920.

“Between January and February we note that the crystallisation increases in weight” (p45)

“We see the quantity is considerably smaller in July August” (p47)

This difference in weight “proves that there is an immense difference between the forces of crystallisation during summer and winter” (p48)

We must understand these two forces, the force of crystallisation and the force of vegetation.” The force of vegetation is strongest during June July August, at the time the forces of crystallisation are at their weakest. (p49)

Conjunctions and Oppositions of the various planets inhibit the crystallisation process of ‘their’ metal. (p50).

We can see from her research why RS was so firm in his assumptions and why BDeers follow along. We must note that Lili only did her trials, in the northern hemisphere, and in the open air, so her statements are influenced by this limitation.

### What did Piccardi find? : The Chemical Basis of Medical Climatology” ( ISBN 0 398 07049 0 ).

Piccardi did similar, however different crystallisation experiments , which we will discuss later.

He does not reference Lili’s work at all.

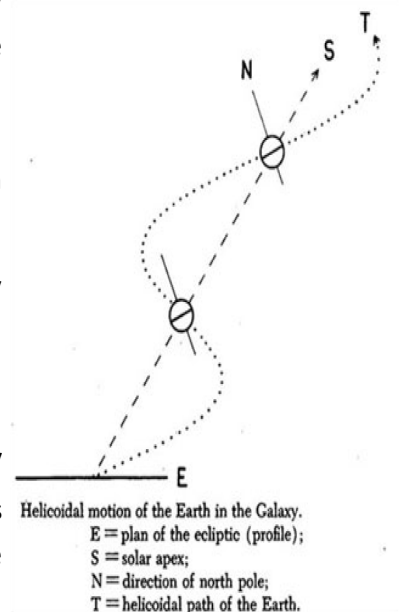
He cites Bortels studies from 1949 which found that precipitation is influenced by placing a metal shield over half of the experiment, thus precipitation can be influenced by changes in the electro magnetic field. (p10,15)

GP finds a copper sheet reduces crystallisation weights (p45)

“We can safely assume that exterior forces fall downward upon the Earth from Above” (p49)

GP concludes crystallisation is a Sun Earth phenomena that can be interfered with by a copper sheet, thus the forces are streaming from above and have EM components.

“Piccardi was tracking the Earth's movement through space relative to the solar wind and the galaxy. His famous "Piccardi Chemical Tests" discovered a distinct minimum/maximum fluctuation around the **Spring Equinox (March)**. This is known as the "**March Effect.**" Piccardi attributed this to the Earth crossing the equatorial plane of the sun or intersecting cosmic force fields at a specific point in its orbital trajectory, rather than a reflection of local winter terrestrial forces.” - google



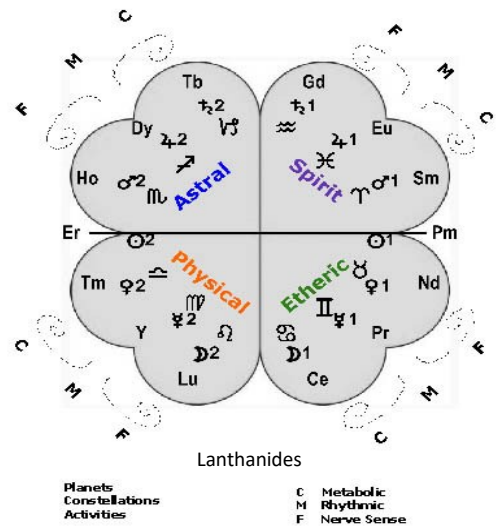
### So Piccardi challenges several of RS assertions.

**Not seasonal, Not Jan Feb, Not caused by the far distant Cosmic Forces.**

### It is NOT seasonal based in winter . It happens in March around the Spring Equinox

The Earth going through the Sun's path is a Solar System event ,and is akin to the Moon going through Sun's path, which we call the Nodes. Maria Thun found these days were negative for plant growth, and usually these are the BD growers 'days off'. For Humans the nodes indicate destiny events. The south node shows past Life activities that you bring to your present Life. While the North Node shows the present destiny choices . There is a freedom here, it is not fated, you chose what to do with this opportunity .

As a corollary / reflection of something similar, about crossing the horizontal plane of a gyroscope... We can see the horizontal plane on Saturn with its rings. On average they are only 10 meters thick. So a very fine layer in astronomical terms. In chemistry there is an interesting tale told by Jan Scholton, that in the Lanthanides the only element he could not find a use for was Pm **Promethium**. On the circular Periodic Table this element sits on the Eastern horizon point. So on the horizontal plane. In the proving of the Lanthanides I found Pm to be a reconsideration point, 'were have we come from and where do we want to go now' sort of spot. The opposite spot on the circle Er Europium, has a similar dilemma, however more concerned with practical manifesting issues. The prototype has been proven, but is it possible to really make this a success'? In the energetic gyroscopes of creation, the horizontal plane collects substance from the two energetic hemispheres above and below it. It is a space between these two organised semi spheres. So here is the Earth is experiencing peak crystallisation processes as it passes through the Sun's horizontal plane in March. The mineral Earth stands most open to the rest of the Cosmos, for a short time.



These are all 'decision' making points. **Points of Chaos.**

This is a fairly major adjustment for some BDerS. For the northern hemisphere there is an adjustment from seeing crystallisation as an **early winter event to a spring event**. Several 'old' cultures see the Spring Equinox as the beginning of their year. In the southern hemisphere, as we have to explore how crystallisation manifests when it is an early Autumn event.

