

Homeopathy For Plants – Yeah, Right!

INTRODUCTION

The tension in the debate aroused by homeopathy is stretched between two relatively static poles. Around one gather those who have had clear and often dramatic results and who don't care that the overwhelming majority of modern scientists consider homeopathy cannot possibly be effective. The other is home to those who have not had any such experiences and are thereby confirmed in their conviction that there was no possible way that homeopathy could work. 25 years ago I realised that I fretted in a restless grey area between these two islands of calm. I had had a few positive results after using homeopathic remedies on myself and others, but I could not swear for sure that these would not have occurred anyway or that the placebo effect was not in some way responsible for any objective improvement.

All my training reinforced a desire to side with those who were incredulous that any grown up could believe the homeopaths' nonsense. My clear-thinking teachers guided me into and through disciplines which confirmed that homeopathy could not be effective simply because of how the remedies are made. One need not try such things in the same way that one need not head-butt a charging bull to know the general outcome. It was a 'no brainer'. Was I going to abandon clear and rational thinking and go over to those who were surely acting on faith alone - and misplaced faith at that? Had I not heard of the enlightenment? Could one not evaluate the relative merits of faith's abuses and power trips and its malleable wisdom based on dogmatic and nebulous texts, and discriminate between that and scientific knowledge which leaves one free to embrace what is manifestly effective and also to move on as insights evolve. Faith brought inherently unresolvable conflict and slovenly thinking. Science brought clarity both in its method and conceptual tools enabling one to overcome differences with ones peers in a respectful and peaceful way. What are you going to chose in this light? OK, just look at the clinical trials, I was told.

Whilst tempted to move that way, making me look over my shoulder and drag my heels was the sight of all the good people in the other direction. It could not honestly be said that these were all stupid and/or gullible. These were not all the 'worried well' who were unaware of the copious and authoritative literature on the placebo effect. Indeed there have been hundreds of thousands of people, administering, and diagnosing and being diagnosed who were convinced they had been propelled towards wholeness by homeopathy, often after the best efforts of the opposing 'scientific' school of healing had been ineffective. Also making me procrastinate over what seemed a simple decision was the 200 year history of relatively good results and harmlessness: homeopathy compared very favourably with the early attempts of the currently orthodox approach, and also seemed free from the occasional calamities of later attempts – thalidomide etc. Then there were my own experiences with homeopathy: were they really coincidences or the result of the placebo? There was also 'Herrings law of Cure' the absence of which played its part in winking me out of my medical training. Only later did I find that this was an insight of Hahnemann's that had been given form by one of the many doctors who came to discredit, and stayed to learn and practice. But if I asked the convinced how homeopathy could possibly be effective the answers were not up to scratch. OK, there was Hahnemann's 'law of similars' which I found satisfying: its roots stretched back via Hippocrates and

the Vedas into the mists of time and formalised common-sense confidence in the ‘hair-of-the-dog’. But if this was supposed to hold good towards and over the Avogadro threshold I was very sceptical. OK, just look at the clinical results they too urged me.

So let’s consider the issues one more time from the no-mans-land between these factions, and then I’ll tell you what I’ve done to try and bring resolution. First, the history.

HOMEOPATHY



The German physician, Samuel Hahnemann (1755-1843), was not convinced that what he was trained to do was helping anybody. He was so disillusioned that he stepped back from practice and turned his talents to translating medical texts. A decisive moment occurred when he was translating Cullen’s *materia medica*.¹ Hahnemann was interested to see Cullen’s description of a Peruvian tree whose bark was used by the natives to protect themselves from malaria. The Peruvian Bark or Chinchona tree might help malaria sufferers but it was also clear that when the unafflicted took it they developed symptoms very like malaria anyway: rounds of intermittent high fevers with drenching sweats followed by penetrating chills. The

symptoms induced in the healthy were similar to those that were cured in the sick. Was that a coincidence or was this a specific instance of a general principle? History shows that Hahnemann considered Peruvian Bark to be his first meeting with a law which he formalised as *similia similibus curentur* – usually translated as ‘let like be cured by like.’ In 1807 he named the discipline based upon this motto, ‘homeopathy’ which could be translated as ‘matching suffering’. This was one of Hahnemann’s discoveries but, as we have mentioned, this was probably actually a rediscovery.

His second and more relevant discovery does not have an obvious precedent but he was lead towards it as a corollary of the first. Logically one would want to populate a homeopathic *materia medica* with substances that caused symptoms but these already have a very serviceable name: poisons. Indeed Hahnemann got a lot of his early information from descriptions of poisonings. Remember the surgeon’s dark humour: “The operation was a complete success but, unfortunately, the patient died.” It is no good curing a person by killing them with poison so one must reduce the dose to something that can be tolerated. Hahnemann did this by taking a certain amount of the original herb or compound and putting it into solution in alcohol and/or water to make the ‘mother tincture’. He mixed it up and then took a fraction of this solution and put that into another bottle, topped it up with fresh water/alcohol and shook (‘succussed’) it again to create his first potency. This dilution and shaking can be repeated, in theory at least, *ad infinitum* and in practice people seem to have given it a pretty good try. The series of dilutions is regularly hundreds of bottles long, and some substances have been taken to the millionth potency – a lot of glassware! These incredibly

¹ A *materia medica* is a catalogue of medicinal substances with the illnesses and syndromes that each was thought to address. (One could say that this role is now, in the UK, taken on by the BNF – the British National Formulary.)

diluted remedies are still given to patients and are said to be effective. Whilst overdosing is certainly addressed, a whole new problem arises.

We can address this by introducing Avogadro, a contemporary of Hahnemann's, whose work brought a practical side to an ancient thought-experiment. Democritus (b. ~ 460 BC) wondered whether one could cut a rock indefinitely ie, if the practicalities of knife sharpness and acuity of eyesight were ignored, could one cut bits of rock for ever or would one get down to a basic indivisible bit? Democritus was of the opinion that these fundamental particles or atoms – named after the Greek for *not cuttable* - do exist, and that their varying geometrical properties result in the different substances.

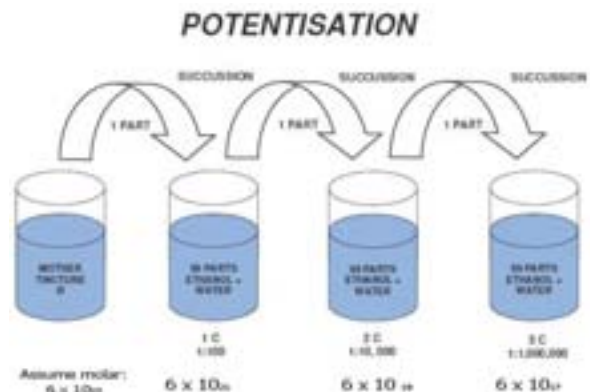


Lorenzo Romano Amedeo Carlo Bernadette Avogadro di Quaregna e Cerreto was born twenty-one years after Hahnemann. Avogadro's work helped differentiate atoms from molecules. Shortly after his death his work was recognized, and 40 years later when Josef Loschmidt estimated the number of these smallest defining units of substance in a 'mole' or gram-molecule (thus enabling chemists to weigh equivalent reactive amounts of substances of different atomic mass), this value was named in Avogadro's honour. If one has a molar concentration of a substance, say 58.44 grams of sodium chloride in one litre of water, there will be approximately $6.02214179 \times 10^{23}$ salt molecules in that litre. Back to Hahnemann...

