

NATURA

Illustrated Newsletter of the Natural Science and Mathematics Group of the AS of GB

Spring 2025



Creating fire at the Science group AGM
'Earth Organism - Dynamics of Air and Warmth'

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Quotes

“The plant may become a blossoming flame, man a speaking flame — an animal a walking flame.”

Novalis

One phenomenon must necessarily lead to other phenomena, as one experiment does to several experiments.

Nature is a whole – in which each part in itself can never wholly be understood.

The true student of nature begins from any point and pursues his path step-by-step into the immeasurable distance with a careful connection and alignment of the individual facts. Thus, for example, pursuit of the process of combustion.

Novalis, in Stoljar 1997:157



Reports

Reflections and presentations from the Natural Science Section ‘Earth Organism - Dynamics of Air and Warmth’ event at the Science Group AGM, Centre for Science and Art, Stroud & The Field Centre, Nailsworth. November 2024

Some reflections after the Science group meeting “the Earth organism - the dynamics of air and warmth “

I have some strong impressions and am grateful for so many of the experiences we had together this year.

The fascination of the rhythmically formed flames moving up a pyrex tube.

The glowing ember amid black scorched ivy dust the product of good focussed collaboration, and then the anticipation and the joy of a bright glow bursting into flame.



A sense of the differentiations in reflected and windowed warmth around the Earth giving wonder at the unfolding understanding of the living Earth organism.

The intricate interlaced structure of the human circulatory system with so much embodied wisdom.

The rock fissures pictured under the earth with their invisible projection allowing our ancestors to wisely locate their springs, their homes and their sacred sites.

Alexander von Humbolts’ illustrations of various mountains from around the world, showing the ecosystems at different altitudes. It is so good to see the idea of the whole working in all the particular situations.

I have a growing sense of polarities at work in the forming processes in the realms of solid, water, air and maybe even warmth

What I am most grateful for is the experience of being in a group enthusiastically exploring together, and keen to pursue the healthy enlivening phenomenological science/art which Goethe initiated.

Simon Charter



“Does weather arise in a living projective context?” – presented by Pat Toms at the AGM.

Oscar Singer's findings that highs and lows gestate in patterns (*Singers lock, the revolution in understanding the weather*; Singers Press 1998); Trevor Constable's devices used to change the weather, with appropriate empathy (www.trevorconstable.com and Thomas J. Brown *Loom of the Future, the weather engineering work of Trevor Constable*, Borderland Sciences Research Foundation 1994) and how Dennis Klocek forecasts weather (*Climate: Soul of the Earth* Lindesfarne Books 2011). Projective considerations may explain the location and gestation of weather changes, with the Earth-Soul experiencing planetary aspects as posited by Kepler. What is being projective was considered - projective association with form; subtle influences manifest by association with the form of things, such as a device, the Earth, planets.

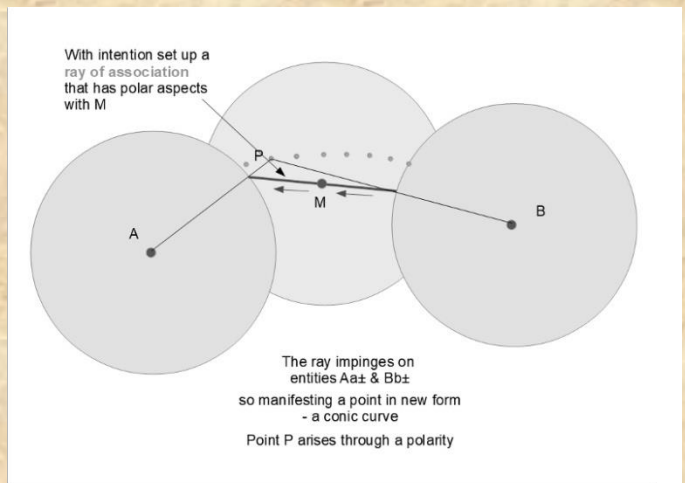
Are weather highs and lows, cloud appearing, manifest at etheric points? Do ‘etheric points’ apparent change in water associated with its field of form. Examples given: holy water manifest through ritual at a font in a spiral field of form manifest with projective intent at an e-point located over intrusive geological feature such as a crossing of fissures; bio-dynamic potency that involves ritual stirring that creates a water spiral. For both a vortical field of form is manifest through projective association with form with respect to an etheric point.

Trevor Constable explains how he orientates a device with respect to 'ether' currents, NS and EW currents that arise in relation to the Earth form and axis. Inspired by reading Guenther Wachsmuth who had studied Pandit Râma Prasâd, Natures Finer

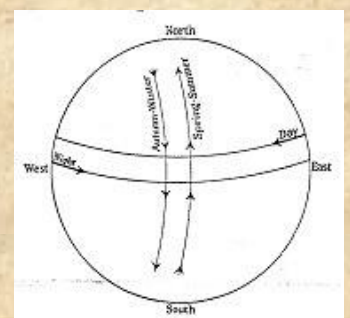
Forces 1889 after an indication from Rudolf Steiner (see E. Pfeiffer *A Modern Quest for the Spirit*). The diagram of ether currents appears in *Etheric Formative Forces in Cosmos, Earth and Man* 1932.

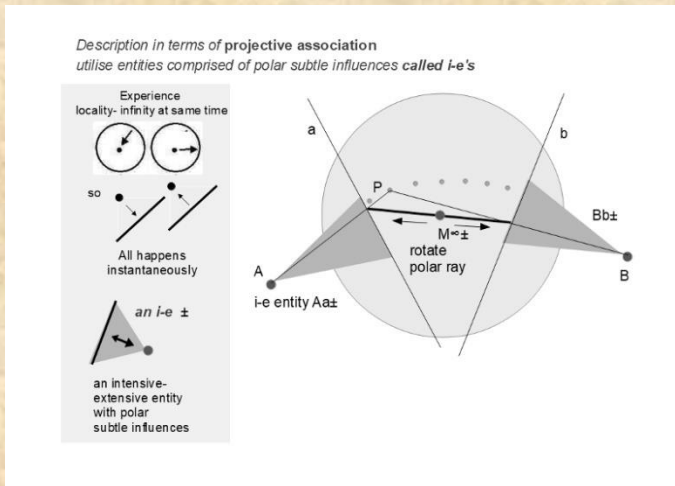
Trevor Constable quotes Guenther Wachsmuth: “... the warmth ether [circulates], saturating part by part the earth organism. Circulating around the rotating earth body, keeping it alive. The 'warmth-night' and 'warmth-day' thus alternate as a rhythmic result in the different part of the earth organism. The rotation of the earth can be understood only if we know that it is the etheric earth which induces the rotation of the solid earth, and not the reverse”.

Do humans have an innate projective faculty that uses the two hemispheres of the brain to facilitate projective association with form? This enables polar subtle influences to be experienced intuitively with respect to a form at the same time. This can manifest new form. As an example, consider a mind point M associating sensually with etheric points A & B, so manifesting a new form – a conic curve. Rays off M give points on the curve, one is shown in the diagram.

