

DR PHIL CALLAHAN ON THE POWER OF PARAMAGNETISM

*Dr Phil Callahan's
research into
paramagnetic soil
fertility, plant
growth, infrared
radiation and insect
biology has
enormous
implications for
agricultural
sustainability.*

Professor Philip Callahan, PhD, the author of 17 books and over 150 published papers, is widely regarded as a leading light in sustainable agriculture. His breakthrough work with insects and infrared radiation is a milestone in the understanding of the link between nutrition and pest pressure.

Dr Callahan's more recent research and discoveries in relation to paramagnetism are only just beginning to achieve widespread acceptance. Paramagnetism in agriculture is a powerful growth force which enhances root development and stimulates the multiplication of micro-organisms. Graeme Sait spent an illuminating afternoon with Dr Callahan during the December 2000 *Acres USA* conference in Minneapolis.

PLANTS EMIT INFRARED RADIATION

Graeme Sait: In the foreword to your book on paramagnetism, your editor, Fred Walters, stated that you consider your work in this field to be the most important of your life. Four years have passed since the publication of your book. Are you happy with the impact of your findings in regard to agriculture?

Phil Callahan: Yes, I'm very happy. There are numerous farmers who attend these *Acres USA* conferences who have tried the concept successfully. Also, in your country, some of the big corporations are now working with paramagnetism and plant growth. The book really got things started, because competent people can sit down and read the book and then go out and find out for themselves.

Graeme: The reason I asked if you were happy with the progress relates to what I consider to be snail's pace progress with your other major discovery. For the sake of readers not familiar with your work, I'm referring to your discovery that plants emit infrared radiation, which magnifies scent molecules. Insects use their antennae to detect the source of these molecules. Healthy plants emit a different signal than unhealthy plants, and insects are more attracted to the nutritionally deficient plants. This incredibly important finding has largely been ignored by entomologists, but the military was quick to see its significance. In fact, the heat-seeking missile was developed as a result of your work. How do you feel about this?

Phil: I'm satisfied with my paramagnetics work, but you have to differentiate between this and my infrared insect work. We are still working on projects, which means that eventually we will be able to generate frequencies that will attract insects.

My interest in paramagnetism began with a study of sacred places. I visited these sites all over the world—Catholic, Buddhist, Moslem, even Australian Aboriginal sites. I noticed that the plant growth was always better at these places, which always seemed to involve rocks. Further investigation revealed that these rocks were highly paramagnetic.

The point is that this force was already there. I didn't discover it. It is there to be harvested. The archaeologists would call this "gathering". Good farming is not synthetic; it must involve working with nature rather than with synthetic poisons. Paramagnetic materials are there to be harvested. Good farming is "gathering".

In terms of the electromagnetic work, what I did there was to look at the insects' antennae, because I was experienced in radio technology. I spent the War in Ireland at a top-secret radio station. The system I worked with was not a solid-state system that you turn on and it keeps working. It was a vacuum tube system, and it worked for 24 hours a day for two years to keep the coastal command planes finding their way home. I had to keep this system in there at all times. If I made a mistake, there might be 300 dead pilots. I was tied to that station, but I learned a lot about radio.

Eventually I looked at the insects' antennae system and started experimenting. A

An interview with
Dr Phil Callahan

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simple US\$2 experiment put me on the right track. I took a corn plant and used a box to diffuse the scent from the plant. Beside the box I placed a piece of hairy cloth (which was hairy like corn silk) and shone a blue light on it. Out of 2,000 eggs laid by the corn worm moth, 1,990 were laid on the piece of hairy cloth instead of the corn plant.

From this simple experiment, I realised that the energy from the light was combining with the energy from the scent and raising the power of the scent far higher than what it was at the plant or point of origin. I realised that scent was involved and that scent was really acting as an oscillator. It's all common sense. If scent is an oscillator, then you start looking for the frequency. The infrared part of the spectrum was the obvious choice.

The problem with gaining acceptance of these new concepts relates to the fact that entomologists are tied to 100 years of olfaction theory, which does not cover the concepts of scent and frequency. With paramagnetism, you simply need to apply a highly paramagnetic crusher dust to see the results. Farmers are practical scientists: if it works, they do it. With the infrared work it involved disturbing the status quo, and that's a lot harder task.

Graeme: It's also easier with paramagnetism, because you have developed your PCSM [Paramagnetic Count Soil Meter]. When growers see the direct relationship between productive capacity and the reading on the meter, then the whole concept is lifted out of the realms of abstract theory. It virtually can't be denied.