Let us suppose, for the purposes of illustration, that Hahnemann's mother tincture of the major homeopathic remedy *natrum muriaticum* - as salt was called when Latin was the language of the formally educated – was molar. (Incidentally this shows that Hahnemann's process of potentisation was able to develop a useful remedy picture from non-toxic materials.) Hahnemann often diluted his mother potencies a hundred-

fold to make the daughter potency so although his first bottle of mother tincture would have around 6×10^{23} salt molecules in it, the second would have only about 6×10^{21} salt molecules, the third bottle 6×10^{19} and so forth. At the 12th bottle, assuming scrupulous pharmacy protocols, there ought to be just a handful of salt molecules left. The 13th will probably not have any of that salt at all, and the 14th would have only about a 1:1000 chance of having any of the original substance left in it. This twelfth centesimal potency (12C) marks the stage at

which the Hahnemannian process of potentisation becomes fundamentally incompatible with the orthodox understanding. At the higher concentrations, from the first bottle or mother tincture to the 12C, the debate is dominated by the evaluation of clinical results. Beyond this 12C potency the tussle is re-invigorated. Even the homeopaths agree that there will be none of the original matter left in the remedy given to the patient. A recent vocal anti-homeopathy group calls itself 1023 to emphasise how stupid homeopaths must be not to understand the implications. 'It's impossible' they assert. 'But it works' the homeopaths retort. With this stalemate the entrenched boundary between 'sound science' and homeopathy found its location.



The two camps are still hurling invective over my wishy-washy head with rare instances of courteously restrained debate to see if there has been any movement in the opposition's stubborn stance.

Although I have only focussed properly on this aspect of the debate over the last decade, my adult life has not strayed too far from it. I trained as a homeopath after dropping out of medical school but by the time I finished my training I was designing and making ecological water treatment systems. However, in the same period around 25 years ago, my interest in water brought me to Flowforms² and then to biodynamic agriculture as part of an active search for ecological sanity within our destructive culture.

HOMEOPATHY FOR PLANTS



Like homeopathy, biodynamic agriculture (BD) uses substances in infinitesimal quantities, but these are sprayed on soil and plants or put in compost heaps, and not administered to people or animals. There are many aspects of BD that are troublesome to the modern scientific mind. Indeed much of the practices appear so weird that many people do not get beyond the first shock. BD growers use the 'preparations' after instruction from Rudolf Steiner in 1924, and his eight agriculture lectures don't show enough of his thinking to be self-explanatory. Herbs, manure and crushed crystals are put into parts of a dead animal (stag's bladders, cows horns etc) and buried for a few seasons before being exhumed and used in minute doses!! Two of these biodynamic preparations are sprayed over crops after being stirred in alternating directions for an hour in plenty of water.³

My early exposure to BD was influenced by loving the food and the care brought to the garden, and by the community that had grown and grown up around the farm and garden where I first met BD. Although the activities seemed to be like something out of a pantomime or the 'new age', they were undertaken soberly and thoughtfully by grounded people. I know such things are not pertinent to a scientific evaluation of a technique but I tell you this because they are some of the biographical reasons that carried me over the shock to become involved in BD. Added to these social lures was a hope that if I read and understood these lectures and hung around long enough, I might find some answers to the enigmas of homeopathy from what I sensed was an agricultural cousin focused on the health of the natural world. I hoped that these two eccentric traditions would illuminate each other. Whilst my head was initially nonplussed, my heart was quickly and increasingly attracted to find out what on earth was going on.

I was also interested to see that Steiner had given other lectures after being invited by doctors and medical students to address them about the implications of his general approach within the healing arts. In these lectures he discussed various homeopathic

² See, '[Flowforms, Human Waste, the Universe and Everything](#)' by the author. ISBN 0-9517890-1-5

³ Some clarity in terminology may be useful. When BD growers stir their field sprays this is called dynamization. This could also be used as a term for each shaking in the making of homeopathic remedies but this is widely called succussion so we will stick to that. Potentisation takes a substance up a scale of potencies as already described.

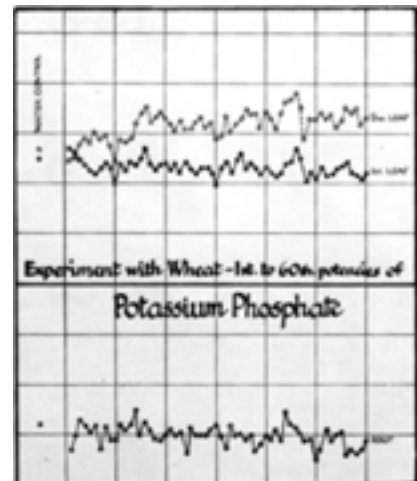
remedies within a systematized framework. Furthermore, Steiner had guided some of his contemporaries to potentise various substances in a Hahnemannian way and apply these to plants. Together, these struck me as being potentially fruitful for addressing my fundamental questions. Firstly, working with plants would remove the uncertainty of subjective results such as are thrown up by the placebo effect. Second, it gave the possibility of multiple replications enabling statistical analysis, free of the procedural and ethical issues that go along with human and animal testing. Third, if Steiner's clues and intimations were right, he was proficient in a systematic approach to the preparations as opposed to relying on trial and error alone. Homeopathy has its *similia* principle but a new substance needs a *proving* to reveal its uses. (To the chagrin of the modern objectors it has to be admitted that homeopathy is, if nothing else, evidence based!) Just below the surface of biodynamics is the hint that one could observe the form of, say, a plant and by understanding the metamorphosis⁴ of its developing form one could, in theory, have a pretty good idea of its medicinal properties. In short, all the best bits from the science camp could be brought to bear on the homeopathic-biodynamic world so that one would not need to 'believe' in it. It would be a critical as opposed to a dogmatic discipline, leaving the practitioners free and creative to address our urgent ecological issues with non-polluting tools.

THE KOLISKOS: DOES IT WORK?



The results of the co-workers who potentised Steiner's biodynamic preparations from the 1920s onwards were published in a book called 'Agriculture of Tomorrow'.⁵ What was outstanding was the work that Lily Kolisko had done, even if we just stick to the efforts expended upon what were called the 'smallest entities' and ignore the equally phenomenal work on crystallisation and quality testing. Here was someone who had developed tests that revealed how potentised preparations affect germinating plants and seedlings. This enabled relatively quick feedback – in weeks rather than months. The results were shown in graphs of plant measurements plotted against potencies on either

side of the Avogadro threshold. Thousands upon thousands of experiments with replications and controls were the fruit of her sustained and focussed activity over 20 years. This priceless treasure is all the more remarkable because Lily and her husband Eugen were interrupted by the inconvenience of escaping the Nazi's and settling in the UK. Just as WWII was unleashed between her adopted and native countries and as her husband died young, Lily wrote her book across the River Severn from where I am sitting now. She continued her labours there until her death in 1976. Respect is due.



⁴ See JW Goethe, 'The Metamorphosis of Plants.' My favourite edition is by Gordon Miller and published by MIT! ISBN 9780262013093, and 'Metamorphosis: Evolution in Action' by Andreas Suchantke. ISBN 9780932776396. Also see later in this paper.

⁵ ISBN 0906492009. This book is now out of print and second hand copies are rare and expensive. However, it can be accessed via the [Holistic Agriculture Library](#).

It seems petty to find fault but the issue relevant to the current subject is that although the graphs remain, the data from which these graphs were plotted do not. This means that no one can check whether the results are statistically significant. As far as resolving the debate between the homeopaths and theoretical scientists her work is holed beneath the water line. Whilst ‘Agriculture of Tomorrow’ shows that potentised preparations – even over the Avogadro threshold – affect plants in a regular fashion, this cannot meet the benchmarks of statistical proof due to lack of evidence. Lily’s work can be used as part of the peace talks but one should not expect it to be the definitive piece of evidence.

