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The Journal of Borderland Research originated as Meade Layne's *Round Robin* in 1945 for the purpose of investigating into realms normally beyond the range of basic human perception and physical measurement. Changed to *The Journal of Borderland Research* in 1959, the Journal continues to be the premier information resource for discerning scholars and advanced researchers on the frontiers of science and awareness.

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THE JOURNAL OF BORDERLAND RESEARCH

EDITORIAL

The Journal of Borderland Research had a rough year in 1999. This year, we are going to get back on track with the publication. You may notice the change in paper quality, but the content will continue to be the high quality it has always been. Printing in this new format will help ensure the Journal is produced on schedule. You will also see less advertising which will make more room for article content. I might add that our focus continues to evolve and reflect what we feel is most pressing in scientific research. While at times, we seem more skeptical than the old BSRF, we hope to present the best of alternative scientific understanding with a great deal of critical thought. Our stand on Y2k was such an example.

With the uneventful passing of 01-01-2000 we indeed proved that BSRF has a voice which is to be acknowledged. We had many more detractors than supporters of our statements that Y2k would be more of a non-event, and that it was more so a product of what we termed, "The Industry of Hysteria," and our detractors were wrong (see article on page 19). We will be going after many more subjects with great scrutiny such as Global Warming, AIDS, our present solar cycle (see article on page 29), and many never before presented exposes of current scientific debate.

We are looking forward to this new year as a catalyst for many exciting new research projects. Our biggest project is the creation of Borderlands Radio Internet. As the host of the show, I will be doing many interviews with researchers in all areas of Borderland science, and using the medium of the internet, we will be able to broadcast it to thousands. For those that don't have a computer we will be putting these interviews on cassette tape. No commercials, no sensationalist claims, just straight talk about topics that don't get covered elsewhere. I suspect it will be nothing like any radio talk show you have ever heard. If you have a computer, keep checking our website for the premiere of Borderlands Radio Internet.

The fascinating work of L. George Lawrence continues to thrive in the capable hands of long-time Borderlander Duncan Laurie. This year, we expect to see some exciting research in the field of biosensors, and Duncan has set up a fine laboratory to continue this work. Early

reports indicate some amazing advances in the technology.

There are many more articles in Robert Nelson's alchemical transmutation series. Look for them in the coming issues.

Here at Borderland Sciences, we are working on the reprints of several old research titles. Some of our more popular titles will be offered in a limited series of numbered hardbound editions. Also, we are working toward the development and distribution of some new and useful products that have been tried and tested by those of us at BSRF, and have passed our demanding review. Those of you who were fans of Gerry Vassilatos' work may be interested in the new video, *Dark Satellites*, which is the last thing he ever did before dropping out of the alternative science community (see page 9 for details). We do hope that Mr. Vassilatos returns someday to grace us once again with his outstanding research.

Once again, we are offering Vitic Energy Rods for sale, and the research into their unique revitalizing effects continues in ongoing experiments. This was one of the old pet projects of BSRF in the 1950s and 60s which I am sure many of you will remember. The Vitic consists of a 5 inch carbon rod, and a 5 inch magnetically charged iron rod, that when held in the hands produces a subtle galvanic current in the body. Their history of use dates back to Egyptian times.

Well, we do hope you all have a great year. We anticipate that the year 2000 will be a year of renewal for Borderland Sciences and many others in our fields of research. We thank you for your support!



Michael Theroux
Editor



NATURAL HOME HEALTHCARE: THE SECRETS OF TRADITIONAL CHINESE THERAPEUTIC EXERCISES

M. Theroux

“Most of us are fascinated by diets and medicines and treatments and cures – all external; but one can learn to balance one’s body oneself...when the balance is upset, sickness and disease occur, and medical treatment has only a partial and temporary effect upon them as long as the balance is not restored.”

– Taisen Deshimaru from *The Zen Way to the Martial Arts*

We get many calls from people asking us what are the best new therapeutic devices, or which supplement is the best overall health tonic, etc. Since we are strictly a research foundation and cannot give medical advice, I usually try to steer them away from the answers they may be expecting. BSRF has produced in the past, a number of books and videos detailing simple exercises one can do for health and fitness such as *The Five Rites of Rejuvenation* and *24 Movement Tai Chi Ch’uan* including a number of books which outline very simply how to keep fit. As I have said several times, I feel more than any “black box” or supplement panacea, these simple exercises are the true key to a long healthy life. There are no pills, no black box electronic gadgets, or any so-called oxygenating systems that can rival the power of the ancient therapeutic exercises. These exercises not only stimulate vital energy (*chi*), but physically work to oxygenate the body which has been determined to be of great preventative benefit and boost to the body’s immune system (oxygen is the first line of defense of the immune system, and necessary for the removal of all waste products from the body). While there are certainly benefits to be derived from some supplementation and other complementary therapies, they should only be considered useful in conjunction with a healthy regimen of exercises.