Phil: Actually, the entomologists could repeat some of my simple experiments and they would see what is undeniable, but they don't want to because they have a mindset against it—a paradigm, it's called. There is no paradigm against paramagnetism because no one has ever heard of it before.

PARAMAGNETIC ROCK EMITS PHOTONS

Graeme: I understand that your latest research suggests that paramagnetic materials are a source of subterranean light to increase root growth. Can you explain this phenomenon?

Phil: Yes. Paramagnetic force is light from rocks for the roots. The rock is actually a transceiver, collecting magnetism from the cosmos and throwing it back out to the roots. If you take a paramagnetic rock and put it into Dr [Fritz-Albert] Popp's lab in Germany and measure it with his instruments which count photons one at a time, you'll find that a highly paramagnetic rock puts out 2,000 to 4,000 photons. If you put that rock with some compost, if you treat it organically, it goes from 2,000 to 4,000 photons to 400,000 photons. Now you are generating a light for roots. Roots are wave-guides, just like the antennae on insects. If you clean off the roots and shine a light on them, they'll wave-guide just like a fibre optic. Dr Popp has a US\$100,000 instrument to measure light in the form of photons.

I can demonstrate the phenomenon with a \$200 instrument called a pinhole camera. You just drill a hole in the lens cap and tape a rock to the camera in total darkness. In three weeks

you can develop a film that will show lights with every colour in the rainbow. There are so few photons coming off, you have to leave it there for three weeks to get it, but the film is sensitive to light, and if you leave it there long enough you'll get a picture. This is irrefutable proof that paramagnetic rock generates light. Remember that plant roots are there for three months' minimum, so they get plenty of light.

Graeme: That's fascinating stuff, but it's only a recent finding. Was this how you always theorised it was working?

Phil: Well, in this case I knew it worked, but I had to find the mechanism of *how* it worked. Some of my experimental work suggests huge increases in plant performance. For example, I took rye grown in sandy soils with a paramagnetic level of 60 cgs [centimetres-grams-seconds] and fed those soils with paramagnetic rock. The rye, before treatment, had 10 to 15 nitrogen nodules on the roots, but after treatment the number increased to 200 nodules. It suggests that the bacteria in the soil can't convert minerals into a plant-available form without this paramagnetic force. They will never utilise all that fertiliser they're dumping on them without the paramagnetic force. This force is to roots what light is to chlorophyll. If you don't have light, then chlorophyll can't work. If you don't have paramagnetic force, then the roots can't work.

Graeme: Well, we've had a recent experience which confirms exactly what you are saying. I'm not sure if you are aware of our company, Nutri-Tech Solutions. We specialise in fertility analysis and personal prescription blends, utilising a combination of Albrecht soil balancing principles and biological activation techniques. We have recently begun importing your paramagnetism meters to expand our coverage further. Our approach has been remarkably successful, to the point that we are now the fastest growing agricultural company in our country.

Recently we had a rare failure. A couple growing lychees in north Queensland had experienced three years without fruit and they turned to us for help. A soil analysis revealed

deficiencies in almost everything. We produced a prescription blend covering all deficits at quite a cost to people in their position. Unfortunately, we still didn't get a crop that season. We were really scratching our heads at this stage, so we shouted them another soil test to see if we could diagnose anything. Their soil sample arrived at the office the same day as the first shipment of your meters. We decided to test the soil for paramagnetism. That soil measured minus 20 cgs on the meter! Paramagnetic energy was the limiting factor here, and, as you said, all the fertiliser in the world couldn't correct the problem.

Phil: Well, none of this stuff is going to work without some of this paramagnetic energy. It can't work without light.

Graeme: This really is an amazing discovery. It's so important for those with non-volcanic soils.

Phil: I'll tell you, Graeme, and I'm not saying this because of me. I don't even care if they give me credit for it. I'm trying to save the family farm. This is, in my opinion, the biggest agricultural discovery in the last century, but I didn't discover paramagnetism; I discovered the *use* of it. That's the difference.

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Healthy plants emit a different signal than unhealthy plants, and insects are more attracted to the nutritionally deficient plants.

WORKING WITH PARAMAGNETISM

Graeme: I'd like to ask you a few questions about the mechanics of paramagnetism for my own benefit and for the readers. Is there any relationship between paramagnetism and Brix levels?

