

Science Group of the Anthroposophical Society in Great Britain

Newsletter – March 2013

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News

Science Group web site has moved

In order to reduce costs following a 25% increase in the hosting fee for our web site it was moved to a new host, resulting in not only a 10% reduction in the annual fee but also gaining five years usage of our new domain: sciencegroup.org.uk.

Henri Bortoft

Henri Bortoft is known to many members for his contribution to the understanding of Goethe's science, especially in his books *Goethe's Scientific Consciousness* and *The Wholeness of Nature – Goethe's Way Toward a Science of Conscious Participation in Nature*. Henri died on 29 December 2012.

In Memoriam

Louis Henry Goulden (22.2.1927 – 26.3.2012)

Several members have sent me contributions towards an obituary for Henry. These are presented here, beginning with an autobiographical sketch that Henry wrote in 2007. [Editor]

In September 1939, a few days after the outbreak of World War II, I was sent to St. Edmund's College in Hertfordshire, the oldest Roman Catholic public school in the British Isles, where my father and his brothers had received their education. This event had long been planned by my parents and hung, like the Sword of Damocles, above my head.

At the College I learned, above all, to love music: singing as a treble in the choir and listening to Bach and Handel on the great organ of the Pugin-designed church.

I left St. Edmund's early in 1945 and became a student in London at Faraday House College of electrical engineering. My studies came fairly easily to me so that I had the time to indulge my love of music and, shall we say, somewhat dilettante interests in mysticism, yoga, 'philosophy', etc.

The music of Beethoven especially attracted and moved me: I took every opportunity of hearing his works. I also read about the composer and while doing so the name of Goethe would sometimes appear: a shadowy figure but somehow magical; who was this genius I wondered? I began to acquire second-hand English translations of Goethe's works, most of which had been published in the 19th century.

Imagine to my surprise one day, walking from Faraday House, past the British Museum, I noticed a shop-front displaying books about Goethe, of course I entered and later learned that it was the headquarters of the English Section of the General Anthroposophical Society. I was greeted quietly by the librarian, Catherine Savery. In this manner my in-

volvement with the work of Rudolf Steiner began; I would have been about 20 years of age.

At about this time, perhaps after a concert or recital, I would have a dream-like kind of vision of a cultural centre which I would help bring about where the arts and sciences would flourish and mutually fructify one another.

I had the greatest respect for Miss Savery. Later I had to join the army as a National Serviceman and, at my request, books and lectures by Steiner would be sent from the library, to be read avidly in my free time when I could escape from the camp in the evenings.

After my National Service I worked for Evershed & Vignoles Ltd. in their factory at Chiswick, London, in charge of the production of an ohmmeter.

After a couple of years, seeking a more purposeful life, I became a care-worker at Peredur Home School in Sussex. After working in the gardens and studying the Agricultural Course of Dr. Steiner, I was encouraged by the principal, Joan Rudel, to take a training course in Bio-Dynamics at Warmonderhof College in Holland; as I was already learning German the Dutch language was not too much of a problem.

Returning to England I eventually found myself at Broome Farm, Clent, helping establish Demeter Seeds.

I returned to Peredur, this time as miller and baker: using a Hubby Mill and wood-fired oven, with my young trainees. Destiny, however, had a dramatic change ahead when I met the school potter, my future wife Pamela. Later we left Peredur Home School together. I was invited by my father to join him in his shop at Rye, as a bookseller; I was successful and the business expanded. On my father's retirement we moved to Forest Row in order to send our children to Michael Hall Steiner School. I opened a bookshop in East Grinstead. At this time under the imprint Henry Goulden Books I published a translation of Hemleben's *Rudolf Steiner: A Documentary Biography*; *Commonsense Schooling* by Roy Wilkinson and other titles.

Eventually I sold the retail book business, but continued dealing in antiquarian books. In 1987 we moved to Cornwall!

I now began to study and practise astronomy, this seemed to me to be the backdrop to all scientific endeavours. I lectured on Copernicus, Tycho Brahe and Kepler.

About this time I was commissioned by the U.K. publisher Anastasi to edit and revise the English translation of Elizabeth Vreede's letters on astronomy, including the text notes and index from the revised German edition of 1980; this was published as *Astronomy and Anthroposophy* in 2001. (This edition is not to be confused with the American edition under the title *Anthroposophy and Astrology* published about the same time.)

Approaching the millennium my wife and I translated and published, in a small edition, Heinz Schöffler's *Rudolf Steiner's Millennium Prophecies*.

On the occasion of the total eclipse of the Sun on 11 August 1999, visible in Cornwall, I held a Conference, near Tintagel. This was to be followed by Conferences at Hawkwood College in Gloucestershire, with Astronomy as the main theme, broadly speaking.

From these gatherings there eventually emerged a small group of scientists who currently meet twice a year and who share the aim of one day establishing a centre for natural scientific research, of the kind, for example, to be found in the

pages of *The Schiller File*, the translation of which was taking place at this time.

With *The Schiller File* published, I am now working on the next project: the biography/autobiography of a remarkable and distinguished man – Dr. Ehrenfried E. Pfeiffer (1899-1961).

Louis Henry Goulden, 24 December 2007

I met Henry at the 1999 Eclipse Conference in Cornwall where, as the new secretary of the Experimental Circle, I became inspired by his dream of an established institute dedicated to anthroposophically oriented scientific research. After a series of annual astronomy conferences organised by him he decided to make these into twice yearly meetings in Devon/Cornwall where researchers might present their findings and/or theses. These continue still. In 2010 these widened into a larger conference in Stourbridge, though by this time Henry's deteriorating health precluded any travelling. Nonetheless, his vision, for me at least, informed the direction of any such gatherings.