So I started to do some of my own experiments. The only unambiguous result was that my admiration for Lily and Eugen’s work multiplied significantly. It is not easy to do even one test thoroughly and convincingly whilst bringing up a family and doing ones day job. That Lily did this ... wow! I quickly came to the conclusion that I was not going to be able to nail this issue alone and lapsed, temporarily, into impotent inactivity.

PEERS: DOES IT WORK?

As I was digesting the pre-war work the internet began to stumble from geeky academic beginnings to popular and simple access. An English-speaking discussion group formed concerning itself with biodynamics⁶ and a few things dawned on me. The first is probably not unique to BD but is characteristic of communication between farmers and gardeners in general. There seems to be a great hunger for communication but spending all God’s hours working in the fields and gardens amongst Nature’s many



ever-varying factors makes growers reluctant to come to firm conclusions and then to share them. The stereotype of the heavy-booted taciturn farmer trudging contemplatively after the cows is not without foundation in my experience. But get a few of them together at the market and a strange rumbling noise will rise from beneath the hats into which everyone is listening with great focus. ‘What did you do for the mastitis? How’s the turnips his year? Did you try that thing you tried last year again? What happened this time? ...’ The internet is brilliant for such growers. You can just listen, or occasionally drop in a timid word. You can put forward an outrageous and essentially anonymous hypothesis with a confidence you do not really possess in order to try and flush out some thoughts about what is really bothering you – all in your jimjams once the chores are done for the day. No one need know if you are stunning or hideous, male or female, smell of fresh hay or old bedding. In some ways, for many growers, the net is an improved version of leaning on the edge of a pen at the market and wondering how to admit you are stumped by the many draining demands of agriculture, all without losing face with your neighbours.

⁶ [Biodynamics Now!](#)

So I had found a garrulous community of BD practitioners who shared stories of their successes and failures. Here was an informal and international nucleus of BD growers who might conceivably pool energies and amass evidence in relation to the questions that troubled me. Simultaneously it would be possible to see which of these stories of success might be useful to anyone else.

CONSIDERA: TWO SLUGGISH DATABASES, ONE ACTIVE

So I took a gamble and my family and business partner supported me in reducing my other work to concentrate on the questions that homeopathy and biodynamics stimulate. The fates have been good to us and the money is only just running out now, almost a decade after making this the primary focus of my working time. What has emerged from this period are several pertinent publications⁷ (mainly translated rather than my own) and a website based around 3 databases⁸ which can be found at www.considera.org.



The first database I put together collected results from planting by the Moon, planets and stars – the heavenly bodies! What has this to do with homeopathy? I hope this will become clear by the end of this article, but in the early lectures of his Agriculture course Steiner suggested a key to this ancient and once-ubiquitous practice. There has been a lot of research on this since and the main researcher in this field is Maria Thun – another BD heroine. However, her efforts are not always replicable and when one looks

into planting by the Moon one finds lots of contradictory but firmly-held convictions. It occurred to me that much of this disagreement might resolve if we didn't just buy planting calendars - the results of people's conclusions - but actually had the 'raw data' from the experiments. If we knew what was done and when and knew the characteristics (weight, taste etc) of the plants that emerge from all these experiments, then we could put all these results together and analyse them by computers. Looking for patterns in stacks of data is a computer's strength. One researcher may have concluded that the plants respond to the synodic cycle – full and new Moon phases – whilst another might find greater yields of roots when the Moon's arc across the sky is getting lower night by night, and of viable seed if the Moon's arc is rising. But if we had the raw information it is conceivable that we would find that the correlation was much greater when compared with the activity of, say, Jupiter. This would be a step towards transparency and bring credibility to the discipline – and it would be cheap and organic if the world were sufficiently impressed to adopt it. It might even be used to anticipate future issues, and successful projections based on statistics make a discipline eligible to be considered a science. Win win win win, I thought.

⁷ www.moodie.biz

⁸ A database is a collection of information that can be arranged, searched and extracted in various ways. Cullen's *materia medica* was a good example of such a database although it lacks the flexibility of the modern digital equivalents.

I asked the people who had compiled the digital Swiss Ephemeris if there was a way to do this ‘reverse astrology’ – one which went from data to heavenly correlations (if not causes) rather than from star-chart to prediction – and although they thought this would be possible, no one was then available to do the work. However, they pasted my query onto their bulletin board and I got an answer the next day from Tallinn from someone who had been, ‘wondering that morning if plants responded to the constellations’ or some other segmentation of the starry background to the wandering stars. What is more, Abhi was already working on reverse-astrology algorithms. If I was wasting my time the fates seemed to want me to waste it thoroughly. Abhi and I put the first iteration of the Considera project together. It was quite a buzz.



Around the same time I did a proper experiment with the assistance of my wife and her dad. We already rented some land for our community composting scheme. The operation did not use the whole area so when my ‘in laws’ came to live near their young grandchildren, Grandad Billy used some of the compost to grow veg in the same field. (The inflexible and short-sighted regulations, brought in after the UK’s foot and mouth and BSE epidemics, closed us down. This is barely related to the subject in hand except it is the reason there was so much compost available, but I am still frustrated that a beautiful thing was crushed as it was coming into its prime. But I digress...) An eclipse of the Sun was scheduled to occur on March 29, 2006 at 10 am. So every day at 10am between

March 26 and April Fools day (I kid thee not) we planted two rows of 22 seed-potatoes in the soil enriched with the compost we were now forbidden to sell. We sprayed the area with a potentised BD preparation called E1⁹ and stood back. Very soon it was clear even to a cursory glance that the potatoes grown before and after the eclipse rows were doing much better than those planted on the 29th. We harvested in August and the yields from those grown on the 28th and 30th were both one and a half times greater than those from the 29th. I felt that we were on to something.



However, this part of the project does not seem to have caught the public imagination so, to some extent, we can call it a failed initiative. The second database had a similar fate: this involved a simple nudge of the existing software and interface to make it fit for weed and pest control experiences. Both are still accessible and although there have been some noticeable results, the servers have never been in danger of crashing due to the traffic. Hey ho.

⁹ See <http://www.considera.org/materiamedicagricultura.html?remtype=2&rem=80>

As I settled into the demands of this project and by digging into the coffers again, we designed a third database. This was intended to address a third defining technique of BD which is the use of the biodynamic preparations. One of the great examples set by homeopathy, as a collaborative discipline as opposed to as a scientific enigma, is the homeopathic *materia medica* and its accompanying *repertory*. The homeopathic *materia medica* for humans was originally populated by observations of poisonings. Later the symptoms induced by other barely toxic and even seemingly inert substances like silica were added through an experimental process known as *provings*. Finally, symptoms which were not evoked but which were regularly found to be cured were added to assist the practitioner to find the right remedy or *similimum* for the person who had come for healing. For over 200 years homeopaths from all corners of the world have collaborated to build up this freely accessible heirloom as a commonwealth for all practitioners present and future. If this were a software programme it would be called ‘open source’. It is the Linux process as opposed to the proprietary OS process which is more analogous to the practices of pharmaceutical businesses. Everyone contributes to it and everyone gets to use it if they agree not to misuse it. It was this model that appealed to me and I just needed to take a deep breath and contemplate creating an appropriate interface.