Phil: A recent article in *Acres USA* [September 2000] cited research where there was a six-point difference between low and high paramagnetic soils. It's not the complete answer, but it certainly plays a role.

Graeme: In your book you suggest that compost, micro-organisms and paramagnetism are the principal ingredients in sustainable agriculture. We use a lot more inputs than that, and from experience I feel that this analysis is too simplistic. Calcium, potassium, phosphorus and trace elements are often still necessary inputs.

Phil: I'm not anti-chemical. Like Arden Andersen and Phil Wheeler, I believe that muriate of potash is indefensible; but the point I am making is that if you don't have paramagnetic energy in your soil, then the fertilisers you are applying are simply not being utilised. The family farm is at risk because money is being wasted.

If you need nitrogen, then use the best source for your soil, but don't use anhydrous ammonia. I'll tell you something about this product. Research has been cited, suggesting that earthworm counts can increase following an application of anhydrous ammonia. Now, earthworms are considered the epitome of high fertility. The fact here is that ammonia attracts insects, and it also attracts earthworms. Dead roots outgas ammonia, and earthworms track this emission because dead organic matter is what they feed on.

You really have to understand the bigger picture when analysing anything. The tendency toward rigid, narrow-minded disciplines, considering just a little part of the picture, is dangerous. A holistic approach is essential.

Graeme: We offer a free service to growers, measuring local crusher dust to determine the fertilising potential of these materials. Basalt is the predominant paramagnetic material in Australia. There is a huge variation between samples, with a variation between 100 and 3,000 cgs on the meter. Why is there such a variation? What exactly is it that determines levels of paramagnetism?

Phil: This is pure speculation. I'm not a volcanologist, but there appears to be a relationship between the amount of magma in an eruption and the paramagnetic level of the rock erupted. Magma is from down low; many small eruptions simply don't contain this deep material. Heat is the key ingredient. Even simple composting can lift paramagnetic levels. Compost alone can lift a soil from 30 to 70 cgs.

Graeme: We've increased paramagnetic readings in the soil by up to 700%, simply by correcting the calcium/magnesium ratio and lifting oxygen levels in the soil.

Phil: Oxygen is the key here. It is the most highly paramagnetic gas. When this magma erupts, it rains down and it picks up oxygen. There is a link here between the heat and oxidation.

Graeme: There is one interesting phenomenon I would like to discuss. We do some work in an area in Queensland called Blackbutt. I've seen your references to optimal and high paramagnetic levels, but this particular area reads far higher than

any of the soils you mention. Paramagnetic levels range from 3,000 to 10,000 cgs. The interesting thing is that, even at these elevated levels, there is still a difference in yield between soils measuring 3,000 and those measuring 10,000 cgs. Even more interesting, soils measuring 7,000 were still showing a visible benefit from the application of basalt crusher dust which measured just 2,000 cgs. Can you explain this?

Phil: Here you are looking at remineralising benefits. It may be cobalt or iron. Phil Wheeler suggests that nickel is often the missing link. Whatever the case, the response from the crusher dust isn't coming from paramagnetism here. Paramagnetism stimulates bacteria to increase the bio-availability of micro- and macro-nutrients, but if you don't have those nutrients present, you won't get the desired results. You could theoretically have a soil measuring 15,000, but without calcium it would not produce.

Graeme: How reliable is paramagnetism as a plant growth stimulant? Can any grower source a good crusher dust, apply it and expect to see results, assuming that his existing soil levels are low?

Phil: No, definitely not. Soil life is the thing. Paramagnetism works with compost. There may be hundreds of organic growers out there doubling their yields, but when you apply the same material to a dead, chemically farmed soil it

won't work. If you don't have a minimum level of organic matter, paramagnetism doesn't work. I've even trialled it at home. Both of my turnip plots have had paramagnetic material added, but one has also had compost. There is no comparison between the growth: compost is the key.

Graeme: That's interesting. I had no idea that the link was so strong. Is there a one-on-one relationship between increasing organic matter levels and response from paramagnetic materials?

Phil: It's pretty complicated, and we haven't yet done the research to be able to be that precise. There's another 10 years of work here, and I can't do it all.

Graeme: One of your strengths is your capacity to bring together the threads of many different disciplines to offer a more holistic explanation. This is in direct contrast to the reductionism of modern science. Has this broad-stroke approach proved to be a handicap in terms of mainstream credibility?