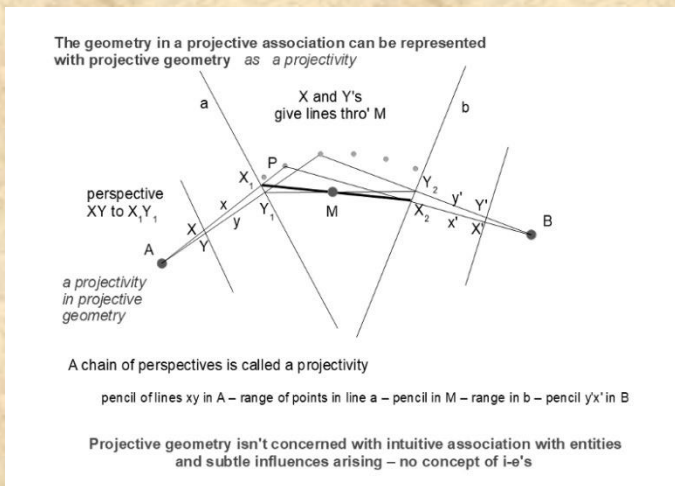


Considering an intrusive-extrusive entity used to represent both sensual and geometrical association of point and line (or plane in space). The arrows show polar intuitive associations. A representation of the manifestation of the curve in terms of i-e's.





This was contrasted to the way projective geometry represents a projectivity as a sequence of perspectives. – with no consideration of sensual aspects of projective association with form (see pg textbooks).



Subtle influences manifest intuitively as entities in a field of form appear to underlie path curve formations of living growth and change. The mind can set up a projective space with incidences of geometric entities in measures – as subtle influences – thought-forms.

The following diagrams addressed the difficulty trying to understand and describe subtle influences; how 'forces' referred to by Rudolf Steiner may be better described in terms of etheric influences. And how a field of form, the term coined by Lawrence Edwards, is manifest with intention - it is not about force.

Trying to understand and describe subtle influences ... Great Breath Prana

Rudolf Steiner referred Ehrenfeld Pfeiffer and Gunther Wachsmuth to Rāma Prasād, *Nature's Finer Forces* 1889

See E. Pfeiffer *A Modern Quest for the Spirit*

On the 'Science of Breath' - Sanskrit text Stanza 5:
 'Unmanifest, formless, the one giver of light, is the Great Power; from that appeared the soniferous ether (Akasha); from that had birth the tangiferous ether'.

RP comments:
 "Formless" - this epithet is given because forms only show themselves when the Tatvas and the two states of matter – the positive and the negative, the active and the passive – come into existence.

Ether = polar subtle influences?

Etheric currents underlie life
 'in the svara are all three worlds ... [past, present, future] Stanza 15:
 RP comments
 "There is nothing in the manifest universe that has not received existence from the Great Breath, prana."
 "As the earth moves round her own axis and round the sun, twofold centres are developed in the terrestrial Prana. During the diurnal rotation every place, as it is subjected to the direct influence of the sun, sends forth the positive life-current from the east to the west. During the night the same place sends forth the negative current.
 "In the annual course the positive current travels from the north to the south during the six months of summer - the days of the Devas, and the negative during the remaining six months - the nights of the Devas".

Wachsmuth's diagram
 Trevor Constable references Wachsmuth

Steiner ... on forces

On 'forces working inwards from the spherical circumference'

RS First Scientific Lecture-Course Stuttgart, 23rd December 1919 [s.393f]

'I look for the forces to which the life is subject ... I only find them when as it were I go to the very ends of the world – and, what is more, to the entire circumference at once ... I should have to go to the outermost ends of the Universe and imagine forces to be working inward from the spherical circumference from all sides, forces which in their interplay unite ... It is the very opposite of the centric forces with their potentials ...'

'This second leap will take us from external inorganic Nature into living Nature, and we must realize that calculation ceases where we want to understand what is alive ...'

Projective association with form concerns polar subtle influences – not centric and peripheral forces.

RS qualifies this description

Now in this explanation I have been neatly dividing all that refers to potentials and centric forces and on the other hand all that leads out into the cosmic forces. Yet in the Nature that surrounds us they are not thus apart. You may put the question: Where can I find an object where only centric forces work with their potentials, and on the other hand where is the realm where cosmic forces work, which do not let you calculate potentials? An answer can indeed be given, and it is such as to reveal the very great importance of what is here involved. For we may truly say: All that Man makes by way of machines – all that is pieced together by Man from elements supplied by Nature – herein we find the purely centric forces working, working according to their potentials. What is existing in Nature outside us on the other hand – even in inorganic Nature – can never be referred exclusively to centric forces. In Nature there is no such thing, it never works completely in that way: Save in the things made artificially by Man, the workings of centric forces and cosmic are always flowing together in their effects.
 "In the whole realm of so-called Nature there is nothing in the proper sense un-living. The one exception is what Man makes: artificially, man-made machines and mechanical devices".

'Goethe could not make do with such an outlook. What was called "Nature" under this influence seemed to him a void abstraction. There is reality for him only where centric forces and peripheral or cosmic forces are alike - where there is interplay between the two.

Arguably, interplay can be described in terms of projective association with form - force is a subtle influence

A field of form as subtle influence is manifest with intention – it is not about force'

- The concept of field of form was coined by Lawrence Edwards in a geometrical context in his research into nature's patterns in space and time [VofL].
- He analysed the geometry of natural formations, in particular rhythmical changes in dormant winter plant buds. He shows a bud in a particular species changes shape or "breathes" slightly, rhythmically with the conjunction of a particular planet and the Moon.
- He identified geometric parameters that govern changes in form which somehow correlate with the motion of cosmic bodies.
- He shows how points, lines and planes can be associated together geometrically and be transformed projectively in sophisticated ways to create formations that appear in nature.
- A field of form arises through association with polar aspects of form.

He explains how a path curve geometrical transformation allows space to 'multiply itself':
 "We find ourselves presented with an infinite family of curves, filling, and weaving through, all space. Such a family of [path] curves I call a field of form".
 He used the phrase field of form with respect to path curve fields.

A field of form appears to be used to determine form of growth and change:
 "Something is at work in the plant that has the qualities of pure form, divested of any spatial limitations (apart of course from form itself)".

- 'Something' at work is a living impulse.
- 'At work' is considered here to be projective association with form in which perceived entities emanate 'subtle influences' disposed geometrically, that can be associated together projectively to manifest further form.

Pat Toms

Learning to read the forms of flow

Most of us in the Flowform Association have been wowed by water's ability to create elegant forms out of flow. They evolve, can seem to breathe and have a life of their own. They seem to picture the forms we see in the plant world especially, but also in animal organs. We are indebted to Theodor Schwenk for drawing attention to this forming on the water element. In the book Sensitive Chaos, he also shows some cloud forms and others arising in gaseous flow. Is this a different type of forming? Forming in the air element?