Again the fates seemed to want to hang me for a sheep rather than a lamb: the search engines showed that there was already a format including some data for such a thing, at least in someone’s private papers. At an international permaculture gathering Ben Rozendal and Eric O’Gorman discussed their ‘Similicure’ initiative which had great results from using homeopathic remedies upon plants. It took me a lot of Googling before I could find Ben since he usually works under the name given through his spiritual tradition. However, I found a blog by a veteran of the 1992 Gulf war who was suffering from his wounds who described how he had been greatly assisted by a homeopath who had reduced the scar tissue with the remedy *silicea*. The homeopath was the same Mr Rozendal. After a few emails, a phone call, and a meeting in Amsterdam we agreed to polish and publish the youthful *materia medica* Ben had developed for plants. The book emerged as ‘Homeopathy for Farm and Garden’¹⁰, and Ben’s *materia medica* primed the pump of the third Considera database – the *materia medica agricultura* and the *repertory* which accompanies it. A *materia medica* lists each preparation with the symptoms which it addresses. A *repertory* lists each symptom and all the preparations which address that symptom. One could say that they are indexes to each other. Which you go to first depends on whether you have symptoms or preparations to consider. We built the database structure and then the web interface so any English-speaker can add their own experiences. What is more, whilst Ben used remedies from the homeopathic pharmacopoeia, we could use the same structure for adding experiences of the BD preparations and ‘magic potions’ from different traditions and businesses¹¹. I laid

¹⁰ [Homeopathy For Farm and Garden. VD Kaviraj. ISBN 978-0-9517890-5-6](#)

¹¹ One of the many unforeseen benefits of the work was finding that there are small companies and academic researchers around the world who have tried potentised materials on plants. See www.considera.org/hrxclassic.html and the [literature survey](#) .

down only a few conditions for collaborators. Those who contributed to the database had to affirm they would ‘do my best’, any preparation had to contain infinitesimal to zero substance, the reports must be of what had been witnessed personally and were not hearsay, and the reports had to have an absolute minimum of esoteric or other jargon in them. Anyone with basically healthy sense organs and reasonable common sense had to be able to understand what was written or to find definitions in botanical and horticultural texts. Reports must be clear, pithy, and in English. Commercial companies agreed to have their own input differentiated from disinterested contributions, and agree to avoid advertising and disparaging any other products. By and large people have stuck to these terms.

A final benefit was that one could add information from publications so that authors, even dead ones, could contribute their experiences. Their input too would be linked to the author and/or source. All this built up a picture of what indications called for the application of the various remedies. Digitally competent growers could contribute directly to the project, whilst those who do not get on with computers – and there are many – could write up their experiences and employ the postman so I could add them to the database. The chat over the virtual farm gate could now be gathered into a useful collection of anecdotes.

ANECDOTE AND EVIDENCE

There’s that word again. The homeopathic tradition greatly values anecdotal evidence (as do farmers incidentally) whilst the guardians of science are very wary of something with so little scope for meaningful comparison. The homeopaths say that each situation is essentially unique so that replications and the use of statistics is not so straight forward as it is when the goal is to isolate a single variable and test the impact of a carefully controlled intervention. If we ‘merely’ measure the presence of a specific pathogen in a blood test as an indication of success we can find what is toxic to that bloodborne organism and administer it. By the criterion we have set ourselves, getting rid of the bug is to cure. A homeopath will say that the state of health of the individual has enabled the ubiquitous pathogen to multiply and become problematic and whilst killing that pathogen might relieve the symptoms, it has not necessarily addressed the more fundamental situation that enabled the pathogen to proliferate in the first place. In order to do that one must not focus on the pathogen so much as on the host organism – the person – and see how this particular person responds to the outbreak¹². One person may become weepy and crave company, whilst another would become taciturn and seek solitude yet both have the same organism shown in their pathology report. A doctor should probably give the same medicine to each, and a homeopath probably should not. The doctor can rely on the antibiotic that statistics show has killed these bugs in most people. This statistically supported medicine is totally justified within the medical paradigm. What is common to the population as a whole as indicated by the statistics shows the right way for the doctor to proceed. What is gold to the homeopath is what is unique, what is different from the others

¹² One is advised to look up from the parasitic pathogen to the host organism and attempt to regenerate wholeness there, and even to ‘zoom out’ further to the greater context and remove any maintaining causes there. If one is drinking contaminated water or has been shot these are the issues and homeopathy’s potential to heal is certainly not then the first step towards healing. This use of the ‘macroscope’ to complement the use of the ‘microscope’ is another instance of the approach to the issues addressed towards the end of this article.

who have the illness¹³. This challenge of individualising is partly responsible, in my opinion, for the fact that the homeopathic prescription is not so regularly ‘effective’ as an antibiotic. Compounded with the homeopaths’ assertion that their discipline actually cures and that antibiotics only bring short term symptomatic relief – sometimes very welcome and appropriate nevertheless – one can begin, at least, to understand why homeopaths claim to have a more difficult and involved task.

Back to plants. The Considera *materia medica agricultura* is also very happy to have anecdotes for these reasons and, frankly, because there is not much more around. More positively it is a assumption/prejudice of mine, one in which I hope to be humoured, that farmers and gardeners are best qualified to see what is really happening in their gardens and farms, and they are not easily excited to make claims. If they apply a preparation and something clear emerges then let’s share that information. Time and repetition will edit out erroneous or partial observations and highlight which are more widely useful. This welcome to the amateur and the lack of ownership of the information is why I call this ‘democratic research’.

Don’t get me wrong, the *materia medica* also contains results from well designed trials containing ‘controls’ undertaken by disinterested professionals, but to restrict input to those that meet this ‘gold standard’ would not only be discouraging and disempowering for amateurs, it would defeat another purpose of the project. For the purposes of this article, the first goal might be to accumulate an overwhelming body of robust evidence to be plonked, like a petition, on the iconic materialist scientist’s desk in the hope of being persuasive that potentised substances do work on plants. In practice this is a rather abstract aim. The more pertinent aim is to assist those who use potentised preparations to do their work more effectively. It is an internal educational service in the agrohomoepath’s camp rather than a tool for convincing anyone else. Biodynamic growers have a ‘big picture’ into which the preparations fit so one would hope that by thoughtful analysis of the situation in front of them a logical and specific course of action would be chosen. My experience is that their preparations are frequently applied by rote in the vague hope that something or other positive will occur. It is my opinion that the major beneficiaries of the *materia medica* will be those who wish to understand the appropriate circumstances for using each specific preparation and, if this is the case, the *materia medica* should in turn benefit from contributing to more successful trials and thus a more convincing and assuring case to present to the open-minded grower. Either one can spray BD 500 and 501 once and at some arbitrary point in the season so that the certifying authority is appeased, or one could see what kind of season one is having and find a balancing spray to bring the situation towards the favourable situation for the crops. Those who wish to make best use of the (non-polluting) potential of BD and agrohomoepathy would do well to observe the scientific process and learn from what is instructive – and in fairness, there certainly are those that do. Whether the scientists would do well to reciprocate in some way is another story, so let’s get to that question now: Do the scientists have something to learn from the homeopaths and in particular from the agrohomoepaths?

¹³ The SRPs – the *strange rare or peculiar* responses of the organism - are usually the important clues to the homeopath. There is an overlap: the homeopath will have ‘*specifics*’ and the ‘*genus epidemicus*’ which is prescribed if the symptoms dominate the picture in all patients. Thus, if there is an epidemic of cholera, the best remedy’s picture will include the rice-water stools and emaciation and dehydration. That will give a good indication for what remedy is likely to be effective in most cases. In such situations individualising is not a good use of time.

‘PROPER’ EVIDENCE?