There is a saying that 'there is nothing so powerful as an idea whose time has come'. Henry saw that the anthroposophical community was perhaps even a tad behind the time in presenting to the world a disciplined and peer-reviewed science based upon its findings and we have Henry to thank for initiating a practical reminder of the fact.

In the process of participating in these events Henry proved a loyal and wise colleague and, over time, a respected and cherished friend. Not one to hog the limelight, his desire was to see others shine and contribute. His vision is strong in me still, to the point where I would suggest his name as an appropriate title of the institute which will surely one day come into being, in whatever form the time demands.

In gratitude, *Michael Atherton*

It was in April 1945 that I first met Henry at Faraday House where we were both studying electrical engineering. We also found a wider common interest in many other things including anthroposophy. Living in London at the YMCA, my daily path led along Great Russel St. past the centre for the English Section of the General Anthroposophical Society. It had a front window in which a notice announced the existence of 'The Rudolf Steiner School of Speech and Dramatic Art'. As I had never had much interest in this it was only when Henry saw a book in the window on Goethe that things began to start developing. He became an avid reader of the extensive library there reading late into the night with the help of coffee!

His studies in engineering led to graduate membership of the ITT and he and I joined the army as conscripts in 1948 spending our 'demob' leave at Hawkwood College in Stroud. Here I was to meet Ulrike, my wife, in 1950. This was thanks to Henry who not only led me to anthroposophy but also to my meeting Ulrike.

Henry found his way from engineering to flour milling at Peredur. Here he introduced me to Joan and Siegfried Rudel which was another important meeting leading to much support in our bio-dynamic work here on the farm. At one stage Henry worked with Maurice Collis and Ned Evitts on Demeter seed production. This was too early and could not succeed at that time.

A time followed when he followed in his father's profession in the book trade, this led to his publishing many books on anthroposophical subjects including some which included his translations. His interest in astronomy led to him publishing Elizabeth Vreede's letters on *Anthrophosophy and Astronomy* in book form, and monthly star notes on the BDAA website for a year. It is especially valuable to have more biodynamic

literature available as this is where the real battle for the future nutrition and inner development of mankind will be found. Perhaps this will be seen later as his greatest contribution to the world. I am sure that it is with great gratitude that we all look back on Henry's life. Our thoughts follow him with the realisation that we remain united through our ideals which are carrying us all into the future.

Alan Brockman

I first met Henry Goulden at the Anthro-Tech seminar on Moral Technology held in Glengorm Castle, Tobermory, in September 1998. It was immediately clear to me that with Henry's openness, knowledge and inquisitiveness in all things spiritual-scientific that we were to become close friends. In the years that followed we collaborated closely together on a number of projects and communicated via letters and telephone. In May 2007, whilst holidaying in Devon and Cornwall, Henry and his wife Pam invited me to stay with them for two very enjoyable days at their home in 'The Chapel', Treligga, North Cornwall.

Henry had his own publishing company, Henry Goulden Books, and was always very keen to translate and publish much valuable research material originally published in German, particularly that relating to how spiritual science could help redeem the one-sidedness of modern science and technology. I was later to learn that Henry began studying electrical engineering at Faraday House Electrical Engineering College, London, in 1945. Henry had a lifelong interest in science but particularly astronomy and amongst the many translation projects he commenced was a paper written by Dr. Hermann von Baravalle (1898-1973) on the lemniscatory movements of the planets first published in 1931 under the title *Die Bewegungerscheinungen der Planeten vom Gesichtspunkt des Rhythmus: Planetenschleifen als Metamorphosen von Wellenlinie und Lemniskate* [Phenomena of Planetary Movement in the Aspect of Rhythm: Planetary Loops as Metamorphoses of Wave-Line and Lemniscate], in *Mathesis: Beiträge zur Weiterbildung der Mathematik und verwandter Gebiete im Sinne der Geisteswissenschaft* [Contributions to the Development of Mathematics and Kindred Subjects in the sense of Spiritual Science].

Around 2006 Henry began translating *The Schiller File* compiled by the German natural scientist Paul Eugen Schiller (1900-1992) and first published in 2000. I together with others helped Henry organise the manuscript into a publishable format. It was initially published by him in 2007 but more recently in 2011 has been reprinted by SteinerBooks. After this project Henry was keen to see Ehrenfried Pfeiffer's autobiography published in English. Although Pfeiffer wrote his autobiographical memoirs in English it was translated into German by Thomas Meyer and first published by Perseus Verlag Basel in 1999. Again I helped Henry with the preparation of the text for the English edition, which not only contains Pfeiffer's autobiography but additionally contains essays and letters from his estate. This was published by Mercury Press in 2010 under the title *A Modern Quest for the Spirit: Ehrenfried Pfeiffer (1899-1961)*. Following on from this I helped Henry re-format the new (second edition) of *Rudolf Steiner's Millennium Prophecies* re-published in 2010. This lecture material by Dr. med Heinz Herbert Schöffler (1921-2003) was translated by both Henry and Pam. Over the years Henry translated much material for my own research including numerous quotations from Steiner's untranslated German lectures and articles by other researchers. With Henry's knowledge of German he never tired of my numerous requests to help me locate references to topics of interest in Emil Mötteli's 4-volume *Register*

zur *Rudolf Steiner Gesamtausgabe* [Index to the Collected Works of Rudolf Steiner], which Henry held in his private library collection.