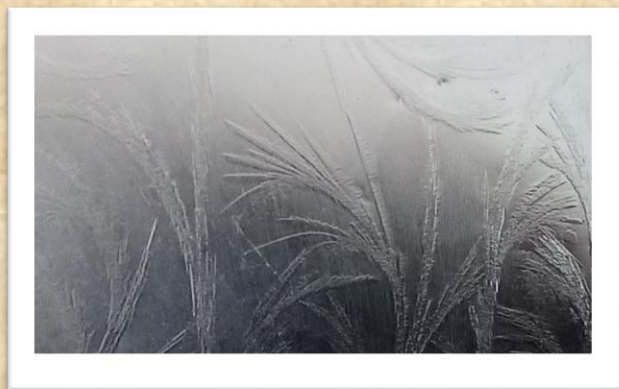


I have long been fascinated by the fern-like patterns appearing in frosty weather on windows and cars which also have a certain flow to them, the substance is not in flow when it freezes, either from the air or a moving film of water, but the forms speak of flow all the same. Is this another quality of forming? Forming in the solid element?

Matthias Rang of the Natural science section at the Goetheanum has recently been going up over the alps to the Stratosphere- well, sending his instruments up in a balloon at least. He was measuring incoming and outgoing radiant heat and has been able to show how the earth has sheaths of warmth around it, ie the Earth's warmth body is structured, is



formed and it appears to move. Is there a forming from movement in the warmth element?



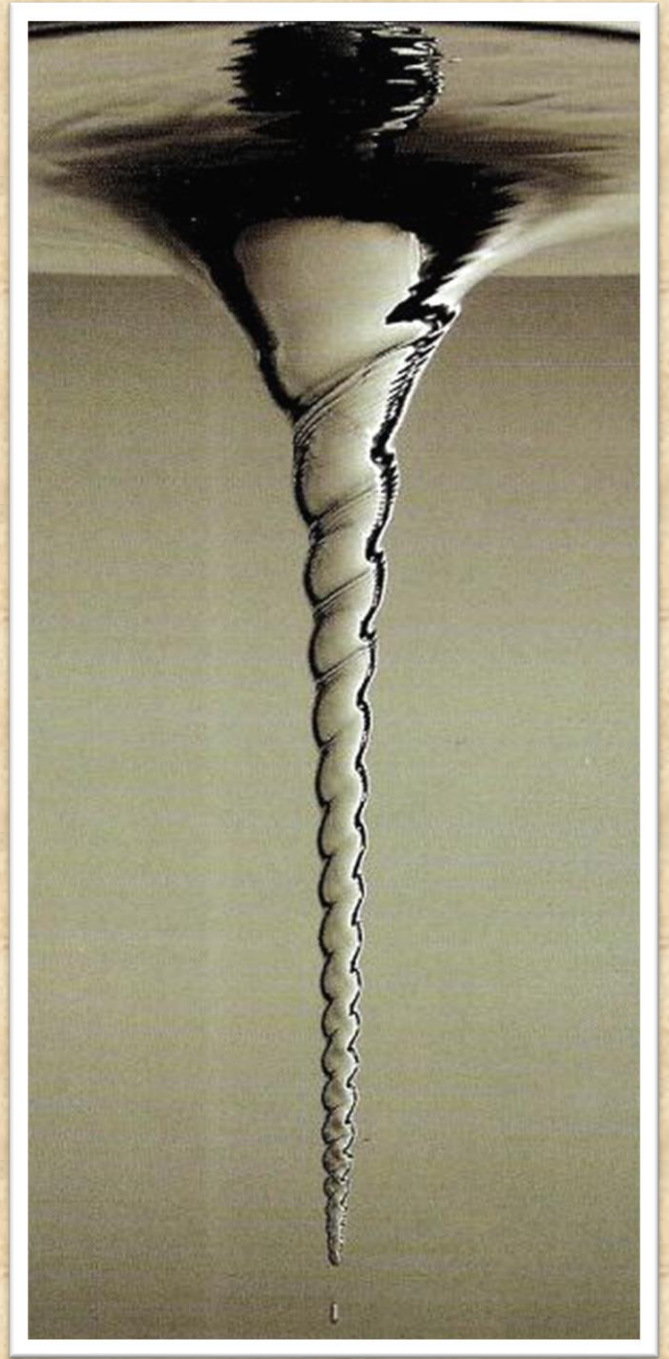
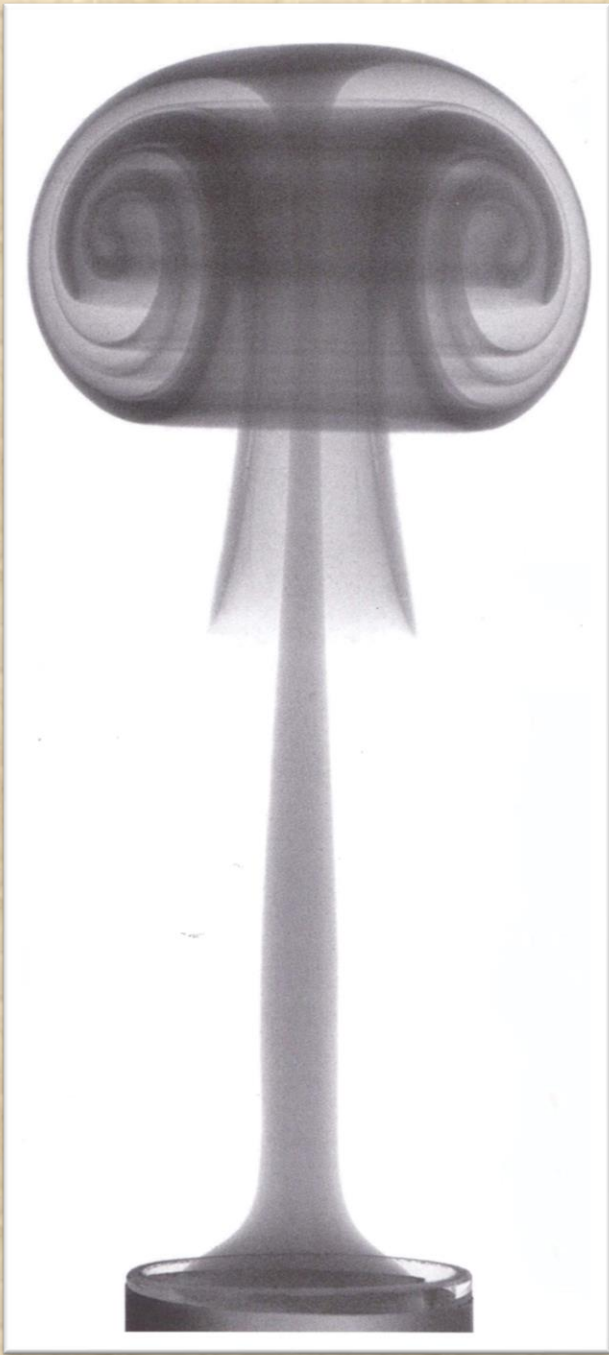
Flow in the solid earth element

I begin to wonder how the flow arises, how the movement emerges and unfolds in each element. I think I can see polarities at work- which would please Goethe no doubt.