### Both hemispheres

It was found the crystallisation peak occurred at the same time in both hemispheres. (pg 103) So NOT seasonal.

### Why were the dates of crystallisation different?

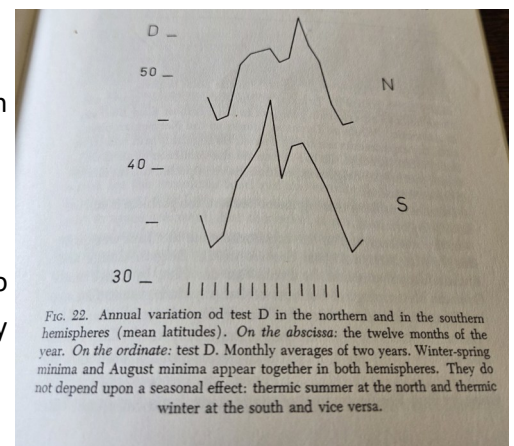
They used different methods of testing. Lili did 'open air' trials, while Giorgio did closed test tube trials, which eliminated the atmospheric influences. They also used different salt solutions.

### Why Kolisko Found a Peak in January and February — google says

"When timing how fast an open solution evaporates, the primary driver is the **vapor pressure deficit** (the difference between the moisture in the air and how much moisture the air can hold).

**The Winter Effect:** In the deep Northern Hemisphere winter (January and February), cold outdoor air holds almost no moisture. When this air enters a building and is artificially heated, the indoor **relative humidity drops to its lowest levels of the year**.

**Faster Timing:** Dry air acts like a sponge, accelerating the evaporation process. Solutions dry out and crystallise at their maximum velocity during these months, matching the exact timeframe Kolisko recorded on pages 33–50 of her book.



**Why Piccardi Found a Peak in March**

Because Piccardi's bismuth tests took place entirely underwater, ambient indoor air humidity and evaporation speeds had zero impact on his results.

**The Equinox Effect:** Piccardi's March anomaly aligns with the **Spring Equinox**. During March, the Earth's orientation relative to the solar wind maximizes geomagnetic disturbances (known in geophysics as the *Russell-McPherron effect*).

**Colloidal Interruption:** These low-frequency electromagnetic fluctuations subtly alter the hydrogen bonds in liquid water, changing the surface charge of colloidal particles. This directly alters the sedimentation speed in March, completely independent of how dry the laboratory air is." - google

**What are the 'Cosmic Forces' ?**

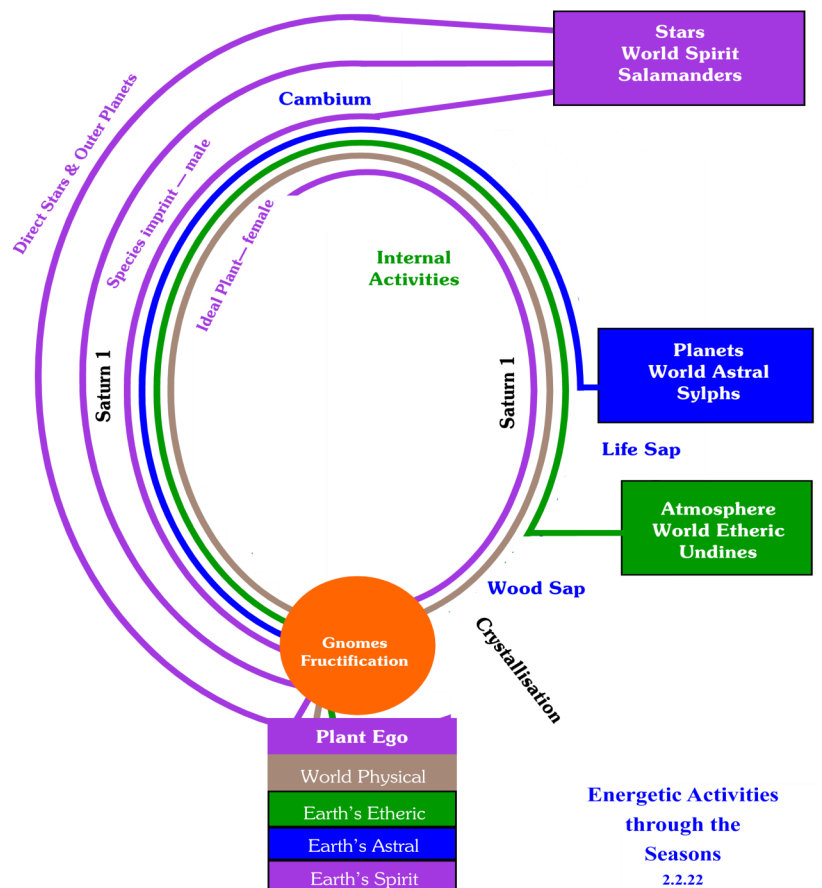
The Cosmic Forces are the central theme of this section of the lecture. RS is describing them as the distant stars forces that brings the species impulse into nature.