To mark the occasion of the solar eclipse which occurred on Sunday 11 August 1999 (the first visible in the UK since 29 June 1927), Henry held a Conference near Tintagel, Cornwall, to coincide with it. This was followed by a series of mostly biennial conferences entitled 'Earthly and Heavenly Harmonies' at Hawkwood College in Gloucestershire, with astronomy as the main theme. From these initial gatherings and impulses there emerged a small Research Group made up of engineers, scientists, artists and lay people who endeavoured to meet once or twice a year to exchange views and share the common vision of one day establishing a centre for natural scientific research based on a Goethean-Steinerian methodology. Henry was the initiator, co-ordinator and mentor of this group which in recent years has held their meetings in The Christian Community centre in Buckfastleigh, Devon. At these meetings Henry almost always gave a talk, whether on the subject of astronomy, Pfeiffer's research, Earth magnetism and the significance of Schumann waves or some other interesting topic which provided inspiration to all those present.

Henry had a long and fruitful life and will be deeply missed by all those who knew him. The seeds he planted will continue to grow and blossom and the fond memories people have of him will continue to live on.

Desmond J Cumberland, Surrey, 26 January 2013

After a stroke, Henry was airlifted from his house on the North Cornish coast to the hospital in Truro. When he sat up in bed he called for coffee and his books, and received visitors, shortly before entering the spiritual world on 26 March 2012. He was resolved and ready for the journey through the world of the stars which shine so magnificently on the lands around his home, just a couple of miles south of Tintagel castle.

The planetary constellation at Henry's death was a beautiful sign for his ongoing journey. The waxing crescent moon, just following the spring equinox, was between Jupiter and Venus as an evening star in the west. The expanding year, the beginning of a month, and the moon's movement between these two wandering stars point to our evolution from a cosmos of wisdom towards a cosmos of love.

Ron Jarman, another English colleague in the Science and Mathematical Astronomical section followed Henry into the spiritual world on 12 August 2012. In a remarkable way, the constellations at Ron's passing were a perfect mirror image of those described for Henry. The moon was moving between Jupiter and Venus, this time waning and with Venus as a morning star, herald of the rising sun-sphere, where the good consequences of earthly life will become real being.

Alexander Murrell

Henry once related how as a young man, having just completed his training in electrical engineering, he for the first time opened and read from Rudolf Steiner's *Occult Science*. He said that this experience was as though iron bands, tightly bound around his chest, were cut open and he could breathe.

To faithfully form the written word, as a publisher and as a translator, was for him a sanctified labour of love. Thus he produced in English, works that stand out as stepping stones, some as milestones.

These include: *The Second Man in Us* by Maria Roeschl-Lehrs; *George Adams, Interpreter of Rudolf Steiner*; The articles by Elizabeth Vreede in *Anthroposophy and Astronomy*; The research-commentaries of Paul Eugen Schiller entitled

The Schiller File and from the memoirs of Ehrenfried Pfeiffer: *A Modern Quest for the Spirit*.

He thought, wrote and spoke with concern for clarity and due emphasis and this lived in his fatherly custodianship of study groups on Rudolf Steiner's scientific lecture courses and the meetings of the 'research group' in Devon and Cornwall during the last twenty-five years of his life.

One could say that Henry had a warmth for light, a deep feeling of veneration for the truth and a mind open for whatever the truth may turn out to be. Into the milieu he brought seriousness of heart, sincerity, even solemnity. From him resounded the moral ideal: to further and renew modern science, out of anthroposophy.

With age he became more delicate but nevertheless, once he had settled, then in his word was gravity, especially if it was about Rudolf Steiner himself or the events of that time around him. We listened and were nourished, sometimes quite struck and were left to ponder matters which Henry had in a few words, shown to be momentous.

Thus would appear his warm interest in personalities past and his thorough knowledge of them. I think that with time, Henry developed more and more capacity to openly receive those around him and through this he encouraged us.

Gordon Woolard, October 2012

Obituary

Ron Jarman (17 March 1924 – 12 August 2012)

Ronald Arthur Jarman was born in a poor district of Manchester close to the Belle Vue fairground on 17 March 1924. His father was a state-school headmaster and his mother a strong campaigner for women's rights. Having grown up in a family of twelve and observed her mother struggle, she became a pioneer of family planning and was determined to have no more than two children, Ronald and Maurice. Ronald was the older of the two. After primary school the two boys gained a scholarship to attend Manchester Grammar School and later another to study in St John's College Cambridge, where Ron obtained a Masters degree (MA) in mathematics and mechanical sciences. While at Cambridge he became a warrant officer in the Air Training Corps and rowed as 'stroke' (oarsman) in the Lady Margaret Boat Club. He also enjoyed participating in the College's Round Table Society, which invited famous speakers to lecture and lead discussions. It was war time and on graduating he expected to be drafted into the RAF. However, because he had written an exceptionally good paper for his degree, he was directed towards Rolls Royce Ltd in Derby where he took up a post as an aero engine design draughtsman.

While working in Derby he became interested in philosophy and was often in Derby public library borrowing books on philosophy from the time of ancient Greece right through to Kant. One day he came across a book by Rom Landau called *God is my Adventure*. Among the many 20th century philosophers described in this book, was one Rudolf Steiner. The ideas presented by this man made an immediate impression on him and so he trawled the library for more information and it wasn't long before he discovered Steiner's *The Philosophy of Freedom*. He read this book from cover to cover and found that he could agree with every single word that was written. He then learnt from a colleague that in the nearby town of Ilkeston there was a school that worked according to Rudolf Steiner's principles. So at the first opportunity he went to visit Michael House School. There he met Alan Howard, one of the school's founders and a person who grew to be a close friend and colleague. Alan showed him round the school and also

invited him to join a study group on the *Philosophy of Freedom*. This he did and found it a tremendously enriching experience. He continued participating in this group throughout his time in Ilkeston, working through the book many times. His visit to the school was a decisive moment for him. World War II was now over and he was free to take up work of his own choice. He left Rolls Royce and joined the staff of Michael House School. There he taught mathematics, geography and gymnastics in the middle and upper school.