In the ice ferns we see the movement of lines, they change their orientation in a regular but not fixed way. For surface freezing (it is different in the middle of a body of water) the lines seem to move in such a way that the geometrician would imagine they connect a moving point in the periphery and a moving local point. Is there a centre periphery polarity at work here? The crystallization flow appears to play between these in what is sometimes called the movement of a point -line pair, see below.

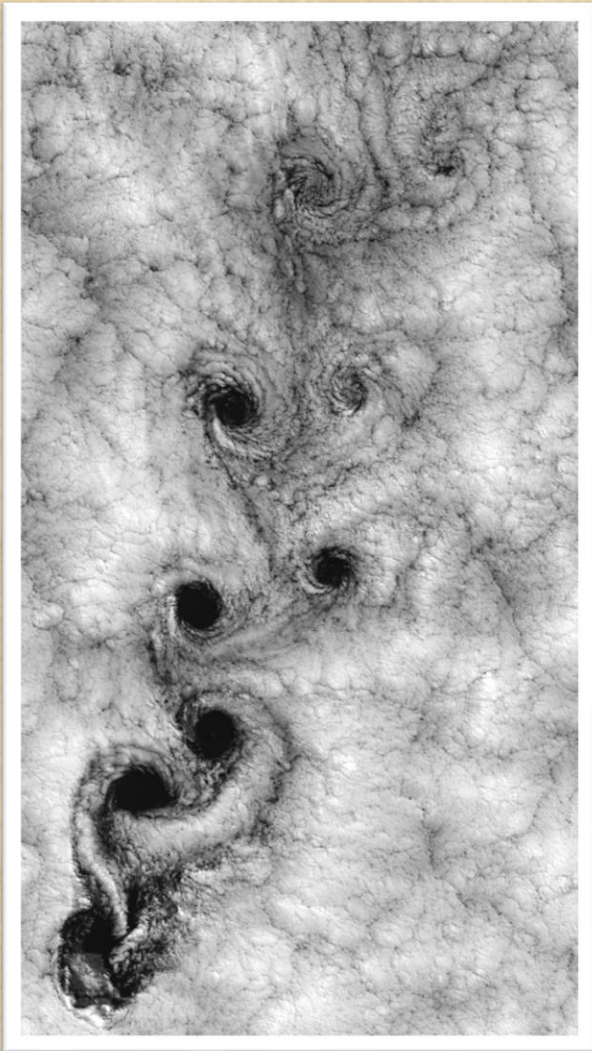
This can also be beautifully rhythmical at times.





Water Element

In water flow (especially laminar harmonic flow), when it is subject to pushing forces, we can see a gesture of flow turning in on itself and tending to the forming of the ring vortex. Under drawing or sucking forces we can see more eddying and the tendency towards the spiral (plughole) vortex, where water moving from the horizon (horizontal) towards the direction of draw, which is vertically down when flowing under gravity. The first is a self-enclosing movement and has an expansive quality, the second is stretched out (to distant infinities) and has a contractive gesture. The forming flow plays between these -sometimes in a rhythmic play.



Air element

In the atmosphere we may see some aspects of watery flow, and meteorologists will sometimes use water to model air currents. For instance, the Karman Vortex street appears in this satellite picture.



Vortex street in satellite picture and spiral flow in cloud form



Kelvin Helmholtz phenomena.

However, there is also airy flows which are a bit different. The puffing up of cumulous clouds is characteristic of warmer lower altitude air rising into cooler air. These are more defined forms which come and go but keep their boundary definition. One might think of a British summer day with lots of sailing boat clouds scattered across the sky. Stratus clouds can also exhibit this definition



Cumulous clouds growing in the foreground of the skyscape.



Of course, we usually see either a mix of different form gestures in various clouds in a cloudscape or a blend in any single cloud form.



Wispy cirrus clouds are characteristic of higher altitudes and these generally do not have such defined boundaries with the surrounding air. Is there another polarity at work in air, can we see air playing between these polar gestures?

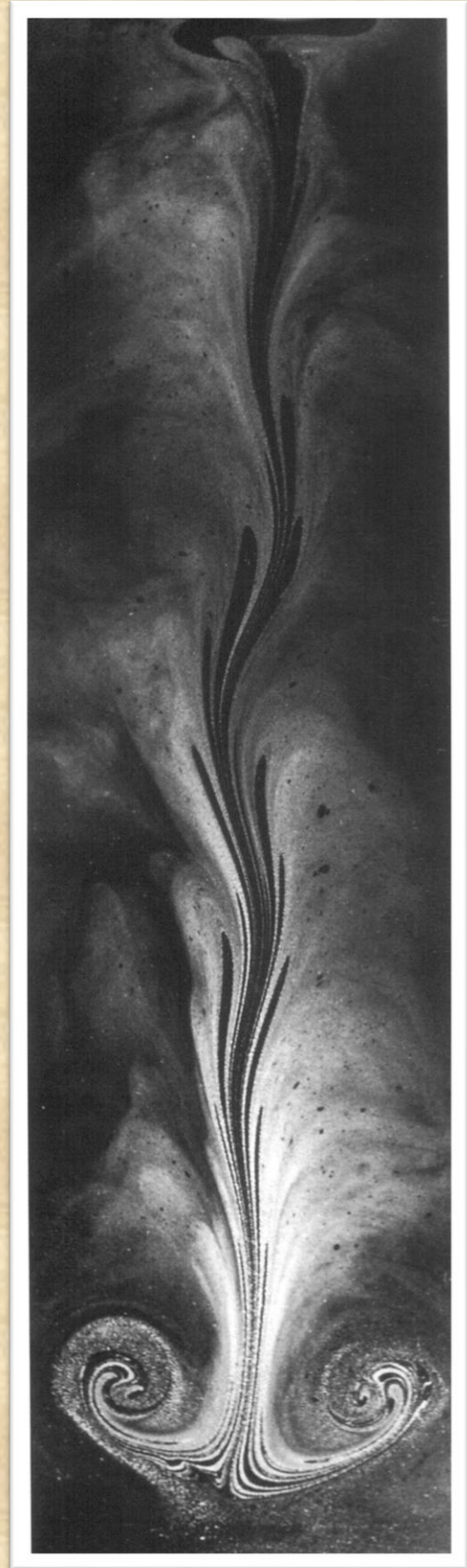
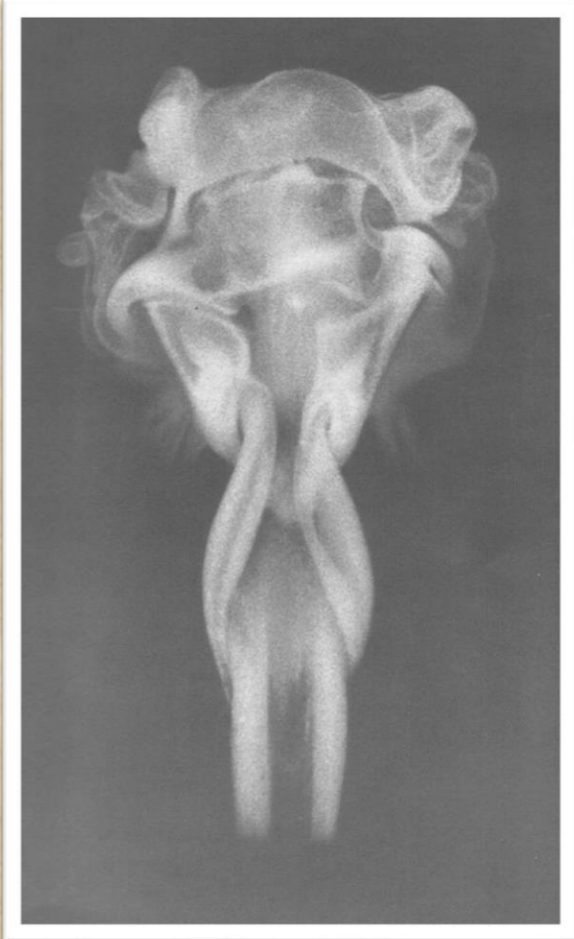