These forces are real Star forces. As they move through the Solar System they are carried in this Astral Planetary sphere by the Primary Outer Planets. More specifically the species part of the Cosmic Forces is carried by Saturn One. Saturn One hears the annual species message from the Stars , and holds it to its heart and carries it through the journey of coming into manifestation, and then living the Life, to hand the Directors ball on at the next pollination event, to the next incoming Star message. Much happens along the way and the Cosmic Forces are a specific 'directive' character throughout.

As the Star Forces move through the Atmosphere they are carried by the Warmth Ether, and as they move into the Physical bodies of Life, the Star Forces are called Cosmic Forces. ( see pg 1 pic )

We can go one step further - from the Medical lectures - and say in the 'Agriculture' story, they represent the working of both the Spirit and the Astral activities in the Nerve Sense System. The Spirit being the dominant partner. In the Metabolic System we have Cosmic Substance representing the activity of the Astral and the Spirit, with the Astral being the dominant partner.

In the pages, before the crystallisation story, we are told how the The Cosmic Forces are carried directly into the soil via the Cosmic Substance processes, helped by Silica Sand. Through it all, it is clay that allows these forces to rise upwards again. We see the story extended in the Seed Chaos story, just after the crystallisation story, where the Cosmic Forces are winding into the fertilised seed, 'keeping a dandelion and dandelion'. They then travel into the ground with the seed through winter, finding a peak experience at the mid winter Fructification , where these 'male ' Cosmic Forces are wound



together with the female Ideal Plant, - the plants' force residue from the previous growing season - along with connecting to the Earths energetic bodies, to form the upward moving Wood Sap. By the time we have gotten to the Spring Equinox, the Wood Sap is coming to its end. The water and light based Life Sap processes have taken over and hopefully have now hitched a ride on these silica based Cosmic Forces, that are pushing upwards aiming for its next seeding opportunity. If the Cosmic forces are not pushing upwards, then rotting fungus occurs, as described in the 6th lecture due to the Earthly Substance processes dominating, from below. Clay is their fuel upwards.

Having lived on both a deep volcanic ash soil (sand) and on heavy clay soils, I have had the opportunity to add clay to the sand and sand to the clay, and I support RS statements about their control over the Silica processes.

**The crystallisation event opens to Earth to the Cosmic Forces.**

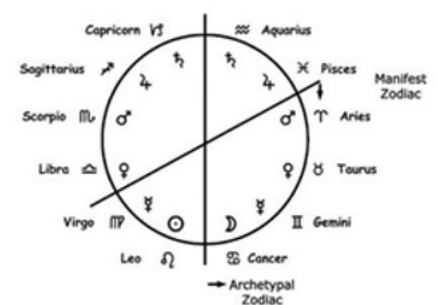
“The same is true for warmth and air; they acquire a certain vitality as soon as they are absorbed by the Earth. **The opposite is true for water and the solid element Earth itself.** They become even **more lifeless inside the Earth** than outside. They lose some of their external vitality. But it is precisely in this process that **they open themselves to absorb the most distant cosmic forces.**

The mineral substances must **detach themselves from the forces that act immediately above the Earth's surface surface ( in the metabolism, Earthly Forces and Cosmic Substances )** in order to be exposed to the most distant cosmic forces.”

Looking at various RS seasonal stories, there is an image of what occurs with our bodies between Summer and Winter. The Earth has a Inbreathing and an Outbreathing cycle. In the Winter inbreathing, we become more Self sufficient, while the Summer outbreathing experience is more about being embedded in the Universal Energy field, and giving ourselves to the outer worlds influences. I take from this quote that by being more self orientated, we are removing all the worldly clutter and thus more open to the messages from the Stars, the distant Cosmic Forces. This is a kind of ‘spiritual retreat’.

The mineral world is experiencing crystallisation as a moment of Chaos, “in order to be exposed to the most distant cosmic forces.” This same process is described in the following Seed Chaos story. The Earth receives its Cosmic message during Crystallisation at the Spring Equinox of the Northern Hemisphere.

This is the Ascendant point in Astrology charts. The starting of the House system, that tells us where events will appear physically. This equinox's movement through the Zodiac, is the basic tracking device of Human evolution. **Precession of the Equinox** sits at the core of RS evolutionary story, and is widely accepted in general understanding of history. Even the hardest of scientist appears to accept it as a real forming influence upon humanity.



RS gives this ‘coming into itself, so as to receive its next divine guidance, away from the madding crowd’ image as the Winter event. This appears true for the Plant kingdom and Humans, however for the mineral kingdom it is a Earth Spring event. What is the significance of this? Given RS's strong thoughts on the seasons and their implications, I do not feel I can take this question on at this time. A more educated Anthroposophist may like to make some suggestions.

**Is the Cosmic Force journey interrupted by crystallisation?**

No I do think so, it is well on its way, doing its thing, and RS says the plants have a neutral response to it. I see no

evidence that there is a blocking of the Spring upward movement, due to the Cosmic Forces being hijacked.

However the various texts lead us down a couple of different suggestions.

### Google

“This prepares the soil **to transport the resources present in the Earth's interior upwards** and make them available for plant growth. I'm referring to the **crystallization forces** that we can already observe when looking at crystallizing snow. (However, the crystallization force increases with increasing depth within the Earth.) **This crystallization force must therefore be brought upwards at a time when it hasn't yet reached its peak** – which it will only reach in January or February.” goggle

GA This suggest that the Cosmic Forces are the crystallising force which are on their way from the winter fructification and may need strengthening before they take a ‘slow down’ during crystallisation.