Let's first offer some inducement to even the most fervent homeopath-bater. I mentioned earlier that the *materia medica* is not solely populated by 'mere' anecdotes. Part of what spurred me to create the third database was that I heard of an independent and well-respected laboratory that had done some testing in 2002 and that the agricultural preparation that gave the best result was a potentised BD preparation. I have written about this elsewhere¹⁴ but, in brief, some fruit growers of North Island New Zealand lost a significant proportion of one year's crop to frost. Many fruit trees flower even before the leaves emerge at the start of the season whilst a majority of annuals germinate, put up leaves and flower only later in the season. So



orchard blossom is particularly vulnerable to winter weather hanging on into spring. The late frosts hammered NZ in September-October 2002 so the growers got together to see what might be done. HortResearch, an independent and respected laboratory, ran tests on various sprays because the fruit industry is already set up for spraying. The spray that enabled most fruit to grow was Warmth Spray - now called ThermoMax¹⁵. This spray contains three BD preparations that have had homoeopathic-style potentisation to focus their effect. This is not

yet the full gold-standard of evidence because there were not enough replications to make this test statistically significant. However, ThermoMax has sold increasingly well ever since and not just to those already convinced about BD. Commercial orchards that use chemicals also use this stuff because it does what it says on the tin. Businesses pay good money year after year to protect their crops from late frosts over thousands of hectares using ThermoMax. The maker of this preparation, Glen Atkinson, is most thoughtful in his procedures. He has also blended the BD preparations at different potencies to achieve other aims: increasing photosynthesis in dull seasons, stopping fruit from splitting in the maturation phase but still enabling the sugars and the dry matter to increase, reducing bird damage on fruit, and reducing smells and crop-burn from slurry - and more. Some of the confidence to assert this comes from experienced growers who are willing to pay, and some from professional laboratories who do nothing else but evaluate what 'plant protection products' actually achieve. These tests are not cheap to run and for a young industry of self-employed researchers/entrepreneurs rather than multinationals or university departments these are serious barriers to providing more of such 'gold-standard' data.

However, a major spur to write this piece now (November 2010) is that there has been a recent result that seems to meet the gold-standard for impartial expert-run experiment-based evidence which should, therefore, be of interest to all scientists no matter what their initial inclination. Pakistan has a predominantly agricultural economy based around wheat and cotton. In the growing seasons of 2008 and 2009 a homeopathic preparation, way way beyond the Avogadro threshold¹⁶, was tested by a

¹⁴ <http://www.moodie.biz/thinking/PotenciesAndScience.pdf>

¹⁵ [See ThermoMax's entry in the materia medica](#)

¹⁶ Various substances are in the preparation between 200C and 500C. The preparation is now able to make claims on its labels and is called Ventage. I am very interested to see how it does on the market place. For more see <http://www.considera.org/Iftikhar.html>

coalition of the testing houses, research authorities and government regulators on various strains of cotton to see if there was any impact on mealy bug infestations. The potentised candidate was tested at the same time as the standard neonicotinoid called thiomethoxam and a water control. The results were given as a percentage reduction of nymph and adult mealy bugs compared to the control at 72 hours and one week after a single application. In 2008 the neonicotinoid gave reductions of 99% and 90% (adult then nymph) after 72 hours. A week after the spray results were both 99%. The homeopathic preparation gave results of 98 and 98% at 72 hours and after a week the results was 100% for the adults and 99% for the nymphs. In 2009 the chemical gave 72-hour results of 98 and 93 percent and 97 and 99% after a week. The equivalent reductions from the homeopathic preparation were 86 and 89%, and 95 and 98% 4 days later.



Perhaps, after all these words, we should pause to emphasise this: a preparation that has been diluted out of conceptual and measurable existence has been shown to be highly effective on organisms that should not be susceptible to the placebo effect, and this research has been conducted by the experts and regulators in field-trials over two consecutive seasons. If all is as it appears to be, and I have no reason to suggest otherwise, this is relevant to my struggle and - I would hope - far and wide beyond. As well as being a

leading candidate for ‘proof of concept’ for agrohomeopathy and perhaps, by extension, to biodynamics, should this not stimulate researchers all over the world to look into the possibility that the way towards cheap and non-toxic agricultural interventions was actually right there in the camp their education taught them to ignore? This report is a world-moment if it is what it appears to be.

The sense of security upon which the scientists found their scepticism of homeopathy is like a stool with three legs. The first is made of rational scientific reasoning and the second is forged from a perceived lack of permissible evidence. The last is constructed from an alloy of instinct, common sense and prejudice in proportions determined by the individual concerned. I would suggest that this should at least make them stand up and check that the ‘evidence’ leg is secure beneath them. All may be well but will they not be stimulated to check? Is it not due diligence in their field of expertise? Indeed let us now see if we cannot induce them to reassess the soundness of the leg of reason while they are up.

HOW CAN HOMEOPATHY WORK?

Of the three questions that normally arise when homeopathy is discussed – what is it, does it work, and how the hell does it work??? – the first two have now been addressed. What about that last one? Actually, the question of how the preparations can possibly work is potentially the most interesting for me, though I do not expect everyone to share my enthusiasm. Those who are convinced either way don’t seem to feel the need for any explanation. But for those like myself it is a central question both for the credibility of the whole concept and for the development of the discipline.

Upon it depends the potential for rapprochement between the camps and thus the possibility of concerted effort, proper budgets and peer scrutiny with the goal of an effective and non-toxic agriculture. But a fuller conceptual appreciation also brings with it the possibility of bringing excellence to every facet of manufacture, quality control, diagnosis, and application of the products. It should contribute to recognition of what other approaches to agriculture are compatible and which are inherently obstructive. With such possible prizes I think it deserves our best efforts to remove this last and most obstinate stumbling block to acceptance, and we can approach this by listening to the clear thinkers amongst those who oppose homeopathy.

Trawling through YouTube, one can find champions of our culture like Dr Jonathan Miller saying things like (paraphrase): “If homeopaths are right everything we ever thought we knew is wrong”. Richard Dawkins, paraphrased again, said: “Until homeopaths show me the new law of physics they have discovered I will not waste more energy on the debate.” Neither are as funny as Mitchell and Webb or Tim Minchin, but they are both admirably blunt and pithy and I do not doubt their sincerity (– an evaluation which I find more difficult to extend to James Randi).

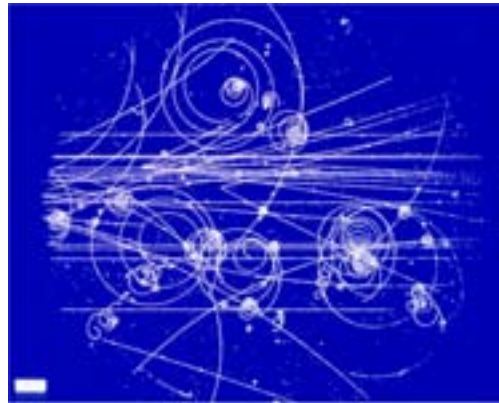
Their thoughts define a clear target: can one offer a hypothesis for peer consideration that can be understood (we wish to be rational and systematic), is plausible (we need to avoid wearing out any welcome we might receive with outlandish speculation) and is testable (it should not be a sterile dogma)? The hypothesis would address the concerns expressed by Miller and Dawkins and those for whom they are *de facto* spokesmen, and it should be based on a viable and consistent epistemology (paradigm). It must avoid postulating an interfering but transcendent reality. Ideally it should not only throw light on potentiation but on other modern enigmas, and not contradict the well-considered laws of the existing scientific orthodoxy.

Well, call me an arrogant dilettante, but I think we can give this a reasonable shot. There are several routes in to this but I will try and take one which leads from where the physicist is confident and move out into new territory bit by bit. Those with the credentials and good will to consider this properly are then invited to judge for themselves whether it is a contender to throw genuine light on all we have discussed so far. I do not pretend to speak for anyone but myself although almost everything below comes from ideas I have absorbed from others. No doubt I have misunderstood or will poorly communicate things in part if not in some essential aspect, and some penetrating questions would have to be passed on to others more on top of their brief than I. Having said this let’s try unscrewing the inscrutable with little further ado.