may also be that the warmth sheaths around the Earth are moving in and out a little like a heart swells and contracts in its beating. Is this radial expansion and contraction of surrounding sheaths a warmth movement gesture? I leave that as an open question.

Warmth Element

How is the movement, the flow in a warmth body???? When the Goetheanum Natural Science Section sent its balloon into the zone between the troposphere and the stratosphere it should have reached a certain height and a low enough pressure that the balloon fabric would be rent, the balloon pop and the instruments come gently parachuting back to Earth. This did not happen; it got stuck and travelled around for many hours at a certain height. It did however rise and fall in a rhythmic fashion, possibly this involved a process of warming and rising, cooling and falling then warming again etc. It



Concluding thoughts – the forming of life.

Pictures from Sensitive Chaos by Theodor Schwenk In these images the forming of the water element revealing both plant like and animal-like forms can be seen. One can also see in both plant and animal organs and organisms the gestures of the water element once one has an eye for it. Are all the elements at work in the forms of life, and especially in the human organism, I imagine when a good doctor is able to read the way a patient presents themselves, they are able in many ways to see the working of the elements. I feel that learning to see these form gestures of the elements may be one way that this can be done quite consciously.

Simon Charter December 2024



Reflections on lighting my inner fire, hearth and heart

Since our meeting on the dynamics of air and warmth, I have reflected on their qualities and my resonances with the lectures and discussions. I appreciated our group dynamics, collaborations and synergies. With the fire-making research that Jonathan shared with us, it was a special moment when our group managed to ignite the fire and light our candle. Then as our fire went out, I suggested lighting it with the flame from our candle. For me, this completed the cycle of creating a fire to light the candle and then returning the flame to re-light the fire. I have always enjoyed the art of kindling fires using natural materials and then stoking the embers to keep the fire alive. Our meeting also ignited the fire element within me

and since then, the embers of my inner fire are still glowing ready to be stoked to fire up my imagination and creativity.

The Field Centre provided a safe and sacred space which was perfect for group contemplation and depth enquiries. There was a sense of home and hearth with wholesome and nourishing meals. I met lovely people with interesting synchronicities indicating a soul alignment and deeper flow of being in the right place at the right time. I have heart-warming impressions, memories of caring hospitality and meaningful conversations.

In October, shortly before our meeting, I watched some of the excellent Evolving Science 2024 lectures made available in English thanks to Goetheanum TV. I was delighted to experience this conference and particularly inspired by the lectures relating to the microbiome. As my background includes evolutionary symbiosis and a Goethean approach to microbiology and health, it was positive to hear about the research developments and contemporary scientific and spiritual expressions. It is heartening to see that the academic enquiry into Goetheanism is expanding into more fields with an increase in scholarly works internationally.

Matthias Rang introduced the idea of mirrors and windows. I wish to express my gratitude for the reflections into my own research subject and inner journey. As well as for the portals opened to envisage new horizons for intuitive and holistic modes of perception. I look forward to seeing you all again this autumn.

Warmest wishes, Monica

Monica Bryant, South Gloucestershire.

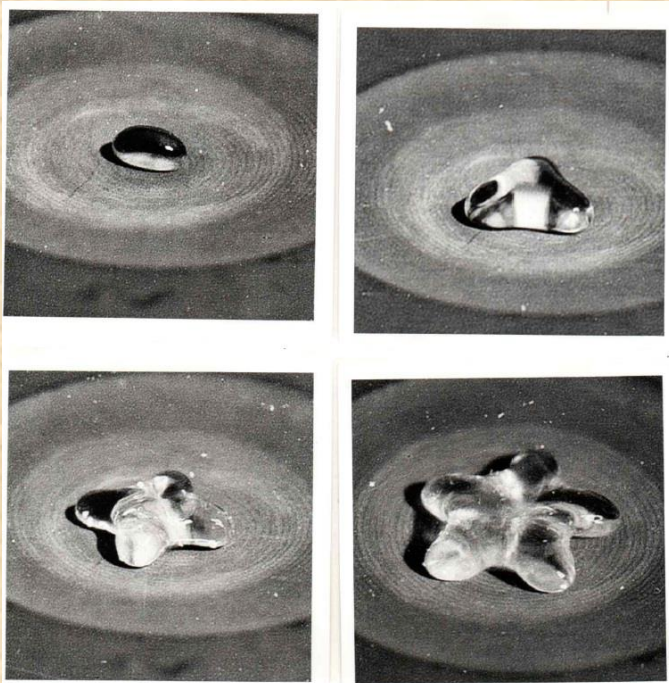
www.evolutionary.co.uk



THE LEIDENFROST EFFECT

Curious forms

These pictures show different quantities of water vibrating on a hot-plate. The shapes produced clearly depend on the quantity of water; the more water, the greater the number of “lobes.” In this experiment, water was placed in the hollow of an electric hot-plate which was already very hot.