### 1938

“That in the case of a soil which does not of itself promote the required upward movement of forces which ought to work upwards in the Winter period, it is well to add clay in a proper proportion. (I shall indicate this proportion later on). In this way, we enable **the soil to carry those forces, upwards to make it effective in the realm of plant growth above the Earth; before the forces of the minerals have reached their maximum effects for themselves**, which will not be until January or February period. (These forces show themselves outwardly—for those who can read their story—in snow crystals.) It may be noted that the power of these forces becomes stronger and stronger the deeper we go into the interior of the Earth.” 1938 Ag Course

GA It can be inferred that these are Cosmic Forces that need a push prior to being effected by the crystallisation process.

### 1976

“We thereby prepare the soil to carry upward what, to begin with, is inside the Earth and make it effective for the growth of plants. I mean, the crystalline forces which we observe already when we look out over the crystallising snow. (The force of crystallisation, however, grows stronger and more intense the farther we go into the interior of the Earth). **This crystallising force must therefore be carried upward at a time when it has not yet reached its culminating point**—which it will only attain in January or February.” 1976 edition

GA This clearly ties the Cosmic Forces activity to the crystallising force, as being the same thing. Thus suggesting crystallisation will be effecting the Cosmic Forces.

### 1993

“**With the clay we prepare the soil to conduct the crystalline force upward, for the plant growth above the Earth.** This force of crystallisation, which is already apparent in the crystallising snow, reaches its peak in January or February, and becomes stronger and more intense the further down into the Earth one goes” 1993 edition

GA Again the crystallising force is identified as being the same as the Cosmic Forces.

### 2024

**In this way one makes the ground ready to bring up, what is to begin with, within the soil, above (*below*) the Earth surface, and make it effective for plant growth.** This can already be observed in the crystalline forces that one sees in

snow crystals, but this crystallising force becomes stronger the further one goes into the interior of the Earth, **and it has not yet reached its culminating point** ( this will only be in January or February.) 2024 edition

GA Again we are led to the Cosmic Forces being the crystallising force.  
Hence why this is the common BD understanding.

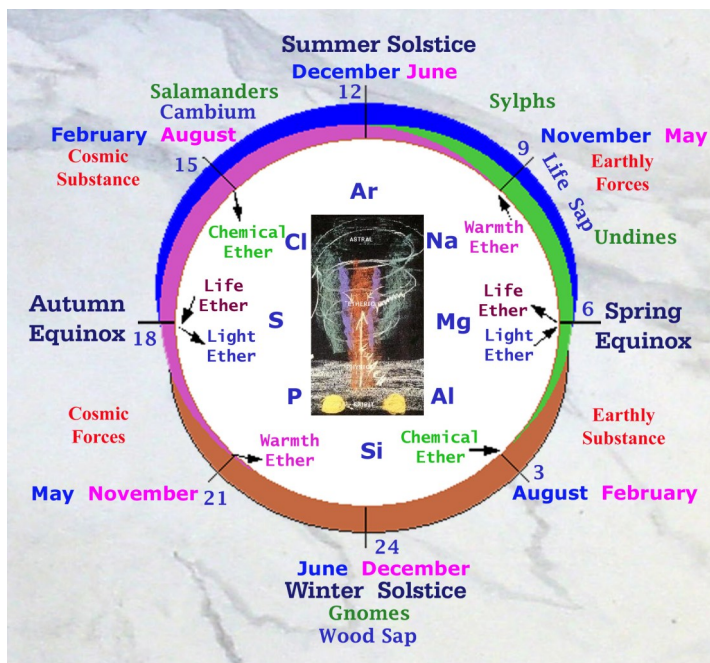
Several things arise for me from this.

### Are the Cosmic Forces the crystallising force ?

If we take Piccardi seriously, as RS suggests we do take scientific ‘truth’ seriously, then the answer is NO the **Cosmic Forces are NOT the driving force** in crystallisation. It is a process driven by the Earth moving across the Sun's path through the Galaxy. These are not forces coming from the far distant stars. **Yes the Earth can be absorbing more Cosmic Forces for itself at this time**, but the Cosmic Forces are not driving this Earth event. Their energetic participation in the event is still relevant.

Looking at how RS's describes the Cosmic Forces actions in other places, they are doing the same job here. There is a Slamming of the Galactic contractive forces imprint into Matter. Hydrogen is stamping its mark on Carbon. I suspect RS would keep this Cosmic Forces energetic influence upon the Earth's experience of crystallisation. The Earth is opened to them, by an electro magnetic phenomena, so they are active players but not the cause.

The Cosmic Forces have their own journey through the seasons. According to the overall Nature Story, their activity in plants, reaches a peak connection with the Earth at the Winter Fructification experience, during the Winter Solstice, and moves upwards as a complex of forces the Gnomes brew up, as Wood Sap. They are well on their way by the time they reach Spring Equinox. Which we note is a Earth Mineral experience that the plants are not effected by.



The Seasonal Complex - Manifest World

### Does Crystallisation effect the Cosmic Forces?

There is this image amongst BDers, of ‘the Earth drawing in the Cosmic Forces and then after crystallisation they are released again.’ This appears to be an assumption based on ‘the good forces being released before and after crystallisation’ and the ‘need to push the Cosmic Forces / crystallisation forces with clay.’

An assumption that probably should not be made.