Phil: The generalist approach is not for anyone who wants to win a Nobel Prize. Chuck Walters gave me a prize last year—a little glass plaque—and I said: "This is my Nobel Prize." It wouldn't mean a hill of beans to me to win the Nobel Prize. I mean, the guy who invented DDT got the Nobel Prize. Credit is rarely given where it is due.

My favourite example is the 19th-century scientific genius, John Tyndall. Tyndall actually discovered penicillin 80 years before Sir Alexander Fleming did. He discovered that scent molecules absorb infrared radiation. He actually said that this is the way olfaction works. Tyndall also discovered paramagnetism, so both of the things I'm working on today were discovered in 1850. This is so often the case in science, but there is so much dishonesty in this industry. Egos cover the truth, and credit is not given where it is due. I actually discovered these things myself, but then found out later that Tyndall had found these things before I did.

...the point I am making is that if you don't have paramagnetic energy in your soil, then the fertilisers you are applying are simply not being utilised.

Graeme: One more question about measuring paramagnetism with your meter: how do you differentiate between ferromagnetism and paramagnetism, when both affect the meter reading?

Phil: Yes, that is a problem. Obviously, the ideal is a material with low iron levels and a high paramagnetic reading.

Graeme: We work with a scoria/crushed lava product called Nutri-Score, with a reading of over 3,000 cgs, but it only has 7.0 ppm of iron. We often combine it with other materials with water-holding capacity, like the soft rock phosphate and humates, and then pump a microbial inoculant into the blend. When the scoria fines are part of the blend, the microbe count jumps from 1.0 billion per gram to 2.5 billion per gram.

Phil: That's right. It works every time, but in the soil you have to remember that you still need all of the chemicals in the right balance. You will still need nutrition to benefit from paramagnetism. It's part of a bigger picture. Science is supposed to study nature. When you see something happen, you experiment with it. Then you try to engineer it. This is when the maths comes in, but it should come in after the experiments, not before. Thousands of researchers sit around theorising with computers. That's not the way science is supposed to work.

Graeme: One other thing we've noticed is that paramagnetic levels are usually higher on elevated ground. Even in the Queensland case, where levels varied between 3,000 and 10,000 cgs, the higher readings were found at an altitude of just 400 to 500 feet. What is the explanation of this?

Phil: When the volcano goes off, the magma comes up from the bottom. It forms droplets and is charged up with oxygen. When it drops back down, more of it will land near the top of the cone. The wind gets hold of it and spreads it more thinly elsewhere. The weaker stuff will always be at the bottom.

WEEDS, HERBICIDES AND ELECTRONICS

Graeme: In your book, you make a statement about the purpose of weeds. You suggest that weeds are present when nutrients are missing and that they serve the function of nutrient recycling, bringing up nutrients from down deep and often actually increasing paramagnetic levels.

Phil: Yes, that's correct. They are a deficiency signpost, and they do recycle. The increased paramagnetism is to do with the extra minerals and the extra oxygen allowed into the soil when weeds help condition the soil.

Graeme: But when you weigh up the nutrient and moisture competition related to having weeds in your crop, do you still consider that we can live with them?

Phil: Often we can. There are many times when we overestimate the competition caused by weeds. We also have to look at the alternative, which is herbicide. All herbicides kill micro-organisms. Weed killers are far worse than insecticides in this regard.

Graeme: You have mentioned the negative aspects of herbicides. How does no-till farming rate with you in this regard? No-till farmers are some of the biggest herbicide users.

Phil: Well, I must agree. Herbicides ruin no-till. All herbicides kill micro-organisms. Some of them are more destructive than others. Atrazine is probably the worst, but Roundup is also a killer.

Graeme: That's interesting, considering the fact that Roundup is always promoted as biodegradable.

Phil: It may biodegrade eventually, but it's never specified how long this may take. The fact is that residues remain for many months. Earthworms don't like the stuff. Darwin himself stated that anything that will kill a plant will also affect earthworms. As I said, herbicides are far worse than insecticides.

Graeme: We have been promoting the concept of using humic acid with herbicides to tie up residues and reduce ongoing damage. Are you familiar with this idea?

Phil: Yes; it's definitely a good concept. I think Arden and Phil Wheeler are promoting similar ideas. Phil Wheeler is a brilliant young physicist and a great teacher, but he tells me he really has to take it easy when he is talking about paramagnetism, because it is such a strange idea that it tends to alienate people.