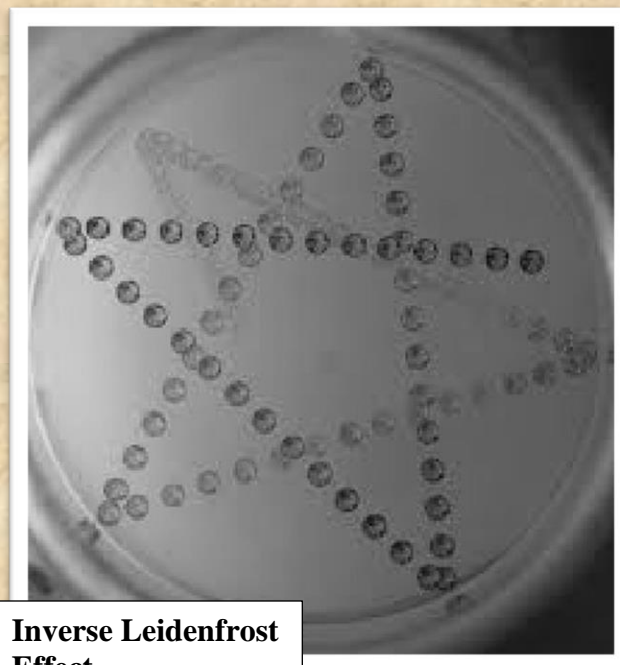
The phenomenon is connected to the Leidenfrost effect. This is when a liquid comes into contact with a very hot surface. Instead of spreading out on the surface, rapid vaporisation produces a layer of vapour which prevents the liquid touching the hot surface. As steam is a poor conductor of heat, it reduces heat transference and so reduces further evaporation. The resulting semi-stable state last for some minutes. A similar effect is commonly observed when testing a hot iron by sprinkling water on it. If the iron is hot enough, the water does not evaporate but adopts a spheroidal state and simply rolls off the iron.

The shapes arise as a result of the vibrations of the suspended drops of water; they can be seen pulsating very rapidly, skittering about on the hot-plate. Moreover, each form inverts fairly quickly; the extended lobes draw in, and new lobes extend, but always producing the same number of lobes. Clearly, we have two effects here: firstly, the Leidenfrost effect, which allows a volume of water to be suspended on a cushion of water vapour.

Secondly, the spontaneous vibration of the water, which produces the shapes.

The Leidenfrost effect was first described in 1756 by Johann Gottlob Leidenfrost (1715-1794), a German Physician and Theologian. It is due to this effect that it is possible to dip one’s finger into molten lead (very briefly!) without burning. The finger is wetted first, enabling a protective steam layer to form. Similarly, one can plunge one’s hand into liquid nitrogen, as the heat of the hand produces enough gaseous nitrogen to form a short-lived protective layer.

Which leads us on to a discovery made in 1969: the



Inverse Leidenfrost Effect

“Inverse Leidenfrost Effect”, where hot and cold are reversed. For example, a drop of ethanol at room temperature is dropped onto liquid nitrogen at -196°C . The heat of the ethanol vaporises enough nitrogen to produce a supporting layer of gas. However, in this case, the drop moves in straight lines over the surface, rebounding from the container edges rather like a billiard ball. The picture shows the ethanol drop at progressive points on its journey, producing a striking form. The propulsion is thought to be due to subtle asymmetries as the gas disperses away from the drop.

Howard Smith

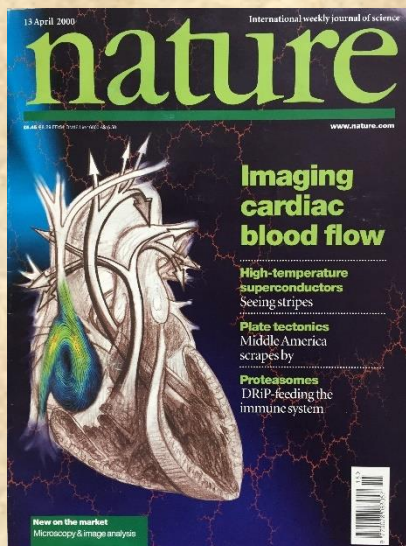
A reflective editorial overview of the AGM

This was my first opportunity to attend the AGM in person and it's my third issue editing *Natura*. I've had family commitments previously that precluded me from attending until this year. However, I've always been intrigued by the rich programme on offer and I wasn't disappointed.

The weekend consisted of a wide range of talks and activities, some already discussed above.



We started with a full room on the Friday evening with a talk by Dr Matthias Rang of the Section for Natural Science at the Goetheanum on the 'Qualities of warmth in relation to the sheaths of the Earth'. As part of a physics experiment carried out at a "Working Day for Physicists and Physics Teachers" in 2022 a weather balloon equipped to measure the Earth's thermal radiation was launched from the Goetheanum. The thermal equilibrium between the Earth and the cosmos was deliberated resulting in a window/mirror polarity. <https://science.goetheanum.org/en/institute/project/the-earths-thermal-sheath-and-an-anthroposophical-ratio-of-the-climate-crisis>.



On the Saturday we had a thorough and rich talk on "Air, Warmth, Life and Us" by Philip Kilner who gave us some beautiful images of the heart related to 'warmth'. Our chats away from his talk around the supper table at Simon's with

Matthais continued with this rich theme, provoking much discussion.

Our Saturday evening started with a dramatic biographic presentation of Alexander von Humboldt

by Graham Kennish which followed with an even more dramatic and incredible

artistic presentation of all kinds of fire by Gordon Clarke. It was really a showcase with much 'ooohs and aaaahs'. Our own big fireworks display on the hill.

Sunday morning was spent 'fire crafting' with Jonathan Code who has been looking at 'A Path of Fire – Autoethnographic writing on Ecoliteracy' as part of his thesis work at the University of Bath.

The first photo in this newsletter of this activity was taken by Jonathan and others are courtesy of Graham Kennish. Thank you.

I spoke of the work I am doing on earthquake preparedness in schools in Nepal with Dr. Shiba Subedi from <https://seismoschoolnp.org/>

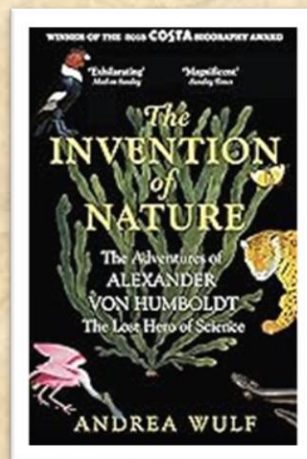
And my visit to Maitreya Pathshala - The Pokhara Waldorf School in Nepal, <https://www.facebook.com/maitreyapathshala>. If you wish to donate funds to help purchase a 'raspberry pi seismometer' for their school please email me for details.

Sarah Houghton
sarahhoughton@stmichaelsteiner.com

Diary of a Waldorf Science teacher

As part of class 10s ecology work this autumn they studied two different sites, the area under a tree on school grounds and nearby park acid grassland. This is some of their work:

'Hanworth Park is a treasured conservation area which holds historical significance, being the place



Amelia Earhart landed in 1932 after her ground-breaking solo transatlantic flight. This event marked a significant moment in history, celebrated by many. On the grassland there were 3 main reasons why this is an ancient grassland. The grassland has a lot of roots which means it is very old and is home to many species of plant that have had centuries to develop complex root systems. There are still little clues across the park that indicate that it is ancient including knapweed and pignut, two plants which indicate acidic grasslands, due to the high-water table, a habitat that is nutrient deficient and needs extra special care these plants are signs of ancient acid grassland because they only come around with no ploughing or tilling, Also the ant-hills in the grassland help support this theory even more because the nests are massive which support it is very old. The grassland is full of insects and animals for the simple reason that there are many ants living there which attract animals that prey on them such as; birds, spiders and beetles just to name a few. Furthermore, it is also home to Scottish bluebells or harebells, which are indicators of ancient grassland, making it even more treasured. Harebells have small blue flowers that are extremely rare. Out in the grassland there is a lot less noise and activities going on which means the wild-life can grow and live there without being disturbed.



in environment from man-made causes became obvious and it highlights the delicate balance of the food chain and the terrible effects our actions can create. It is very important that we consider this carefully in the future and what choices we make in the world around us.'