These forces would be enhanced Cosmic Forces moving upward into growth. This works well when it is a Winter event. As a Spring event, we do see an upward surge of spring impetus as activity bursts above the surface, sending many plants off into flowering, however there has already been 3 months of activity of the plants and insects in the soil. Are these those released Cosmic Forces? What about the Southern hemisphere.

As a early Autumn experience we do not see a return to upward growth. Does this show up as a increased 'ripening' influence?

We do have to consider I“ With regard to **plant growth**, what happens to the minerals at this time is **largely irrelevant** or neutral. That is to say, the plants are largely left to their own devices at this time; they are **least exposed to the mineral substances**. “

This suggests that the Cosmic Force activity on and within plants is unaffected by the Earth's experience, so we can not expect to see any great change in plants behavior. We could ask whether there is any difficulty in the uptake of nutrients during this time? It is however a time of high nutrient demand and there is no evidence that there is a physical blockage of plants ability to get the nutrition they need at this time.

So I suspect this whole belief is inappropriate.

We are presented with the image that the Silica minerals are most effected, and the Carbon based plants are not. This raises a question as to whether the Carbon based manure in 500 can indeed absorb and hold the released Cosmic Forces activity, RS would like to strengthen with a clay application.

### **What is the significance of giving the Cosmic Forces a push upwards before the crystallising point.**

This appears to be an observation of the Cosmic forces having just gone through the Winter Fructification, become Wood Sap and now beginning to move upwards. However it is only a short time before the Cosmic Forces get caught up with crystallisation, thus inhibiting their upward movement. So best to give it a push after mid winter and before crystallisation in January. There is also the suggestion the upward clay process be encouraged two months before before mid winter.

A March crystallisation takes care of most of this story. The Wood Sap upward push during the winter to spring period is ending before the Spring Equinox. A question can be asked as to **how the spring crystallisation influences the Life Sap** taking over from the Wood Sap? Maybe a clay application at this time will help push the Cosmic Forces through to making this connection with the Life Sap/ the Etheric and Astral processes. Who are now looking to fuel the Cosmic Forces on their future journey to seeding. It is the Etheric and Astral activities that will ripen and size the fruit accompanying the new seed. I observe that this Wood Sap / Life Sap connection occurs more around when the Earths Etheric comes above the soil surface, around the February 5th in the northern hemisphere and August 5th in the South. Growth is bursting forth and I have found a 501 Silica application is very beneficial then.

### **Does Horn Manure capture the forces released just prior to crystallisation?**

We might assume that the beneficial forces RS is talking about are related to the crystallisation event. He is suggesting using clay to strengthen the Cosmic Force, if needs be. So we can suggest that these forces are helping the Silica based Cosmic Force process, in plants. I wonder what upward Silica process is occurring twp months before mid winter? In most climates there is no growth, as everything is contracting into the Earth. Maybe this is relevant to glasshouses.

We are told the plants are not effected by the crystallisation process, so why would we expect the Carbon based manure / 500 to be able to receive and hold these forces.

I have experienced on brassica in particular, that when 500 is used repeatedly , without 501, that a plant will not go off to seed, it will just keep growing leaves. When 501 is applied it will then begin to head. So it seems 500 does not carry the Cosmic Force activity within itself.

A similar argument can be used against the Klocek sects suggestion that 'Cowhorns radiate in World Astral forces into the cow'. If this was the case then 500 would help send plants off the seed, which is not the case.

George Bacchus—an early BD consultant in the 1940s—suggested putting a clay cap on the 500 horns. Peter Bacchus has done this, however he thought it was to keep out the worms, and when the 500 was dug up the clay cap was incorporated in the 500 barrel or thrown away. The clay cap should probably be put aside and used as a separate preparation.

In the southern hemisphere the crystallisation event will be during the making of the Horn Silica, which would have the ability to capture these freed Cosmic Forces. Is southern 501 of a different quality to that coming from the north? Maybe 501 should be put into the Earth a month before spring, in the northern hemisphere?

### **Another view**

Given the crystallisation forces of the minerals does not effect plants, yet there are forces released by the Earth, two months earlier and after, that do help plant growth, then we can assume these forces are of a different nature to the Cosmic Forces. It is possible that the forces being released could be Earth Etheric forces, that are released due to the compressing and hardening forces of the crystallisation and then the release of this tension? These 'freed' Etheric forces can then be used by plants for their benefit. These forces would be more related to the Humus processes and being Etheric in nature, they will be able to be taken up by the cow manure.

RS tells a story ( 2 ) that when a person is physically still for a long time, such as when reading or writing, then Etheric forces that would otherwise be used in physical actions are freed and made available to us to use in 'imaginative thinking'. Are these freed forces of this nature?

### **Are the forces released in November linked to crystallisation?**

We have RS identifying good forces being released in November. He links them to crystallisation, however is this a seasonal release he clairvoyantly perceive, and then associated it as part of crystallisation ?

If it is crystallisation related then this will occur in the late winter in January, in the north and in the southern hemisphere, in January it will be a late summer event. If they are a seasonal phenomena then we are needing to look two months or so before the Winter Solstice, in either hemisphere.

How would this be proven?