Graeme: I disagree with Phil [Wheeler] on that score. I agree that Phil is a highly credible communicator, but his work with radionics has far more alienating potential than the concept of paramagnetism. Your PCSM takes the "witchcraft" out of the picture. This meter is 100% reliable. If you have a good, highly productive soil, it will always produce a high score on the meter. Conversely, if you have a problem area, then there will always be a much lower reading.

By contrast, it is a fairly hard sell to tell a conventional grower that he can post a Polaroid photo of his crop to the other side of the world and his problems will be diagnosed. It may be true, but it is definitely more of a fringe-dwelling concept than paramagnetism. Paramagnetism is now provable using your meter. I feel that it's been completely removed from the mystical realm.

Phil: Yes, it's good, solid physics. Even electrical engineers take one look at this meter and say,

"God, that's it!" With radionics there is one main problem: when you start trying to make a human being into an antenna, you've got troubles because you can't tune a human being. One might measure 200,000 ohms resistance, and another measures 500,000 ohms. When you're trying to match an antenna to a transmitter, this is a big problem. A scanner is essentially an impedance box, except in that case you have a stable antenna and a stable transmitter. Scanners are incredibly operator-dependent. Selling one of these things to me would be like selling me a violin and wanting me to play "Danny Boy" on it. I don't have a musical ear. Some people—dowsers, for example—are very sensitive to radionics, but the majority of people cannot reliably operate a scanner, and that is the major problem with this technology.

Graeme: Is there any hope of developing a reliable scanner which is not dependent on the human antenna?

Phil: Yes, there is, and I'm working on a prototype at the moment. It's a remarkably simple idea, which should cost a fraction of the current cost for scanners when I've perfected it.

Graeme: You certainly managed to reduce the cost of paramagnetic meters by several hundred per cent with your PCSM. What is the history of the development of that meter?

Phil: Well, I knew what I wanted but I wasn't capable of wiring it up. I had to bring in an electrical engineer, Ed O'Brien, the head of an electrical engineering department.

If you don't have a minimum level of organic matter, paramagnetism doesn't work.

Graeme: Returning to paramagnetism in agriculture, we always push the paramount importance of calcium in the fertility equation. What is the relationship between paramagnetic response and calcium levels?

Phil: Well, calcium is the most important nutrient, and you won't get a good response from paramagnetic rock dusts if you have ignored your calcium. Nutrients in general won't be available if you don't have enough calcium. Paramagnetism is not a substitute for nutrition. It is something extra.

Graeme: One more question about "living with weeds", because they are a major problem on both biological and conventional farms. You suggest that there is an optimum weed population. What is that optimum and how is it achieved?

Phil: Well, I think what should happen with weeds was best illustrated by Phil Wheeler in his address today. He said, "I fertilise for the plants and not the weeds." If you have weeds growing as high as your corn, then you have not been fertilising correctly. If the crop is thriving with the right inputs, it will always outperform the weeds.

ANCIENT TRADITIONS, MODERN RESEARCH

Graeme: There seems to be a tendency in eco-agriculture to compare some of the concepts to the ancient Chinese philosophy of yin and yang. Arden Andersen likens growth energies versus reproductive energies to the yin-yang concept, and you make similar suggestions for paramagnetism and diamagnetism. Is there common ground between these ideas?

Phil: Absolutely. I once photocopied many sections from 15 volumes I borrowed from the USDA Library, which covered the link with ancient Chinese philosophy, science and religion. The old dowsers used to look for the right place to build a house. They were dowsing places that were highly paramagnetic.

Actually, while I was in Australia last time, I was talking about Ayer's Rock with an Aboriginal man. I mentioned that it was a sacred place, but he informed me that the rock was actually a meeting place, because it could be seen for miles around. The actual sacred place is 30 miles from there. I can't remember the name of the area. When I got to Ayer's Rock, I measured it and it only measured 30 or 40 cgs. When I went to their sacred place, it measured 5,000 cgs!

Graeme: You certainly have a great love for travel and adventure. Has age tempered this passion at all?

Phil: People have a strange idea about age. Five years ago, at 70, I decided to find a place where nobody had ever been, so I found 25,000 square miles on the Amazon, which the Peruvians would never enter. It was controlled by a headhunting tribe with a vicious reputation. The Peruvian government rented me an army plane; I guess they wanted to see what would happen. I flew in with a friend of mine. The pilot dropped us off and I said, "Don't forget to pick us up in three weeks."