PHYSICS AND SPACE

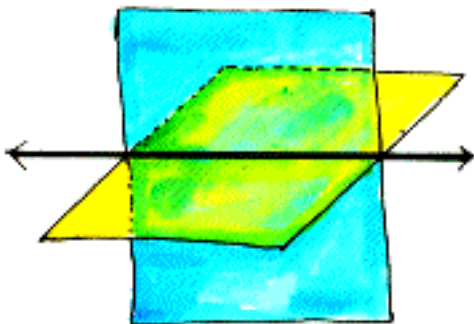
If I have paraphrased Richard Dawkins sufficiently accurately above, he seems to hold a widely prevalent assumption. It is clear that he is of the opinion that all explanations of life’s enigmas must come down to physics to be properly and, therefore, scientifically explained. Physics is the fundamental discipline of our modern scientific culture. Even those in the life sciences will receive the support of their academic peers if they can show the physical basis of their hypotheses and research. Life is a tricky phenomenon for science to pinpoint (even though it is clear to every toddler what it is). But for the orthodox elucidation of life, organisms need to be explicable in terms of biochemical pathways and cascades which are themselves

transparent to a scientist when they have been elucidated in terms of their fundamental particles and thus in terms of physics. Life is considered to be a special case of chemistry, and chemistry a special case of physics. The fundamental particles themselves have receded from our naive grasp over time starting from rocks to Democritus' geometric atoms, via coloured balls on Watson and Crick's spiralling straws to counter-intuitive mathematically-modelled abstractions. From the enlightenment onwards, in the slipstream of Descartes, Bacon and Kant and in our flight from the manifestly unsatisfactory dogmas of the clergy, we have looked for the ultimate reality in which we are embraced by looking into ever smaller aspects of the world around us. It was appropriate, in my opinion, to reject anything based solely on authority and to demand of our fellows that each step in progress should be communal and open to each other's scrutiny. It was certainly valid to start by forging agreement on the most basic aspects of reality and to be incredibly cautious with any subjective impressions that cannot be shown to have an objective basis by weighing and measuring. Inanimate matter was the first aspect of the world to become transparent to this path of investigation. The three legs of maths, matter and measuring provided the secure basis for physics to start rolling back the enigmas that occur to every thinking person who tries to make sense of the world.



Is it right that physics should be the fundamental discipline? Physics seems to be incredibly successful at revealing what determines inanimate objects within space and time, but I think physics has two Achilles heels. The first arises from its evident and stunning success with matter. Our culture's understandable satisfaction with this work means that physics has, however unconsciously, been charged with revealing the laws of living things without appropriately adjusting its focus to accommodate the differences between mechanisms and organisms. Without this adjustment I suspect that researcher will be like one condemned to rummage for ever in the knickers-draw whilst looking for socks. The second Achilles heel is that physics has rarely considered three-dimensional space sufficiently rigorously. Let us address the latter in the hope of shedding some light on the former.

What is a straight line? We can follow Euclid and presume that the 4th definition in book 1 of his 'Elements' means that a straight line can be defined as the shortest distance between two points. Any other trip between those two points would be longer. But we should not overlook an equally good definition which is that a straight line is where two planes intersect – consider where a wall meets the floor. Another example moves us towards the issue I wish to address: any three points that are not all on a single line define a plane – think of the three points on the end of one of the three legged stools we have mentioned - but three planes that do not all share a line of intersection (as would three pages of a book) define a point – such as where two walls meet the floor in the corner.



These are simple illustrations of something that geometers have known for centuries and have called the *principle of duality*. It could be encapsulated by saying that although any form in three dimensional space can be defined in terms of its points, it can be defined by planes with equal exactitude. The principle of duality lay around as a geometer's plaything for a while since it was not clear how to make much use of the insight, but the implications have begun to reveal themselves.

For present purposes I would like to suggest that our scientific and technological culture has based itself upon only one of these modes of appreciating space. Following Democritus we have based the explanation of our reality upon points. We have sought for and found atoms, centres of gravity, electrical and magnetic poles, etc. These are the realities we acknowledge and which we assume to be the fundamental realities of everything else including life-forms or organisms. A certain robust common sense takes us this way, but I hope that you are willing to entertain the idea that it is at least conceivable that one could just as well look for causes in planes – in the space in which the fundamental entities are planes and which has been called 'polar Euclidian space' or, more often, 'counterspace'. In Euclidian space forces are calculated as originating from centres and dissipating themselves in all directions towards the infinitely far spaces. In counterspace the origin of forces is the infinitely distant plane and these forces work in towards centres that are also unreachable and that we can call infinitudes.^{17, 18}

For those infected with maths anxiety from school days I suspect this seems like another sleight of hand to distract us from the bleeding obvious and even if we did wrap our heads around this it would not lead us to anything of practical use. I would have been tempted to agree were there not a fair amount of really interesting and relevant work that reckons with this counterspace as well as the space we are used to. For the details and technical elucidation I would have to point you to the relevant literature but there has been great work in the life sciences¹⁹ and even in the realm dominated by physics²⁰. Nick Thomas has developed his recent work from asking himself what would happen if there were a transformation of a form considered in both space and counterspace²¹. Such a 'linked' object can be twisted, moved, shrunk, squeezed and stretched but some of these transformations will be problematic to accommodate in space and counterspace simultaneously. By first postulating that this

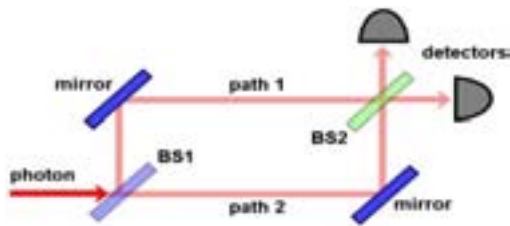
¹⁷ The experiment with the potatoes over the eclipse week in 2006 shows, I believe, that the ubiquitous cultural practice of considering astronomical alignments when planning agricultural activities may not have been so primitive after all. I suspect this is an instance from traditions that reckoned with the peripheral forces. If the preparations give us access to the same forces, we are rescued from being tied to calendars whilst still reckoning with the importance of the peripheral forces to the living world. A fruitful consideration?

¹⁸ The infinitely distant plane may seem like an abstraction but perhaps only in the same way as a point. A point is a location or coordinate without extension: the centre of gravity of an irregular object like a chair will, as like as not, coincide with no physical point on that chair but it is critical to working out how that chair will behave. The infinitely distant plane has extension but no position that we can locate with coordinates. These two - point and plane - are dual in so many ways.

¹⁹ For instance, Olive Whicher: 'Projective Geometry: Creative Polarities in Space and Time' ISBN 0854405607, and George Adams and Olive Whicher: 'The Plant Between Sun and Earth', ISBN 0877732329

²⁰ A mathematically substantiated version is 'Science Between Space and Counterspace' by Nick Thomas, ISBN 9781902636023, An updated and less technical version is 'Space and Counterspace' ISBN 9780863156700.

²¹ <http://www.nct.anth.org.uk/counter.htm>



is analogous to stress and the responding strain in one spatial mode or the other, we can then derive all sorts of laws such as have already been determined by considering Euclidian space alone. The equation for gravity pops out of the geometry as does Boyle's law for gasses and so forth. This gives my inner scientist

confidence that such an approach is not without the potential for usefulness. That it also gives a way to understand some of the enigmas of quantum physics, such as single photon experiments, makes me think that it might really be a productive way of considering things.

All well and good but does it shed any light on potentiation? I think it might. When a remedy is shaken or stirred how does the body of water move internally? Clearly it does not move en masse like a solid object would. The water churns up but can we characterise this further? One way to observe this would be to take a clear-sided vessel and stir the water in it into a vortex.²² As you remove the stirring stick let a drop of ink fall into the water from just above the spinning upper surface and observe it from the side and top²³. You will see dancing inner veils or surfaces of the moving water body revealed. In an ideal imagination the water would move like when you bend a paperback book with the pages shearing over each other. One can calculate that if just one litre of water were moving in such a vortex there would be a sheath of molecule-thick surfaces with a combined area of thousands of hectares.