### **What is the Southern Hemisphere's Autumn experience of crystallisation.**

If there is a release of some kind of forces 2 months before crystallisation then this would be occurring around early February. ( See pic pg 8 ) Around this time the Earth's Etheric is going under surface again. The plant is now left to rely on the strength of its internal Etheric activity. I see a definite drop in plant vitality around this time. The Light and Warmth activities become a stronger influence. This is a peak time for Powdery mildew to attack grapes. This often a time fo significant plant stress. Not extra Etheric forces.

While the Light and Warmth processes are strong, crystallisation would suggest there are also Physical forces pulling inwards, however these do not effect plant growth. So how do we see them?

The new seasons Cosmic Forces have been binding into seeds from November , helped by the Earth's Spirit coming above the soil surface, and the increase in physical warmth. The incoming Cosmic Forces also work through the 'cambium process' within the growing plant, building up 'the Ideal Plant' stream. All this strengthens in February.

Are the 'good forces' being released from crystallisation helping these processes?

## Conclusion

It is apparent that several of the BD beliefs around this topic need adjusting. **It is not seasonal. The Cosmic Forces are not causing it.** There is no evidence that crystallisation captures, and then releases the Cosmic Forces in Spring or early Autumn. It is still unclear as to what the 'good forces' are, as the '500' capturing forces helped by clay conclusion, is not reflected in the effect of 500.

This story appears to be one of RS's very rare 'mistakes'. No doubt there will be many who just 'disregard Piccardi', and carry on 'believing'. Ah, the luxuries of the faithful.

## Appendix A

Piccardi says:

### The Solar Hypothesis

We know that the sun moves, together with all the bodies which are bound to it, towards the constellation Hercules. Standard apex:  $\alpha = 270^\circ$ ,  $\delta = 30^\circ$  (in equatorial coordinates).

Its motion is uniform and rectilinear; its speed (constant for us): 19-20 Km/sec.

We know too that the Earth turns about the sun at an approximate average speed of 30 km/sec.

From the combination of these two motions, one rectilinear and uniform, the other circular and uniform roughly speaking, a helicoidal trajectory results. This is the helicoidal motion of the Earth in the Galaxy, referred to the neighboring stars (Fig. 19).

From this fact an elementary calculation or a simple graph shows that: 1) during the month of March the Earth moves in its equatorial plane; 2) during the month of September the Earth moves, if not along its axis, then in a direction not too far removed from that of the North Pole; 3) the speed of the Earth's helicoidal displacement varies during the year and passes from a maximum in March (45 Km/sec.) to a minimum in September (24 Km/sec). 4) the Earth is displaced with the Northern hemisphere leading, except during a small part of the month of March. If space were empty, empty of fields of matter and inactive, a consideration of this type would be of no importance. But today we know instead that both matter and fields exist in space. For this reason, the displacement of a body such as the Earth in one direction or another is not inconsequential. Its general physical conditions must vary in the course of a year.

I have tried to give an interpretation of the annual variation of test D. But the variation of test D need not be considered. The hypothesis—that the helicoidal motion of the Earth in the Galaxy brings with it a regularly recurrent modification of the Earth's general physical conditions, with a non-sinusoidal rhythm going from March to March of the next year—can

exist as an idea on its own, independent of the experimental facts which pointed to it.

This is the solar hypothesis.

Considering the motion of the Earth in the Galaxy, it was necessary to determine in what manner the Earth was displaced towards the galactic centre. The standard galactic coordinates of the centre are:  $l = 325^\circ$ ,  $b = 0^\circ$ , the apex of the sun:  $l = 23^\circ$ ,  $b = 22^\circ$ . From this fact it is easily deduced that during the month of March the Earth is directed approximately towards the galactic centre. The angle formed by its speed and the direction of the centre is at a minimum. To continue, during March, and only during March, the Earth is directed approximately, at maximum

speed, towards the galactic centre—that is, along the lines of force of a radial field and perpendicular to the lines of force of a dipolar galactic field. This double condition will not be encountered again throughout the year. The conditions during March are thus quite exceptional. The precise characteristics of the helicoidal orbit of the Earth have been recently calculated by Dr. Quilghini of the Rational Mechanics Institute of the University of Florence. A working model of the motion of the Earth in the Galaxy was displayed in 1958 at the Brussels Planetarium during the World Fair (Figs. 20,21).

The questions still remained about the way this effect would show up seasonally in the different hemispheres.

During the years of 1958 and 1959 a range of research institutes carried out simultaneous crystallisation ( polymerization ) experiments at similar latitudes in the northern and southern hemispheres.

Piccardi says: **The Effect of Latitude and the Dissymmetry of the Northern and Southern Hemispheres**

The fact that the Earth is displaced with the North Pole in a more or less leading position throughout the year, save for a very short period which corresponds with the month of March, should lead to a dissymmetry between the two hemispheres of the Earth and to an effect of latitude. The calculated maximum of dissymmetry occurs in correspondence with the month of September.

**The Pattern of Test D in the Two Hemispheres**

(Test D -This test uses the precipitation of bismuth oxychloride, under a copper sheet.) The solar hypothesis brings up another problem: if the annual minimum of test D depends upon the motion of the Earth in the Galaxy, this minimum should be observed not only in

the northern hemisphere, but also, and at the same time, in the southern hemisphere. The entire Earth should feel the effects of the change in conditions resulting from its helicoidal motion.

Unfortunately, during the Spring of 1958 the chemical test research was interrupted for two months at Leopoldville and had not yet been initiated at Kerguelen. The research was prolonged in these two places up through all of July 1960, that way it was possible to have the data of two complete years.