I walked in and found the headhunting tribe and lived with them for three weeks. There was no problem. The key is to go in smiling. If you go in unarmed and not speaking their language but with a big smile on your face, they are fascinated. It's like bringing them a new TV. Pretty soon they're calling you "Uncle". We were almost killed in the plane going in.

Motor vehicles and aeroplanes are far more dangerous than most of my adventures. Almost every member of my family has had serious car accidents; I've had two. The whole family has recently been involved nursing my wife who is just recovering from being hit by a truck; it was her second serious accident.

It was a great experience with the headhunters; I might write a book about it some day.

Graeme: You've had 17 books published to date. Are you working on anything at present?

Phil: Yes, actually I consider it pretty important. I'm doing a handbook on paramagnetism. The first part will explain what volcanoes do; the second part will describe erosion—good erosion—where paramagnetic earth goes down to the rivers. Then I'll explain why you need it in the soil. Part two will contain simple experiments with earthworms and nitrogen nodules on roots, with different chemicals. It will be a simple handbook which should clarify paramagnetism for many farmers.

Graeme: Are you familiar with the American researcher Bruce Tainio? He has pioneered the concept of monitoring the pH of leaf sap as a guide to plant health and nutrient requirements.

Phil: No, I haven't heard of his work.

Graeme: Well, apparently he has also been researching paramagnetism. I hear that he has been crushing highly paramagnetic material with a ball roller to reduce it to the finest powder. This powder, when applied in tiny applications, has increased micro-organism counts by over 300%. This brings me to my next question. How important is particle size when applying paramagnetic materials to the soil?

Phil: Well, from a practical standpoint, dust is hard to work with. In the lab it may be relevant, but in the field we've had better results with coarser material.

Graeme: In our case, we would usually mix the dust with other materials to avoid this problem.

Phil: Well, if you're mixing fine dust with compost, I think you would be better off. Whatever you do, it's best that the material be "disced in", otherwise there is the possibility of encouraging shallow roots.

WATER AND PARAMAGNETISM

Graeme: We've also found a difference in readings between wet and dry soils.

Phil: Yes, that would be right. Water is diamagnetic. I'll tell you something important about water and paramagnetism. Rainfall records show that in the American Midwest they have had 12 inches of rainfall every year for the past 100 years. There were never droughts prior to World War II, but now they are commonplace. They are still getting the same water. So what's changed? Fifty to 60 years ago, average paramagnetic levels in those soils were 300 to 400; now they are always below 100 cgs.

The results I've just received from the Australian company Boral, which is working with these concepts, confirm the reason. Boral has found that paramagnetic materials increase water-holding capacity by 50%.

The point is that the paramagnetic force can and will erode over time. Modern farming techniques speed that erosion. It's

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not a new phenomenon. It's just sped up a lot.

I've been working in Phoenix, Arizona, looking at tabletop basin farming. How did the Indians have farms on top of the mesa in 12 inches of rainfall with no way to irrigate at all? One mesa I found was suitable for irrigation because there were 12 springs on top, but all the rest of them had no springs. One archaeologist suggested that they must have carried water up the mountaintop, but this was simply not feasible. They had to depend on the rain. I have a photo of a mesa, which was actually taken by Charles Lindbergh. You can see in this photo exactly where the Indians had farmed. I went to the mesa and under the adobe, where it had never been farmed, the paramagnetic levels were 800 or 900, but where it had been farmed the levels were down to 50 or 60 cgs. Basically, the Midwestern farmers had eroded away their paramagnetic force in a 50-year period, while the Indians had taken 300 or 400 years to achieve the same depletion.

The point I'm making is that these soils can easily be re-energised. It may only last 10 or 12 years in our irrigated farms, but it is relatively inexpensive and it can make a huge difference to production. The Indians abandoned their land when the energy had fallen below 100, as it was no longer viable. We don't need to do that.

Graeme: Yes; we have found that, in orchard situations where growers use under-tree sprinklers, the paramagnetic reading is often half of the inter-row area or the area just outside the sprinkler line. I wasn't aware that the energy could be eroded like this.

Phil: Yes, that's what's happening, but it's more than that because during the rain period the tree collects water and then drips, and this dripping action will erode paramagnetism. I measured Stone Mountain in Georgia, which is white granite. The top of the granite, which is exposed to the elements, measured 30 or 40 cgs, but the bottom, where it is sheltered, measured 2,000 cgs. The force weathers over time.