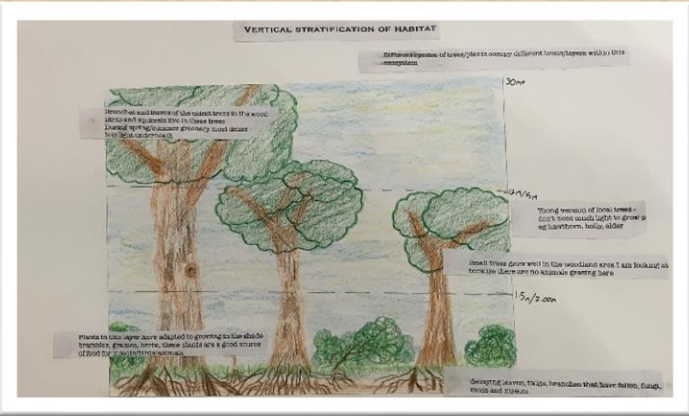
*Students work collated & edited by Sarah Houghton
High School Science Teacher
sarahhoughton@stmichaelsteiner.com*

Our work related to the 'Hanworth Air Park Biodiversity Project' continues with a 'Pond restoration workshop' on Sunday 9th February: 1-3.30 exploring the pond – we will take water measurements and look at what is living in and around the pond, 3.30-4ish tea and cake break (donations welcome), 4-6 with Helen Greaves - talk and questions (at The St Michael Steiner School)

All welcome. Bring wellies for pond work. You can pop in and say hi for different sessions or stay for the whole workshop.

We will observe and study the ephemeral pond and others that appear across the park. The water table across the park is always high in the winter with increased rainfall and this is common across the lowlands of the Thames and Crane Valley. The water doesn't drain away very well. This means the park grassland is unique in the London Borough of Hounslow; it's acid grassland (as oxygen cannot penetrated the soil due to the water the soil has this acid quality). The park land is also ancient as shown by the plant life on it.

As part of the park masterplan and the development of the bordering woodland, it has been proposed by (London Borough of Hounslow) LBH to extend and



This diagram shows the vertical stratification of the habitat, my elder tree is 3m tall, so it is in the lower canopy. Above my elder tree, there is a canopy, and beneath it are bushes, twigs, and shrubs.

In this observation of the trees and related areas, woodland and grassland, the impact of any changes

renovate this pond. This workshop and talk will look at the benefits of ponds for biodiversity conservation with Helen Graves from the Dept of Geography at UCL who is currently working on the EU Ponderful project looking at the influence of pond quality on greenhouse gas emissions and biodiversity and works on the Norfolk Ponds Project (NPP) and the European Pond Conservation Network.

This is one of 4 workshops I have organised this Spring funded by the Crane Valley Partnership applied for by the 'Hanworth Air Park Biodiversity Project' of the Friends of Hanworth Park House.

For your diary:

Friday 14th February -water flow form workshop (2-6) with an evening talk 7-8.30 with *Simon Charter* from <https://ebbandflowltd.co.uk/>

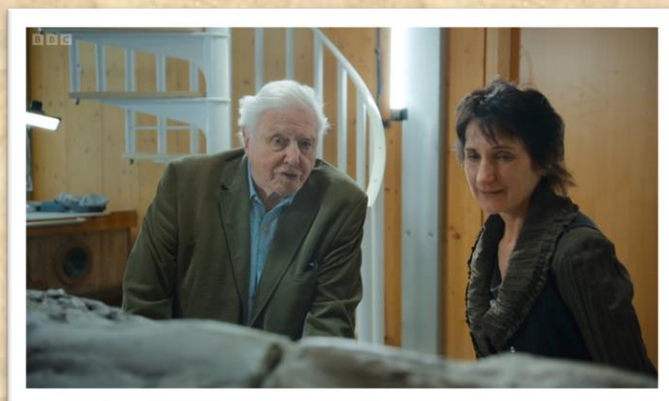
Saturday 22nd February – bat workshop with Alison Fure (bat ecologist) and Philip Briggs (Bat conservation trust) – 2-6pm – talk and workshop followed by bat walk on the park

Swimming with pliosours and other RMT ventures

On the front of Natura 2024 was a photo of Steve Etches and the found pliosaur and inside a report. This year class 9 journeyed to the south coast for a field trip; to Lulworth Cove, the Etches Fossil Collection and Kimmeridge Bay. Unlike 2023 which was hot and we dipped our feet in the sea. In September 2024 we experienced why hard hats are important when running field trips by friable cliffs. At Lulworth Cove in the summer there had been a large landslide from the chalk and as we walked along the coast at Kimmeridge away from the cliffs we jumped as little falls of rock fell' erosion in action.

It was wonderful for students to see the new pliosaur at the Etches Collection and watch 'Attenborough and the Giant Sea Monster' <https://www.bbc.co.uk/programmes/m001txg2>

Our very own Judyth Sassoon was one of the experts. Here are some screenshots:



"The Etches pliosaur is one of the most informative and best-preserved specimens worldwide" Dr Judyth Sassoon

More details can be found here:
<https://our-research.bristol.ac.uk/swimming-with-pliosaurus/index.html>

To further this fantastic work, a year-long fellowship from RMT at the Etches Collection is being funded. So, we are looking forward to Judyth being involved with some more adventures on the south coast in 2025.

Interestingly 2025 will be a year of growth at the Sunfield School campus with the new George Adams centre, part of the Ruskin Mill Trust. Here Troy Vine will be leading the way. Maybe one day our annual AGM/conference will be held here?

And news from Emerson College, it has come under the caring wing of Ruskin Mill Trust.
Sarah Houghton

Forthcoming meetings and Events

Attending to Nature, Goethean Practice near Stroud.