He had a room in the school annexe where several young teachers lived. About a year after he arrived Stella Harvey took a room there too. She had attended the first Steiner school as a child and came to Michael House to help in handwork lessons. The two soon developed a strong connection to one another. One day he learned that Stella was visiting her family in London and then going on to check out a possible new position with an old friend of hers. That night on going to sleep Ron had a spiritual intuition in which: *I knew that I would miss a great opportunity the next day if I did not arrange a meeting with Stella in London. Although until then I had not had the thought of marrying Stella, I set my alarm clock so that I could meet her on the railway platform at Ilkeston North where her train was to depart at 8.30 am. When we met I told her that I would be going to the Michael Hall Education Conference a few days later, but that on the way back I would like to call on her in London. Stella welcomed the idea and invited me to visit her at her parents' house, which I did. We then took a walk together through Kew Gardens. At one point of the walk I stopped, turned to Stella and asked if she would marry me. She immediately said 'yes', making it possibly one of the shortest courtship completions ever! We got married at the end of the summer term in the Ilkeston church and had a wedding party in the school hall.'*

They got married in June 1951 and bought a bungalow a few miles from the school. This is where their three children, Bernard, Rosemary and Heather were born. Stella devoted herself entirely to the children during this time and Ron taught mathematics and science in the upper school. As well as teaching he became very involved with managing the school. Configuring the school timetable, a complicated affair at the best of times, was for him an interesting challenge and one that he became so good at that it soon became his task! He was also the school's representative on the Steiner Schools Fellowship an organisation he worked with intensively for some 25 years. In the summer of 1962, after 17 years teaching at Michael House, he moved with his family to Forest Row in Sussex and became the senior maths teacher at Michael Hall School. He and Stella both worked at the school for the next twenty years. They lived in Sussex until the children had grown up and left home and then in 1983 they moved to Stroud

While working at Michael Hall, Ron helped Francis Edmunds build up Emerson College and the education (teachers training) course. He became more and more involved in the College eventually taking over the leadership of the Education Course from Francis Edmunds when he retired. The course had by then grown to over 40 students who came from all over the world. He was a much loved and respected teacher who was known for being able to transform an otherwise abstract subject like mathematics into something exciting and relevant. One student reflecting on her time at Emerson, described how one day he brought a branch into the classroom and with a great deal of humour proceeded to elaborate on the nature of one-ness. Then having developed a very wide understanding of the number one, he broke off a small piece of the branch and introduced the concept of two. The student who had pre-

viously learnt to divide things into equal portions, was dumbfounded. She now realised that number does not of itself have anything to do with equality. This was a lesson that made a lasting impression on her. A lot of students had similar experiences and the connections he made with many of them during this time laid the groundwork for his later career as a travelling school advisor.

As chairman of the Steiner Schools Fellowship (now Steiner Waldorf Schools Fellowship) he helped found what later became ECSWE (European Council for Steiner Waldorf Education) which met twice a year in various European capitals and later expanded to include schools from all six continents of the world. His years of practical experience combined with a thorough understanding of Steiner education made him a much sought after advisor on both educational and organisational matters particularly in relation to newly establishing schools. He was invited to visit schools in many countries – USA, Brazil, South Africa, Australia and New Zealand as well as many European countries. He had a particularly strong connection to South America and although he picked up only a few words of Spanish he was able to communicate very directly with the people on that continent. The lively South American temperament appealed strongly to him.

During the 1970s he also served on the Council of the Anthroposophical Society in GB and was for a period its chairman. He gave many inspiring lectures and worked closely with John Davy to heal the historical rift in the Anthroposophical Society.

The move to Stroud in 1983 inaugurated a new period in his life. He continued teaching first at Wynstones and then increasingly as an itinerant upper school main lesson and maths teacher travelling from school to school. His journeys abroad also continued for several years. Then together with his wife Stella, he started a regular weekly study group at their home. This group known as the Stroud Hills Group worked through many of Steiner's lecture cycles including all the Karma lectures. Ron's input into the discussions was always very warmly received. The group continued meeting until they left Stroud in 2009.

In the early 1990s when the ethnic wars broke out in the disintegrating Yugoslavia, Ron was invited to visit the strife torn country by a group of women dedicated to bringing peace. Their movement called 'From Heart to Peace' was made up of women from all ethnic groupings. Ron felt a strong karmic connection to them. He gave talks and seminars on anthroposophy and education in Sarajevo and other towns in Bosnia. Although theirs was a group made up entirely of women, they appreciated his input so strongly that they welcomed him as one of them and awarded him the status of 'honorary woman'.

During this time he also wrote the first of two books on maths teaching *Teaching Mathematics in Rudolf Steiner Schools for Classes I - VIII*. The second *Topics in Mathematics for Waldorf High Schools* was published in 2008. He also wrote a large number of articles for magazines both on education and on scientific topics. As a mathematician he was particularly interested in the ground breaking work of Lawrence Edwards and how bud development could be explained in terms of projective geometry and path curves. He was fascinated too with the planetary qualities of trees and explored it intensively. Beyond this he was interested in all aspects of science and for a long time was an active member of the Science Group.

For many years he had been interested in reincarnation and was able to research the destinies and previous lives of colleagues whom he had known. He developed this ability over many years and already as a young man had an inkling of

some important connections made in a previous life. His meditative work enabled him gradually to perceive more and more. In the end he became aware of eight previous incarnations. He also noted the age at which he became aware of certain connections – numbers always fascinated him – each of the seven year milestones opened new awareness. He was very keen to share these experiences and so during the early years of the new century he undertook a series of lecture tours across the country on the theme of reincarnation and karma. The openness with which he presented his findings required a great deal of courage and was frequently met with a certain degree of resistance but he nonetheless persisted. During a spiritual experience earlier in his life he promised himself that he would abide by certain rules regarding what he presented. One of these was to only speak of the previous lives of those who had already crossed over the threshold. He kept strictly to this rule. In 2009 he and his wife moved from Stroud, first living for a year with their daughter Rosemary in the Hatch Camphill Community in Thornbury. Here they were able to experience first hand the community life of Camphill – they had previously always lived independently in their own house. They then moved to Kings Capel where they were cared for by their second daughter Heather. She cared for them beautifully during their last years and enabled them to live at home right to the end. Stella died in June 2011 and Ron had to get used to being without her after more than 60 years together. His last year was like a time of preparation and a gradual letting go. He loved having visitors and also travelling about the countryside. He gradually had to give up writing and then reading. This was difficult for him since study had been so much part of his life but he was able to accept the situation and his increasing need for care. He died peacefully in the early hours of the morning on 12 August 2012.