Graeme: Do you do much in the way of seminars or talks here in the US?

Phil: No, there is far more interest in these concepts in other countries. I only ever speak at *Acres USA* conferences these days. When I was in Australia last, I gave 18 talks. While I was in Japan recently, I had 35 invitations to talk. I had actually been invited over there as the first Westerner to open one of their sacred buildings.

Apparently tree growth on many of their sacred sites had slowed to a halt. They read my book on paramagnetism and applied some volcanic ash to some of the trees. The trees sprang to life, and they rewarded me with this honour. The people my wife and I were introduced to at the ceremony included the Japanese royals, but we weren't even aware of it at the time.

Graeme: It's amazing, after all your work, that you still have a credibility problem in the United States.

Phil: Well, it's 17 books and 150 or so published scientific articles, but I've never been approached by a single American company to commercialise any of my projects. Mainstream

academics are constantly trying to discredit me. A colleague was recently involved in an argument about my ideas with the head of an entomology department. The guy was completely closed. Finally, my friend said, "Well, what if he's right?" The department head said, "That would be real bad." Obviously if I'm right, then there are a whole lot of people who have been wrong for a long time.

Graeme: Yes, I guess it would force them to confront their entire belief systems.

Phil: Yes, that fellow was right. It would be bad for them. I think I will receive due credit eventually; in fact, I know I will, but probably after my death—but at least it will keep my grandchildren from starving. Historians usually manage to straighten things out.

Graeme: Have figures for likely increases in paramagnetism levels been determined yet? For example, if you had a soil measuring 100 cgs and you put on five tonnes of crusher dust measuring 2,000 cgs per hectare, do you have any idea of the end gain?

Phil: No, we have been talking about that just recently. It's a new concept, and we really are at the pioneering stage. No one has done this kind of work yet, but I'm sure it won't be too far off. I mean, optimum levels may vary for different plants. There is a huge amount of research needed.

Graeme: I would suspect that there is a perfect soil that grows everything just right. In our case, that soil would have a pH of 6.3, the perfect calcium/magnesium ratio, over 5% organic matter, balanced cations, balanced anions and a functioning biology. In that perfect soil I would like to see a paramagnetic reading exceeding 500 cgs.

Phil: I would tend to agree with you. Balance is everything. I just wish there was some funding to find out more about these things.

Graeme: It will have to come from private enterprise. When there's a profit to be made, the funds will come

from everywhere. There is no great conspiracy surrounding chemical companies: they are merely chasing a profit. When demand changes focus, these same guys will sell organics. Our goal is to speed up that change.

A POWERFUL HEALING REGIMEN

Phil: That change is already happening in human health, where the big companies are now trying to grab a piece of the growing market for minerals and supplements.

Graeme: Yes, the reason that the demand for supplements and natural medicines has grown is because people have discovered that a lot of them work better than their drugs...

Phil: Well, I cured my boy's arthritis with paramagnetism. I cured my own lung cancer with this force. Lower back pain is easy to cure with it.

Graeme: Tell me about it: I've suffered lower back pain for years!

Phil: Well, my book, *Ancient Mysteries, Modern Visions*, covers this a little. One chapter is about how to make a *shatnez*. *Shatnez* is an old Hebrew word. I found out from the rabbis

[US] Midwestern farmers had eroded away their paramagnetic force in a 50-year period, while the Indians had taken 300 or 400 years to achieve the same depletion.

that the high priests used to wear this piece of cloth called a shatnez. The high priest would wrap this cloth around himself. The high priest was a doctor and he had to spend time helping the lepers. He had to have a good immune system to survive. I figured that maybe this garment is part of a healing system.

The Irish take the halter of a donkey, which is drenched in sweat, and they wrap this around arthritic joints, with great results. The cloth the priests used was woven with wool one way and linen the other way. The American pioneers called the same cloth *linsey-woolsey*. The Hebrews call it shatnez. It is arguably the best cloth ever invented. It retains moisture really well, but it also dries really quickly. If you wet it, it stays damp forever; but if you want it dry and put it in the sun, it dries in a hurry. So it makes a good cloth and it's great for soaking up sweat.

I made a vest of this material and I soaked it in seawater to mimic sweat. I found out that you don't necessarily even need linsey-woolsey. My wife made me a vest out of a burlap sack. I soaked it in seawater and wrapped it in plastic cling wrap to retain the moisture. I used to wear this damp vest over a T-shirt to keep the plastic away from my body. When I was diagnosed with lung cancer, it was the cornerstone of my own treatment regime.