We can make a resume of the results regarding test D in this manner: Let us distinguish above all the data gathered at northern and southern mean latitudes from those gathered nearest the equator, remembering that Libreville lies less than 1° N and Leopoldville about 4° S from the equator.

a) Test D at Northern and Southern Mean Latitude If we calculate the monthly averages of all the data gathered in Uccle-Brussels and in Florence in 1957, 1958, 1959 and 1960, and all the useful data gathered at Fort Dauphin and Kerguelen and order them by month we obtain two functions of the time of D which have parallel behaviour. Both present the large minimum and the little minimum at the same time. The effect of the helicoidal motion of the Earth seems therefore evident because they are independent of the seasonal effect.

In the North test D maintains itself on higher values and in the South on lesser values. The amplitude of the two functions are almost equal, perhaps the amplitude in the South is wider. The dissymmetry of the Earth depending upon the helicoidal motion seems therefore evident in the case of test D (Fig. 22). The little August minimum divides the time function of D in two parts. In the North the first part (spring-summer) curve, the second part ( autumnal – winter) comes to a sharp point. In the South the inverse happens: the first part comes to a sharp point and the second curves. This is a typical seasonal effect, to place in relation to the height of the Sun on the horizon. We could not hope for more or better. Test D shows one more time the effects of helicoidal motion of the Earth: large annual minimum, small annual minimum and dissymmetry between northern and southern hemispheres. Further, it shows us an ordinary seasonal effect. J FMAMJ J A S OND J FM

It appears from this data that the minimums occur in both hemispheres at the same time and are related to the helicoidal motion of the Earth through the Galaxy.

### **Test D and its Cosmogonical Sense**

The annual variation of test D is of such importance that it is difficult to interpret it as a result of the interaction of weak fields, which are the terrestrial field and the exterior field in which the Earth moves. Until the present it was held that the fields which exist in space are weak, but this belief is not firm. A much more profound and general cause must come into play. Prof. Giau has considered the solar hypothesis from a point of view of relativistic cosmology and is able to explain the annual variation of test D in a quite general manner by means of relativity. Giau, studying the problem of the existence and properties of Time (evolution, succession, sense), shows that besides the four-dimensional space-time solution (the physical Universe) the relativistic field equations also have a three-dimensional spacial solution. This solution is a three-dimensional Universe which performs a successive exploration of the four-dimensional physical Universe thus introducing an evolution, in other words a real Time, in the physical Universe. Giau analysed the important interactions of the three-dimensional and the four-dimensional Universe and shows that it is possible to explain the annual variation of the D test from relativistic point of view on the basis of the Earth's annual helicoidal motion as a manifestation of the energy flow representing the action of the three-dimensional Universe on the physical Universe. Today the solar hypothesis, as I have shown, embodies extensive experimental results obtained during the IGY and IGC.

It is owing to this hypothesis that it was possible to foresee these facts, to seek them out and to study them. It can thus be considered at least a highly useful working hypothesis."

### **(1) Appendix B**

Heutzutage ist den meisten Menschen bewusst, dass es einen Unterschied zwischen der Luft über und unter der Erde gibt, doch sie bemerken nicht, dass es auch einen Unterschied in der Temperatur gibt. Sie wissen, dass die Luft unter der Oberfläche mehr Kohlensäure und die Luft darüber mehr Sauerstoff enthält, aber auch hier kennen sie den Grund nicht. Der Grund liegt darin, dass die Luft, sobald sie von der Erde aufgenommen wird, von einer feinen Lebenskraft durchdrungen ist.

So verhält es sich auch mit der Wärme und der Luft; sie nehmen eine gewisse Lebendigkeit an, sobald sie von der Erde aufgenommen werden. Das Gegenteil gilt für das Wasser und das feste Element Erde selbst. Sie werden im Inneren der Erde noch lebloser als außerhalb. Sie verlieren etwas von ihrer äußeren Lebendigkeit. Doch gerade in diesem Prozess öffnen sie sich, um die fernsten kosmischen Kräfte aufzunehmen.

Die mineralischen Substanzen müssen sich von den Kräften lösen, die unmittelbar über der Erdoberfläche wirken, um den fernsten kosmischen Kräften ausgesetzt zu werden. In unserem kosmischen Zeitalter gelingt ihnen dies am leichtesten – sie können sich am einfachsten von der unmittelbaren Umgebung der Erde lösen und unter den Einfluss der fernsten kosmischen Kräfte im Erdinneren geraten – in der Zeit zwischen dem 15. Januar und dem 15. Februar, also in dieser Winterzeit. Es wird die Zeit kommen, in der solche Dinge als exakte Anzeichen erkannt werden. Dies ist die Jahreszeit, in der die stärksten formgebenden Kräfte der Kristallisation, die stärksten Kräfte der Formgebung, für die mineralischen Substanzen im Erdinneren entwickelt werden können. Es ist mitten im Winter. Das Erdinnere ist dann am wenigsten von sich selbst – von seinen eigenen Mineralmassen – abhängig; es gerät unter den Einfluss der kristallbildenden Kräfte, die in den Weiten des Kosmos wirken.