I postulate that this makes the water receptive to the forces in counterspace which are also planar by nature. In the process of potentiation the water is encouraged to resonate with and become sensitive to the planar aspects of the world. As the preparation is diluted the point-wise aspects of the original substance are gradually removed whilst the planar aspects of the substance are retained and enhanced. The removal of substance, far from being the problem, is the whole point of making a potentiated preparation because the planar forces are no longer restrained and encumbered by the point-wise matter with which they are bound up in the original 'active ingredient'.

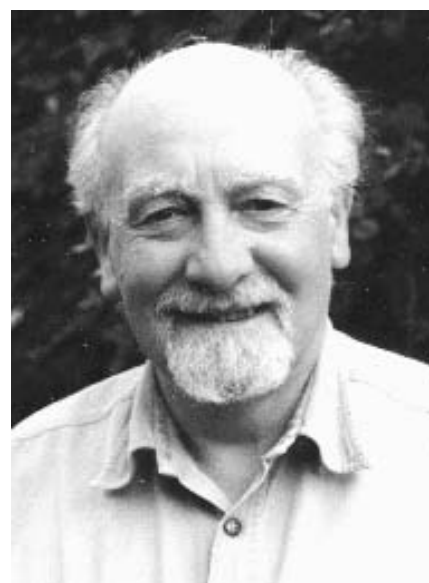
The serial dilution and shaking which defines potentiation does the opposite to what is done in standard pharmacological practice. In the latter discipline a substance from nature is increasingly removed from its planar contexts and the material or point-wise aspects are all that is retained. Even substances of plant origin are driven towards the mineral. In physics the methods for investigating smaller and smaller particles requires conditions in which life is less and less able to flourish. It starts with gross dissection and goes from prepared microscope slides to increasingly inhospitable environments to enable the dissection to continue. In the ultimate instance the particles are moving beyond any speed that an organism can endure within massive

²² Theodor Schwenk. 'Sensitive Chaos: The Creation of Flowing Forms in Water and Air.'

²³ http://www.youtube.com/watch?v=-Jc-qD4y_bU

electrical and magnetic fields and are bashed into each other. One is removing every trace of life in order to consider how the basis of life comes about. I have found it useful to take time to extract more implications from this thought.

If we approach this dynamic from another side we could do worse than to follow the thinking of Henri Bortoft who guides the reader to distinguish between totalities and wholeness²⁴. All the words of the sentence you are reading right now can be considered to be the only components of that sentence. If we collect those words together in a pile we have the totality of what makes up that sentence. However, each word actually receives its meaning from each of the others, from their relative arrangement, and from the wider context in which they were found. Only when considered together and in context does its meaning emerge. Perhaps this is even clearer when considering music. A middle C can be part of a raging passionate solo just as well as a melancholy and sustained background chord. The context of the individual details is often more important than the exact but sterile details themselves. The analogy I would like you to consider is with our investigations of nature. By treating nature as an assemblage of material parts we lose meaning and we lose the higher function that can manifest within these parts. We lose *Natura*. The collection of parts is, in a limited sense, the totality of nature, but it is impoverished and meaningless. It is certainly not the wholeness. This is not a trivial philosophical nicety but, when appreciated in the round and in such contexts as a one-sided appreciation of space, it is potentially a spur to take extra efforts to avoid reducing Humpty Dumpty to ever smaller parts. We cannot always recapture the purpose, the life, identity and meaning, no matter how seamlessly the parts appear to be reassembled.



PLANTS AND SPACE

Any glimpse into this more comprehensive approach to life would be incomplete without acknowledging its debt to a playwright and poet! Johann Wolfgang von Goethe (1749 – 1832), another contemporary of Avogadro and Hahnemann, actually thought that his scientific work would be of more lasting value than his *Faust* or *The Sorrows of Young Werther*. To acknowledge this debt fully we must indicate another point of access into the manifestation of life between the two modes of viewing the space into which plants grow. This approach could be a chance for those allergic to geometrical thinking to become involved, since the method is founded upon the observation of growing plants.

After his ‘*sturm und drang*’ period, Goethe became a pillar of society working to run a patron’s estate and mines. At one point he badly felt the need for ‘some space’ so, without telling his friends, he took off. He kept a journal of his ‘flight to Italy’ and it is in this that we get early glimpses into his way of understanding plants²⁵.

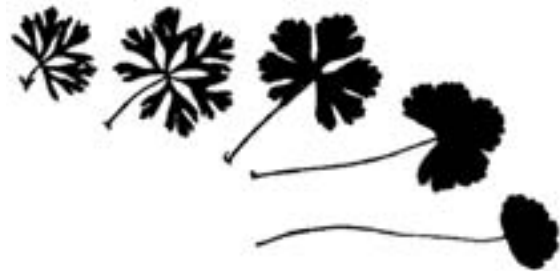
²⁴ Henri Bortoft, “The Wholeness of Nature. Goethe’s Way of Science” ISBN 0863152384

²⁵ Goethe: The Flight to Italy. Diary and Selected Letters ISBN 0192838865



Although aware of the Linnean approach which is still found in today's field guides – white flower, 4 petals, pinnate leaves etc etc – Goethe was more impressed by what he later published as the, 'Metamorphosis of Plants.' In this brief book he outlined three metamorphic sequences. The first occurs in a single plant and involves the change in the form of the leaves from the first to appear at the base of the annual plant and following their form as the subsequent leaves emerge from the stalk until they stop growing at the flowering stage. These leaves can be removed from the plant and laid out in a row in the sequence in which they emerged. It is more obvious in some annuals than in others but one can follow a progression in the size and form of the leaves which is

clearly not random. The larger rounder basal leaves are gradually replaced by more indented and smaller leaves that can sometimes even be seen to morph into the calyx. Clearly the individual physical leaves do not change after their growth process (a most interesting metamorphosis in itself which was later outlined by Jochen Bockemühl²⁶) but the sequence of leaves shows a lawful progression. The second metamorphosis became clear to Goethe as he left Germany and travelled across the alps and down to the North Italian coast. In this journey he could observe the many indigenous specimens of a single plant species - the dandelions for instance - and notice the gradually changing impact of differing climatic conditions as the inland continental biome gradually became alpine and then coastal. In the low warmer and wetter sites the basal leaves were emphasised whereas the alpine versions either totally bypassed this stage or acknowledged this only briefly before producing the leaves normally only appearing towards the calyx in the valley plants.