Bernard Jarman

Ron was among the founding members of the Science Group. I would welcome any contributions readers would like to submit in memory of his scientific-mathematical work. [Editor]

Meetings and Courses

The Threefold Man and the Animal World

A two part seminar exploring the works of Wolfgang Schad (Author of *Man and Mammals: Towards a Biology of Forms*), Martin Lockley (*The Eternal Trail*) and others.

Saturday 9 March and Saturday 23 March 2013, Stourbridge
Tutor: Dr. Judyth Sassoon.

It is not essential to participate in both parts of the seminar.

Part I: 9 March 2013, 10.00 am to 12.00 pm. Goethe Room, Elmfield School, Stourbridge, DY8 2EA

Introduction to the threefold Man and a presentation of Wolfgang Schad's work. In his book *Man and Mammals*, Schad cast a new and compelling light on the biology of mammals. He built up a new system of mammalian classification based on phenomenology, which is rooted in the scientific method of poet-philosopher-naturalist, Johann Wolfgang von Goethe. Since the publication of that work, other scientists have questioned if the same approach may be applied in the study of other animal groups, including extinct animals such as dinosaurs. In this session we will look into the current research on this subject.

Part II: 23 March 2013, 10.00 am to 3.00 pm. Stourton Farm, Greensforge Lane, Stourbridge, DY7 5BD

Visit to Stourton Farm, Stourbridge for animal observation. We will meet at the farm and, following a short introduction, the day will be spent observing farm animals in the light of

Schad's work. This is an opportunity for participants to actively test the threefold hypothesis and consider its implications. Hardwearing, waterproof clothing and wellington boots are strongly recommended. Lunch will be provided.

For more information please contact Elmfield School: 01384 394633. Judyth Sassoon can be contacted at js7892(at)bristol.ac.uk.

Course: Light, Darkness and Colour – the Process of Creating a Rose Gold Window, with Johannes Kühl

7:00 pm Friday 15 March 2013 to 4:00 pm Saturday 16 March 2013 at Ruskin Mill, Old Bristol Road, Nailsworth, Gloucestershire, GL6 0LA. Friday evening lecture 7-9pm (£8/£5 concessions). Saturday workshop 10am-4pm (£30/£20)

During this weekend we want to pursue the question of how colours arise. In the realm of optics we can achieve quite a clear view on how colour is the result of the interaction of light and darkness together with matter. It is much more difficult however to see how matter becomes coloured. In the workshop we will mainly explore (with experiments) three processes: the colours in life, especially in leaves, the effect of acids and alkalies, and finally how gold can manifest itself as green and rose and thus be used to make a rose window (as was done in the West Midlands).

Dr. Johannes Kühl was born in Hamburg, Germany in 1953. He attended a Waldorf School and studied at the universities of Hamburg and Göttingen (Physics, Chemistry, Mathematics). After one year of research at the Natural Science Section at the Goetheanum he taught high school students at the Waldorschule Umlandshöhe in Stuttgart, Germany. Since 1996 he has been responsible for the Science Section at the Goetheanum, Dornach. He has worked on different themes in Goethean physics – fluid dynamics, electricity, Goethean optics and theory of colours – and is concerned with different aspects of technology. Johannes Kühl is married and has four children.

For more information or to book on the course, please contact Isabel Healy at 01453 837 605 or isabel.healy(at)rmt.org .

Public Lecture: 'Radioactivity', given by Johannes Kühl

7:30 pm Saturday 16 March at Ruskin Mill, Old Bristol Road, Nailsworth, Gloucestershire, GL6 0LA.

This lecture will explore the physical manifestation of radioactivity, its effect on the organism, and its spiritual significance. This lecture is held in association with the Science Section of the School of Spiritual Science.

UK Group of the Science Section

The Science Section for members of the School of Spiritual Science who are taking responsibility for the scientific work normally meets twice a year in autumn and spring.

The next meeting is on Sunday 17 March 2013, 9.00 am to 1.00 pm at Ruskin Mill, Old Bristol Road, Nailsworth, Gloucestershire, GL6 0LA.

Johannes Kühl will be with us. During this meeting we have an opportunity to talk further on the theme of radioactivity, as well as bringing more diverse questions on the work of the Science Section. We would like to hear more about Johannes' current research project on atomism; what is happening internationally with Science Section work, and what are the possibilities in the UK?

There has been some conversation about a longer science conference next year with workshops in various fields of research, which could link up with other areas of work, for example medicine, education, and agriculture.

Further work with projective geometry in relation to the sciences is also hoped for.

Whether or not you are able to come to the Sunday meeting, it would be very good to hear the questions you would like to have discussed regarding the Science Section and our work in the UK.

If you are interested in attending, but do not normally receive notification of Section meetings, please contact Alex Murrell, 26 Arundel Drive, Rodborough, Stroud, GL5 3SH. Tel: 01453 766484 Email: alexander@murrell(at)hotmail.com.