The sessions of our friendly and supportive group involve:

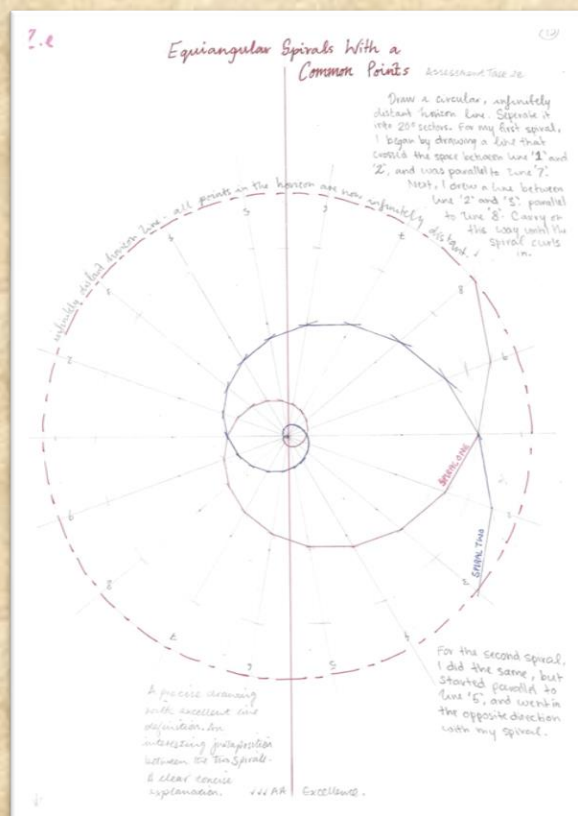
- Group study on a specific aspect of nature such as the maple family, the Cyclamen, Mollusc shells, the colours of autumn or the pine cone.
- Conversation around our engagement with nature.
- A delicious lunch.
- Occasional artistic activities.
- Free space to immerse yourself in the landscape surrounding Old Mill House.
- In addition, we have started developing an after-image process through some meditative techniques with Adrian Lamont's guidance.

Dates for 2025 are provisional:
 February 15th

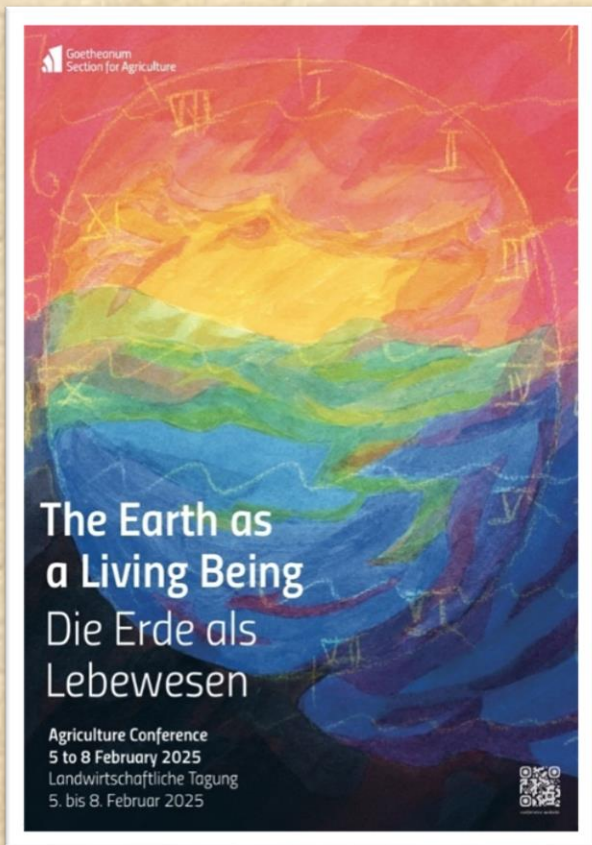
April 12th
 May 17th
 June 28th
 September 6th
 October 18th
 December 13th
 If you would like to join contact:
 07814 786682 simon.charter@live.co.uk



Annual Projective Geometry Workshop and Research Seminar
 26th-29th June Field Centre Nailsworth



(image from <https://stmichaelsteiner.hounslow.sch.uk/galleries/>)



**Summer preparation conference
for Waldorf Teachers
(includes science elements)**

23-26th July 2025

St Michael Steiner School, Hanworth Air Park,
London, TW13 6PN

Email conference@stmichaelsteiner.com

<https://stmichaelsteiner.hounslow.sch.uk/summer-preparation-conference/>



Polarities - Goethean Science Course

Friday 21/3 9am - Sunday 23/3 13:30

This course looks at Goethe's idea of polarity, focusing on his colour theory and his work on plants.

Seeing nature as an expression of polarities was fundamental to Goethe's scientific investigations. However, of the natural domains Goethe studied, his investigations of plants and colour are the only two works he brought to completion. This course takes us on an experiential journey through these two domains of nature in order to gain an embodied understanding of Goethe's idea of polarity and see nature as he did.

With Alasdair Gordon, Simon Reakes,
Dr Judyth Sassoon and Dr Troy Vine
At The Field Centre, Nailsworth GL6 0QE
£80 including lunches and refreshments
Please contact info@rmlt.org.uk to book.

Natural Science section AGM and conference

Topic and programme TBC

8th -10th November

Stroud, UK

Pyrites Summer Craft Camp

Sunday 27th July - Saturday 2nd Aug 2025
Ashen Plains - Woodland Campsite
<https://pyrites.org/craft-camp>

Providing an opportunity for individuals, children and their parents/friends of all ages to engage in meaningful craft activities.

All meals provided & shared together - organic where possible.

£455 adults
Children £355
Creche available

"The best holiday ever"
" The highlight of my family's year"

Blacksmithing, textiles, willow, soapmaking & herbs, bow making, clay work, copperwork, greenwood work, knifemaking, storytelling, leatherwork, bronze casting, stained glass, beadwork, bushcraft, rush work, skep making, stone & wood carving & whittling.

Membership

Note from the Treasurer and Membership Secretary.

The subscription for membership of the Science Group (including receipt of Newsletter) stands at £10 per year. If you have not already done so, please update your standing orders and let me know when this is done. I can still accept cheques but the local bank has closed so paying cheques in is more difficult. Standing orders or direct payment are preferable.

Our account is "The Science Group"
Sort code: 20-23-97
Account No. 90800007 with Barclays.

Membership subscription is £10 (UK), £12 (Europe) or £14 (elsewhere). For all membership and subscription queries please contact Simon Charter, simon.charter@live.co.uk, 01453 882114.

**PYRITES
SUMMER
CRAFT CAMP
2025**

A fun-filled week of creativity and joy. Camping & all meals provided & shared together - organic where possible

"highlight of my family's year"

"best holiday ever"

Sun 27th July - Sat 2nd August

Ashen Plains Campsite nr. Stroud

£455 adults
Children £355
Creche available

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Next Issue & Thank You

This newsletter wouldn't happen without you! So dear readers if you have made it this far, and hopefully you have, then please send copy to the editor by 1/7/25 for our SUMMER edition. I already have some copy and would love some more.

Email: sarahhoughton@stmichaelsteiner.com

Disclaimer

The opinions expressed in the published reports and articles are the authors' own and do not necessarily reflect the views of the Editor or members of the Science and Mathematics Group of the AS of GB.



***The Science Group
in Great Britain***

The Science Group exists to promote an understanding of scientific method and results, broadened and deepened by spiritual science; to maintain contacts among those with similar interests; to encourage collaboration and to publish and translate important contributions.

<https://sciencegroup.org.uk/>