In both instances one has to keep ones observations exact whilst giving oneself permission to look beyond what is physically present and concentrate on the progressions – second nature to an artist. Goethe realised that one must think in ones perceptions and perceive in ones thinking.²⁷ One can ask oneself what theme undergoes these progressive variations. What protean leaf blueprint precipitates rhythmically into space to make the progression of physical leaves. In a same way one can ask what protean dandelion is sculpted into the individual specimens in the

²⁶ This single-leaf metamorphosis is probably best covered in Suchantke's 'Metamorphosis' – see footnote 28 – but I will acknowledge Bockemühl's contribution via the book most relevant to the range of issues covered in this essay, ie 'Extraordinary Plant Qualities for Biodynamics' Jochen Bockemühl and Kari Järvinen ISBN 0863155766

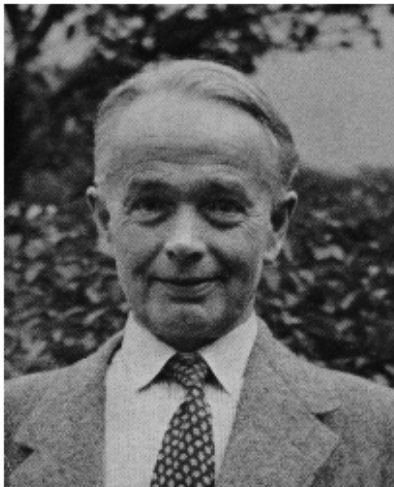
²⁷ Not allowing oneself to go beyond observation is an ideal of the scientific method to avoid subjective pollution. Goethe proposed that thinking and observation must be the twin poles of investigation between which the investigator of Nature must move, making sure that our inner world does not squash our objectivity but is given its appropriate place. Such 'contemplative beholding' is central to Goethe's approach. The danger is creating a transcendent archetype that cannot be shown to exist. This debate about Goethe's archetypal plant began between Goethe and Schiller and continues to this day. Rudolf Steiner took some years to edit Goethe's scientific works, but broke off from his labours to address the epistemological issues that emerge. He wrote about such issues as the 'objective idealism' Goethe uses in his plant work. His books 'Truth and Science', 'A philosophy of Freedom', 'Goethe the Scientist' and 'A Theory of Knowledge Implicit in Goethe's World View' are recommended – all available on line via <http://www.rsarchive.org/Books/>

various conditions and what laws does it obey. And finally one can legitimately ask what protean or archetypal plant manifests in the various species – the last arena of metamorphosis to which Goethe addressed himself. If such a thing did not exist, he argued, how could we know that all these species are all plants? Goethe wished to develop his ideas into an enlarged edition with full illustrations but time was not on his side. Others have taken this taken on themselves in the meantime and as I mentioned before the MIT edition and Andreas Suchantke’s book are wonderful.²⁸

The process that Goethe used to come to this conclusion is actually just a start. Nigel Hoffman called this ‘water cognition’ to distinguish it from the Earthy sense-bound approach to which modern science would limit its researchers.²⁹ These other modes of investigation can also be approached through drawing³⁰. Goethe thought he only really knew a plant when he could draw it from memory. I wonder if it would now be possible to create an animation package based on ‘Sim’³¹ principles to emulate the metamorphoses before ones eyes. Goethe might approve of such a crutch but I suspect he would ask us to run the movie in our mind’s eye first to get the full benefit.



GEOMETRY MEETS GOETHE



The two strands we have teased out using geometry and field observation, were ravelled together and back into Nature again by George Adams. Although he is more easily categorised as a geometrician his presentations and writing are really beautiful and constantly draw away from abstractions and back to the living world. He felt that the polarity of Euclidian space and counterspace defined the full space into which plants grew so much better than the Euclidian space alone, but he wanted to make this idea apparent or transparent to his observation. Where could one find examples of this in ones daily experience? The illusive answer to this was, as it so often appears in retrospect, also obvious. It was in the details of the growth of plants, at the meristem, the place of cell reproduction and growth. At the buds

and the heliotropic growth points of the plant kingdom one can watch this before ones eyes. Cut a red cabbage open along its axis and notice that the older leaves are always pushed outwards by the new ones which emerge from the central cone within this protective chalice. This is where life emerges into space. This is where the processes

²⁸ See JW Goethe, ‘The Metamorphosis of Plants.’ ISBN 9780262013093. ‘Metamorphosis: Evolution in Action’ by Andreas Suchantke. ISBN 9780932776396

²⁹ ‘Goethe’s Science of Living Form: The Artistic Stages’ Nigel Hoffman. ISBN0932776353. This watery method can also be developed to an airey method and a fiery method.

³⁰ New Eye’s for Plants: A Workbook for Observing and Drawing Plants,’ by Margaret Colquhoun and Axel Ewald ISBN186989085X

³¹ These are a series of computer games in which one can morph faces and other things by moving various sliders along a scale to emphasise various features.

of life move ‘from being to manifestation’. The start of this process of manifestation occurs in the planar leaves. As these tissues dry and harden they increasingly become citizens of Euclidian space until they go the way of all matter in the inevitable slide towards gravity and entropy. In the book he and Olive Whicher wrote called ‘The Plant Between Sun and Earth’, this is described with a mathematicians precision and a poet’s eye. The processes and the forms of Nature become transparent to this combination³².



However, for the purposes of this discussion, in relation to potentisation and plants, I would urge readers to another essay which was developed from his own lecture notes. ‘Potentisation and the Peripheral Forces of Nature’ was presented to the British Homeopathic Congress in London on June 1st 1961.³³ Many of the ideas in the discussion you have just read are outlined there with great eloquence.

CONCLUSION

So my hypothesis is that geometry is more fundamental than physics because it defines the arena in which the laws of physics apply. Our scientific culture has focussed on only one way to consider 3D space and so what physics has revealed is not so much wrong, Dr Miller, but is completed and viewed in the round. ‘Everything we thought we knew’, if it is indeed one-sided, could be more dangerous than something that is clearly wrong if we press ahead so confidently with this as our basis! Just as the one way of considering our world has lead to a technology which is appropriate to the non-living matter that inhabits Euclidian space, so can we develop techniques and activities which are appropriate to living beings and are true to a fuller conception of our world. When we augment our understanding of space we find a bunch of laws that are appropriate to organisms. The vortices created in the process of potentisation open up water to the 2D or planar forces which have their origins in the periphery. By alternating dilution with opening up the water to these centripetal influences we remove the material whilst retaining the peripheral forces of that first ‘active substance’. The fact that there is none of the original substance is actually the point and not the problem with potentised preparations and remedies. These peripheral forces are healing even on plants when these forces have been blocked or are absent for some reason. Plants are inherently planar beings in their purely vegetative phases and this is shown most clearly in the dicotyledons’ meristem, in the enclosed growth centres of the developing leaves. This process can be traced with precision both scientifically and artistically. Goethe, said Steiner, is the Copernicus and Kepler of the organic world.

³² A student of George Adams, Lawrence Edwards, took this in hand and worked to see if Nature was a meticulous follower of the forms that geometry would predict from considering space and counterspace. She is! Read his publication ‘The Vortex of Life: Nature's Patterns in Space and Time’ ISBN 978-0863155512 or have a look at the work of Graham Calderwood, Lawrence’s pupil, at – www.budworkshop.co.uk

³³ Available with other essays in ‘George Adams: Interpreter of Rudolf Steiner’ ISBN 0904822087

So, I have asked you to follow some pretty unwieldy ideas and I suspect more questions will have arisen than have been answered. However I hope that these ideas are sufficiently attractive to induce further scrutiny. If these ideas are viable, they will only blossom if those of us who really want to understand them, to realise them, look into them further, both to clarify them and reveal more of their practical reverberations. The latter, the ecological implications, are particularly dear to me so let me labour them one last time.

If the route we have taken has been across real territory and not ‘up the garden path’, then we have benefited from both the homeopaths’ experiences and the scientists’ approach. Having worked on this basis we have found a path to a missing part of what organisms need - and not just the ‘worried-well’ middle-class organisms. At a time when we have lavished all our attention on the inanimate world and made ourselves expert in the laws of what is dead, it is also clear that the living world is suffering under the twin blows of not receiving the inputs it really needs as well as being forced to endure inputs which have blocked out many of the naturally available peripheral forces. Talk of insult and injury ... If all of this is right, or near enough right, then what the living world needs is for us to put down our iPads (or at least build a Goethean app) long enough go out to the fields to understand Nature with our new eyes and then to bring her the forces she needs to continue her willing sacrifice. If the Considera work has a place within this recalibration of recent times I would be very happy indeed. If I am wrong, please accept my apologies, and my thanks for reading so much.



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