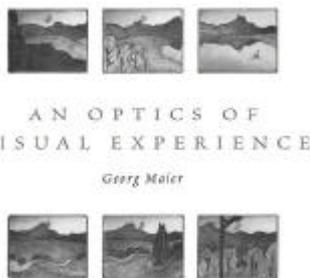
Projective Geometry

A small group meets weekly in Brighton, currently on Mondays, to explore the laws of the space underlying physical and living forces.

Please contact Paul Courtney on 01273 557080 or 07903 961390 or at PaulRC(at)btinternet.com for further details.

Reviews

An Optics of Visual Experience by Dr. Georg Maier, Adonis Press, 2011. 232 pp. \$35. ISBN 978-0-932776-41-9



This book presents a radical paradigm shift in the way we understand and experience the world of light and images. Unlike traditional physics books which explain light as waves or particles outside human experience, this book explains 'images' from the human experience of its inner and

outer perspectives. Drawing on the work of Goethe and Steiner, Maier puts the human being back into our relationship with light and points out how this has an outer aspect in perception and an inner aspect in thinking. The unity of these two he sees as the reality of light and not as some metaphysical reality beyond human experience. Keeping to its own principles, this book is full of pictures and rich descriptions of visual experiences.

The book begins by placing the human being in the centre of our understanding, namely with an exploration of how the human eye is embedded in 'image' or light relationships. Rather than focussing on the traditional understanding of the eye, Maier engages the reader in a wide range of practical exercises that can be carried out by anyone, even without a laboratory. The book does not start with an anatomy of the eye, but with what we experience through the eye. In this way, Maier draws the reader into how consciousness can be intentionally engaged with how we experience the visible world through the eye and discover within ourselves the inner lawfulness of its secrets.

The book then moves onto our visual experience of space. This is not the Cartesian space presented in normal science books, but the rich tapestry of a space enlivened by whole landscapes, skies, works of art and real beings such as plants, animals and other human beings. One can develop a feeling from this approach in which one can sense how, through conscious experience of the visible landscape, our awareness can lovingly caress the rich topology of the world around our eyes. From these sorts of experiences, the more abstract aspect of space is derived and shown to be a part of a greater whole.

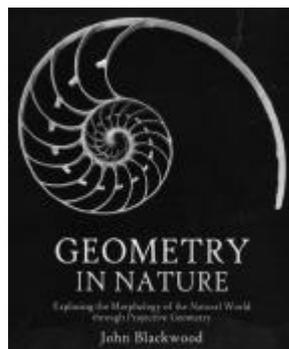
Many topics follow such as mirror images, light as relationships between appearances, shadows, seeing clearly, geometric optics and, returning to the eye, after-images. What strikes one about this wonderfully evocative book is that it is full of rich descriptions that come across as a kind of magic, conjuring up deep inner experiences of the inner world of light and engaging the reader in a holistic experience of light as a being of perception, thought, feeling and will. Through this approach, light becomes re-united with a richer milieu of experience as well as with the world of soul and spirit.

This book would be of interest to scientists, science teachers, artists and anyone who wishes for a holistic experience of light and images and to engage consciously with the world of visual experiences.

Robert Rose

Robert Rose originally trained as an electrical engineer and has a PhD in the philosophy of science. He was a student and co-worker of Georg Maier from 1987-90. He was the modules leader in philosophy and anthroposophy at the University of Plymouth for twenty years. He is currently helping develop a new MA in Steiner Education at Canterbury Christ Church University, Kent.

Geometry in Nature: Exploring the Morphology of the Natural World Through Projective Geometry by John Blackwood. Floris Books, 2012, ISBN 978-086315-921-3, £20 (US \$35) 192 pp.

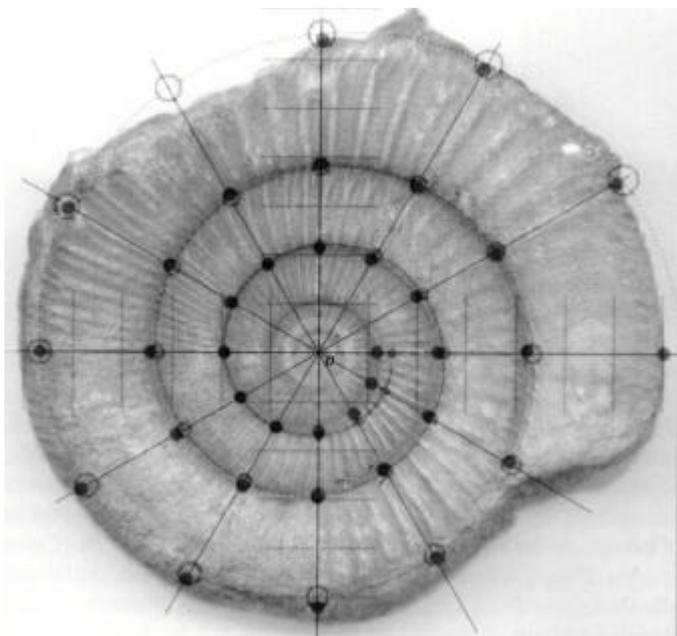


This book greatly extends the work of Lawrence Edwards which he published in *The Vortex of Life* (Floris, 2006) and its supplements. Floris have been generous on presentation with *Geometry in Nature*: it is on high quality satin paper and there is barely a page without several colour diagrams and/or photos. Blackwood's use of colour in the diagrammatic artwork helps one

vividly grasp how the geometric forms are generated from lines and points. It is a beautiful book.

In a brief epistemological introduction, in which Rudolf Steiner's *Philosophy of Freedom* is mentioned, the author states that his approach is to start from projective geometry, from which form and measure can arise, and see whether natural form accurately reflects geometrical form. In the remaining fourteen chapters he applies to the kingdoms of nature as well as the human being many familiar constructions of projective geometry in up to three dimensions. Constructions include for example Desargues's triangle theorem; symmetry; asymmetry; growth, circling and step measure; spirals; vortices; path curves. A wide range of minerals and living organisms is examined, several of the latter being only found in Australia, where the author is based. Some of the more unusual forms tackled are the positioning of spike clusters on a cactus, of nodes on a pineapple and even scales on a pineapple fish (*Cleidopus gloria*).