Dies ist also die Situation. Gegen Ende Januar verspüren die mineralischen Substanzen der Erde das größte

Verlangen, kristallin zu werden, und je tiefer wir in die Erde vordringen, desto stärker ist dieses Verlangen, innerhalb des „Hauses der Natur“ rein kristallin zu werden. In Bezug auf das Pflanzenwachstum ist das, was zu dieser Zeit mit den Mineralien geschieht, weitgehend gleichgültig oder neutral. Das heißt, die Pflanzen sind zu dieser Zeit weitgehend sich selbst überlassen; sie sind den mineralischen Substanzen am wenigsten ausgesetzt. Andererseits sind sie für eine gewisse Zeit vor und nach diesem Zeitraum – und insbesondere *davor*, wenn die Mineralien sozusagen kurz davor stehen, in die kristalline Form überzugehen – von größter Bedeutung; sie strahlen jene Kräfte aus, die für das Pflanzenwachstum besonders wichtig sind.

Wir können also sagen, dass es etwa im November/Dezember einen Zeitpunkt gibt, an dem die unter der Erdoberfläche vorhandenen Ressourcen besonders wirksam für das Pflanzenwachstum sind. Die praktische Frage lautet: „Wie können wir dies konkret für das Pflanzenwachstum nutzen?“ Es wird der Zeitpunkt kommen, an dem man erkennt, wie wichtig es ist, diese Tatsachen zu nutzen, um das Pflanzenwachstum gezielt zu steuern. Ich möchte gleich darauf hinweisen: Wenn der Boden die im Winter wirkenden Kräfte nicht von selbst nach oben transportiert, ist es ratsam, ihm etwas Ton beizumischen. (Die richtige Menge werde ich später angeben.) Dadurch bereiten wir den Boden darauf vor, die im Erdinneren vorhandenen Ressourcen nach oben zu transportieren und sie für das Pflanzenwachstum nutzbar zu machen. Ich meine die Kristallisationskräfte, die wir bereits beim Betrachten des kristallisierenden Schnees beobachten können. (Die Kristallisationskraft nimmt jedoch mit zunehmender Tiefe im Erdinneren zu.) Diese kristallisierende Kraft muss daher zu einem Zeitpunkt nach oben getragen werden, an dem sie ihren Höhepunkt noch nicht erreicht hat – den sie erst im Januar oder Februar erreichen wird.

So gewinnen wir die wertvollsten Erkenntnisse aus Wissen, das auf den ersten Blick fern erscheint. Wir erhalten Hinweise, die uns wirklich weiterhelfen, wo wir sonst im Dunkeln tappen würden.

Today, most people are aware that there is a difference between the air above and below the Earth, but they don't notice that there is also a difference in temperature. They know that the air below the surface contains more carbon dioxide and the air above it more oxygen, but again, they don't know the reason. The reason lies in the fact that, as soon as the air is absorbed by the Earth, it is permeated by a subtle life force.

The same is true for warmth and air; they acquire a certain vitality as soon as they are absorbed by the Earth. **The opposite is true for water and the solid element Earth itself.** They become even **more lifeless inside the Earth** than outside. They lose some of their external vitality. But it is precisely in this process that **they open themselves to absorb the most distant cosmic forces.**

The mineral substances must **detach themselves from the forces that act immediately above the Earth's surface** in order to be exposed to the most distant cosmic forces. In our cosmic age, this is easiest for them – they can most easily detach themselves from the immediate surroundings of the Earth and come under the influence of the most distant cosmic forces in the Earth's interior – in the period between **January 15th and February 15th**, that is, in Winter.

The time will come when such things will be recognized as precise signs. **This is the season in which the strongest formative forces of crystallization**, the strongest forces of shaping, can develop for the mineral substances in the Earth's interior. It is the middle of winter. The Earth's interior is then least dependent on itself—on its own mineral masses; it comes under the influence of **the crystal-forming forces that operate in the vastness of the cosmos.**

This, then, is the situation. Toward the end of January, the Earth's mineral substances feel the greatest desire to become crystalline, and the deeper we penetrate into the Earth, the stronger this desire becomes to become purely crystalline within the "house of nature." With regard to **plant growth**, what happens to the minerals at this time is **largely**

**irrelevant** or neutral. That is to say, the plants are largely left to their own devices at this time; they are **least exposed to the mineral substances**. On the other hand, they are of utmost importance for a certain period before and after this period – and especially before, when the minerals are, so to speak, on the verge of transitioning into crystalline form; **they radiate those forces which are particularly important for plant growth**.

So we can say that around **November/December**, there is a time when **the resources present beneath the Earth's surface** are particularly effective for plant growth. The practical question is: "How can we specifically utilize this for plant growth?" The time will come when we realize how important it is to use these facts to guide plant growth in a targeted way. I'd like to point out right away: If the soil doesn't naturally draw the forces acting in winter upwards, it's advisable to mix in some **clay**. (I'll specify the correct amount later.) This prepares the soil **to transport the resources present in the Earth's interior upwards** and make them available for plant growth. **I'm referring to the crystallization forces** that we can already observe when looking at crystallizing snow. (However, the crystallization force increases with increasing depth within the Earth.) **This crystallization force must therefore be brought upwards at a time when it hasn't yet reached its peak** – which it will only reach in January or February.

(1) RS Nature Story <https://garudabd.org/dr-steiners-plant-story/>

(2) Fundamentals of therapy CHAPTER 5

#### **Further reading**

<http://www.orgonelab.org/MillerReich.htm>