I spent five years evaluating the damage done with herbicides and pesticides, and I'm sure there was a link to the cancer. Anyway, I also took garlic every day and ate a tablespoon of highly paramagnetic dirt each day. The tumour shrank and I cured myself. I also made one of these vests for my wife for her arthritis. Her persistent lower back pain disappeared in a week and a half.

Then she put it on her shoulder, which had arthritis, and it was also cured. So far I've cured 15 people with arthritis with this one vest. The

last chapter of my new book is to describe how to make this vest, but I've just told you instead. There are two chapters planned for this next book: one is about the pattern for this cloth and how to make it, and the second one is about how to do it cheaper with a piece of burlap.

Graeme: When is the next book due for release?

Phil: It will have to be soon, probably six to 12 months. I have so many people asking me about this cure. It will also depend on how long it will take *Acres USA* to publish the book. [As we go to press, the book is yet to be released. Ed.]

Graeme: I look forward to it.

THE MAGIC OF PARAMAGNETISM

Graeme: Another agricultural question: if you had to short-list the four major benefits of paramagnetism in agriculture, what would they be?

Phil: Well, as I mentioned, water retention is a big one. Microbial stimulation is another, and improved nutrient utilisation is a major factor, but the provision of a light energy source is very important.

When I was working with Dr Popp on this one, he was very surprised. He had been getting coherent radiation from seeds and I had been getting it from insects, but he didn't think it would happen in rocks. When he measured the 2,000 protons that came out of a rock, not only did his proton counter show that it was coherent, but it also had a memory! In other words,

it lasted something like 20 or 30 minutes, sort of like a fluorescent lightbulb dying down.

God takes care of you. When I got to Germany, there were meetings going on everywhere at the university. Dr Popp couldn't find a graduate student to help with the research. There were two Russian scientists working there who could speak English. I don't use a computer—all my work is done with a pencil and paper—but, to speed things up, you really have to have a computer. These Russian guys dropped everything and helped me with the computer side of things. They were absolutely flabbergasted. When they saw the coherent radiation with a memory coming out of a paramagnetic rock, they were just jumping up and down like a couple of kids.

Graeme: When were you in Germany?

Phil: It was at this time that I started coughing. I thought it was a cold, but when I got home to Florida, it got worse. At first they thought it was tuberculosis, but then I was told I had lung cancer.

Graeme: How did you feel about the diagnosis?

Phil: To be honest, I really didn't worry about it. You are going to die sometime, and I have no fear of the prospect. I wanted to test my own treatment, and it worked for me. A

damp burlap vest soaked in seawater and wrapped in plastic, a teaspoon of garlic and a tablespoon of paramagnetic rock did the trick...

Graeme: Thanks for your time. I've had a great afternoon.

Phil: It's been a pleasure. I hope to see you in Australia some time.

About the Interviewee:

Philip S. Callahan, PhD, is a rare combination of scientist, natural philosopher and world traveller. He is the author of

more than 150 scientific papers and 17 books, including *Insect Behavior* (1971), *Tuning in to Nature* (1975), *Birds and How They Function* (1979), *Ancient Mysteries, Modern Visions* (1984), *Nature's Silent Music* (1992), *Exploring the Spectrum* (1994), *Paramagnetism* (1996), and *My Search for Traces of God* (1997)—a very personal memoir that describes his own spiritual development, the influence of divine guidance on his discoveries, and the physics of miraculous events (see review, NEXUS 5/06). His article, "The Invention of Wireless Communication", was published in NEXUS 7/01.

About the Interviewer:

Graeme Sait is CEO and co-founder of Queensland-based company Nutri-Tech Solutions Pty Ltd (NTS), which is now a recognised world leader in biological agriculture. NTS services 15,000 farmers, exports to 25 locations and has developed over 200 products. Graeme is also a writer and educator, responsible for the holistic NTS systems approach. He developed the highly successful Soil Therapy™ and Plant Therapy™ services. He is a sought-after speaker at seminars and conferences throughout Australia, and he recently addressed two conferences in the USA. Graeme is author of over 60 articles, and has conducted an interview series with the leaders in sustainable agriculture, which is soon to be published as a book. Visit the Nutri-Tech Solutions website at <http://www.nutri-tech.com.au>.

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