Glimpses of Blackwood's methodological foundation occur at appropriate places in the narrative. For example in Chapter 3 entitled *Geometric Elements and their Gestures* he begins: 'I want to pursue this thinking with a view to seeing our world, not only from a fragmentary, particle perspective – which is the reductionist malaise – but also from a line-like and plane or surface outlook.' And on page 47 he writes: 'Accompanying the visible is always the invisible, but in our thinking we can begin to see it'.



I quote from the book one image (above) as an example of geometrical curve fitting, chosen partly because its colour presentation shows reasonably well in black and white. It is a fossil ammonite to which an equiangular spiral has been fitted partly by making three estimates: the position of the centre, the points where the 30 degree radiant lines cross the spiral profile and the angle of swing for point/line pairs in the construction. The plot was generated with a computer program. We can see that the result is a fairly good match, as the data points (dots) correspond reasonably well with the coincident or adjacent circles which represent the calculated points of the spiral.

A feature of Lawrence Edwards' work that has always intrigued me is his discovery of correspondences between rhythms in bud shapes, summarised as path curve lambda-values, and certain planetary movements. I was pleased to find in John Blackwood's book a report of his work with oak (*Quercus robur*) in Australia. Rhythmic changes were indeed observed, but, contrary to Edwards' findings, they were not in sync with Moon-Mars alignments.

The high quality of the book is slightly marred by the large number of small errors, most of which could have been detected by the copy-editor(s) at Floris Books. Hopefully these will be corrected in the next printing. If you have the book and would like a copy of my inventory of 22 errors, please email me at the address at the end of this Newsletter.

David Heaf

Publications

Projective Geometry and Line Geometry by Renatus Ziegler. Verlag am Goetheanum, 2012. ISBN 978-3-7235-1358-0 288 pp. 29.00€

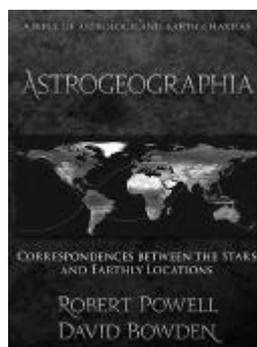
This book is a contribution to visual geometry, mainly three-dimensional projective geometry and line geometry. There may be no better way to get deeply involved in spatial geometry than in exercising the skills of visual representation by the means of synthetic geometry. Thus I have adopted the synthetic method, which forms a characteristic feature of this presentation. In addition, I outline a special approach to Euclidean geometry: this ever present geometry is not conceived as a primitive space form but is consistently treated as a certain kind of limiting case of general projective metric geometry. Not only can this be of practical importance, but also

it will particularly refine and clarify the logical skills and the basic concepts of geometry. In addition, it helps one keep an open mind with respect to new ideas and techniques which might be of significance in the future.

We hope to have a review of this book in the next edition of this Newsletter [Editor]

Astrogeographia: Correspondences between the Stars and Earthly Locations – A Bible of Astrology and Earth Chakras by Robert Powell and David Bowden. ISBN:

9781584201335, Lindisfarne Books, 2012. \$35.00, 326 pp.



'As above, so below' is the foundation of all star wisdom. It was known in ancient times that there are correspondences between the macrocosm (heavenly realm) and the microcosm (human being) and the Earth. Astrogeographia is a modern form of that ancient star wisdom.

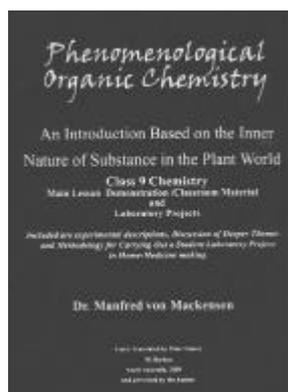
According to the astronomer Johannes Kepler there radiates into the Earth soul an image of the sense-perceptible zodiac and the whole firmament as a bond of sympathy between Heaven and Earth. This imprint into the Earth soul through the sense-perceptible zodiac and the entire sphere of fixed stars is also confirmed through observation.

And Rudolf Steiner said in his course on astronomy, 'We can conceive of the active heavenly sphere mirrored in the Earth.' The authors of *Astrogeographia* set out to determine the correspondences between the starry heavens and the earthly globe – as above, so below.

There are many books on the sacredness and the spirituality of our Earth. Few books, however, deal with the relationship between the Earth and the cosmos, which is the central theme for the research presented in this book. Its point of departure is the one-to-one correspondence between the encircling starry heavens – the celestial sphere – and the sphere of the earthly globe. David Bowden has not only worked out the mathematics of this one-to-one correspondence, but has also written a computer program that applies it in practice. Thus, a new science has been born – Astrogeographia – concerning the one-to-one correspondence between the earthly sphere and the celestial sphere.

Phenomenological Organic Chemistry, an Introduction Based on the Inner Nature of Substance in the Plant World, Class 9 Chemistry by Manfred von Mackensen,

Translated by Peter Glasby. 134 pp. p/b. Pedagogical Section of the School of Spiritual Science, Anthroposophical Society in Australia, 2013. \$25 AUS.



Main Lesson Demonstration with Classroom Material and Laboratory Projects. Through the stellar efforts of Peter Glasby from Australia we now have an English version of Manfred von Mackensen's *Phenomenological Organic Chemistry*, a must have for any ninth grade chemistry teacher.

Included are experimental descriptions, discussion of deeper themes and methodology for carrying out a student laboratory

project in home-medicine making. Contents include: Deeper thoughts on the intent of the curriculum, Stages of Refinement, Combustion, Fragrances, Petroleum, Essential Oils, Anaesthetics, and much more.

Available from: www.awsnabooks.org/store (AWSNA Association of Waldorf Schools of North America). More information from Peter Glasby: pglasby@samfordsteiner.qld.edu.au.

Development of a biocrystallisation assay for examining effects of homeopathic preparations using cress seedlings

In: *Evidence-Based Complementary and Alternative Medicine*. This article is open access and can be downloaded freely from <http://www.hindawi.com/journals/ecam/2012/125945/>.

In Context, The Newsletter of the Nature Institute

No. 28, Fall 2012: Main articles: Toward a Biology Worthy of Life, *Stephen L. Talbott*. Eat to Regulate Your Genes, *Stephen L. Talbott*. Education and the Presence of the Unknown, *Craig Holdrege*.

Editor: Steve Talbott. Single copies of *In Context* are available free of charge while the supply lasts. Contact details: The Nature Institute, 20 May Hill Road, Ghent, NY 12075. Tel: +1 518 672-0116. Fax: +1 518 672 4270. Email: info@natureinstitute.org. Web: <http://natureinstitute.org>. The Nature Institute's online *NetFuture* newsletter is available at <http://netfuture.org>.

Elemente der Naturwissenschaft

No. 97, 2012: Wirkstoffkomposition – die Kunst im Arzneimittel, *Beatrix Waldburger*. Anschauung bei Kant und bei Goethe, *Ruth Richter*. Betrachtungen über den Phosphor, *Uwe Löffler*.

Editorial board: Johannes Wirz (editor-in-chief), Ruth Richter, Johannes Kühl, Barbara Schmocker.

Subscription enquiries to: Wochenschrift 'Das Goetheanum', Abo-Service, Postfach, CH-4143 Dornach 1, Switzerland. Email: abo@goetheanum.ch. Fax: +41 61 706 4465.

Editorial enquiries to: Naturwissenschaftliche Sektion am Goetheanum, Elemente der Naturwissenschaft, Postfach, CH-4143 Dornach 1, Switzerland. Tel. +41 61 706 4210. Fax +41 61 706 4215. E-mail: science@goetheanum.ch.

Cost: Annual subscription (2 issues, including postage): €30.- / CHF 40.-. Single issues: €18.- / CHF 25.- ISSN 0422-9630.

A list of the contents of back issues is available at <http://www.sciengroup.org.uk/elemindx.htm>.

Mathematisch-Physikalisch Korrespondenz

No. 250, Autumn 2012: Ein Strömungswerk zur pharmazeutischen Bearbeitung von Pflanzensäften I, *Reinhard Koehler*.

Subscriptions are SFr 50/€30 per year.

Edited by Prof. Dr. Peter Gschwind, Mathematisch-Physikalisches Institut, Benedikt Hugiweg 18, CH-4143 Dornach, Switzerland. Tel: +41 61 701 5968. Email: p.p.gschwind@intergga.ch.

Wasserzeichen

Nr. 36 (2012): Wasserbehandlung durch 'Vitalisierungsverfahren' (Part 1), *Christine Sutter, Manfred Schleyer, Christian Liess*. Konvektionszellen, *Andreas Wilkens*.

Price €3.00 per issue. Free to sponsors.

Editors, Georg Nitsche & Andreas Wilkens, Institut für Strömungswissenschaften, Stutzhofweg 11, D-79737 Herrisried, Germany, Tel: +49 (0)77 64 9333 0, Fax +49 (0)77 64 9333 22. Email: sekretariat@stroemungsinstitut.de. Internet: www.stroemungsinstitut.de.

Uranos – Steiner online publisher

Original and facsimiles of Rudolf Steiner: unpublished lectures; plain text transcripts; handwritten documents; typescripts; first editions; historic documents (photos, postcards, etc.). Estates (Mathilde Scholl, Paul Ritter, Johanna und Adalbert von Keyserlingk etc.)

The association 'Uranos – Society for the Support of Spiritual Scientific Archives and Publications' supports projects that aim to make available over the internet the work of Rudolf Steiner in as comprehensive and authentic a form as possible and offers technical facilities for interpreting this work. The support involves making available web server space and technical support for accessing it. The Association partly acts as a publisher of internet pages of supported projects, as in the following cases: uranosarchiv.de; steiner-klartext.net; steinerdatenbank.de.

The following independent projects have integrated search functions from steinerdatenbank.de into their internet pages:

fvn-rs.net; anthroposophie.byu.edu.

The Association is recognised as a charity and funds its work through member contributions and donations. More information about the Association and possibilities of collaboration and support can be found at: uranos.de

Contact: vorstand@uranosev.de – Gemeinschaft zur Förderung geisteswissenschaftlicher Archive und Publikationen e.V.

Treasurer's report

Science Group accounts summary for 2012: Income £352.02 (Subscriptions, £304.27; Archetype, £17.00; Other, £31.75). Expenditure £666.46. Balance at 31.12.12: £2,533.94.

Membership

The Group has 48 subscribers. The membership subscription is £5 (UK), £6 (Europe) or £7 (elsewhere).

We welcome the following new member: Desmond J. Cumberland (Surrey).

Members who do not subscribe by direct payments from their bank receive one reminder of a due subscription.

Next Issue

This newsletter is issued to members in March and September each year. Copy for the next issue should reach the editor at the address below by 20th August 2013.

Dr David J. Heaf, Hafan, Cae Llwyd, Llanystumdwy, Cricieth, Gwynedd, LL52 0SG, UK. Tel/Fax: +44 (0)1766 523181. Email: david@theaf.plus.com

Science Group web site: <http://www.sciengroup.org.uk>