The main problem with these exercise methods of preventative health is that in most cases, you have to actually get up out of your chair and do something. It takes a little more motivation to learn and perform these exercises than it does to sit back and take the cure-all box treatment or the latest supplement “fix”, but in this series of articles on *The Secrets of Traditional Chinese Therapeutic Exercises*, you will actually see just how easy and fast-acting most of these exercises really are. For those interested in survival lifestyles, the knowledge and use of these exercises will better equip you for difficult times than all other alternatives.

Traditional Chinese exercises for health, longevity, and

prevention have their foundations in antiquity. The reason these thousands of years old therapeutic exercises are still being used by millions, especially in China, is simply that they work. This form of healthcare includes breathing exercises, stretching, muscle relaxation, shadow boxing, Five-Animal exercises, Eight Bolts of Silk exercises, massage therapy, and other simple exercises that will be dealt with in this series of articles. Most of these exercises are actually considered folk medicine exercises as they are simple exercises practiced by the common folk. Many, if not all, have been clinically examined as well with positive results in all cases. Those of you familiar with Qigong will immediately recognize these exercises from their fundamental forms. In this series of articles I will introduce these basic exercises which have been simplified for use by all ages. The forms of these exercises have been taken from many sources including several recently translated works, some newer interpretations from western authors, and from actual experience with the exercises. We will start off this series with traditional breathing exercises.

Origin and Effects of Traditional Breathing Exercises

In ancient China the training of vital energy (*liangqi*) through breathing exercises is an intrinsic component in the method for keeping fit, strengthening body resistance, preventing and curing disease, and rehabilitation. Traditional Chinese medicine above all stresses the training of vital energy as the fundamental factor to achieve good health. The first written instance of breathing exercises appears in *The Yellow Emperor’s Canon of Internal Medicine* from the fourth century B.C. Recently, international symposia on breathing exercises have been held in Prague, Morocco, and Toronto since 1973, and in 1975 the Marsh European University in Switzerland performed a comprehensive study on breathing exercises.

The three main parts of breathing exercises are as follows: 1) Adjusting the posture; 2) Adjusting the mind; 3) Adjusting the breathing. These three main parts work together to act on the body as a whole, and have a positive effect on individual internal organs.

Traditional breathing exercises affect the nervous, respiratory, digestive, cardiovascular, and endocrine systems. Comprehensive studies have shown that after breathing exercises there is a synchronous increase in electroencephalogram voltage in all areas of the cerebral cortex. Also, experiments using subjects with high blood pressure

showed a weakening in the reaction of the sympathetic nerve, and a strengthening of the parasympathetic nerve reaction.

From readings of electrocardiograms it has been observed that a breathing exerciser's heartbeat slows down markedly thus strengthening cardiac functions. Breathing exercises also promote blood circulation by dilating the capillaries and fortify the pulse.

The rhythmic change in intra-abdominal pressure caused by the diaphragm's movement massages the stomach, intestines, liver, gallbladder, and pancreas stimulating an increase of gastrointestinal peristalsis (the wave-like muscle contractions of the alimentary tract that moves food along) and a decrease in abdominal blood stagnation which improves digestion and absorptive functions.

Breathing exercises also lessen the corticohormones and growth hormones causing changes in enzymatic activity and a strengthening of the body's immune system. Some other unique tests have shown that when a practiced breathing exerciser is functioning a periodic signal of 30mV can be detected from the fingertips up to 12 inches away from the voltmeter whereas a layperson shows no electrical change.

It is clear from the above that breathing exercises can reinforce the body's resistance, and have a marked effect on the vitality of the immune system. We will now go on to the simple methods of practicing these breathing exercises.

Adjusting the Posture

The first step is adjusting the posture to perform the breathing exercises correctly. The muscles must be relaxed, and posture itself is plays a significant role in the training of vital energy. When one observes the movements of Tai Chi Ch'uan, it is easy to see how the postures of these specific movements can be likened to individual "tunings" of the body - much like that of a radionic instrument - but more naturally as it utilizes the human body as the instrument. Here we will cover two basic postures, and anyone should be able to perform at least one of them.

In Figure 1 we see the normal sitting posture. You simply sit upright, preferably on a chair or stool with no arms with your feet touching the ground, legs apart, and the knees slightly bent. Place your hands naturally on your knees, drop your shoulders, and relax your chest. Close your eyes and mouth and allow the tip of the tongue to touch the roof of your mouth. Smile slightly.

In figure 2 we see what is called the standing posture or "three-ball style." Stand with your feet shoulder width apart, toes pointed slightly inward, and bend your knees somewhat. Relax your chest and raise your arms laterally keeping your elbows lower than your shoulders. Your hands should be naturally positioned as if holding a big ball in front of you, with each hand curved as if holding a smaller ball in each. Close your eyes and mouth and allow the tip of the tongue to touch the roof of your mouth. Smile slightly.

Adjusting the Mind

Adjusting the mind to a state of quietness is fundamental to all breathing

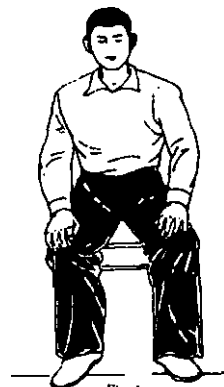


Fig. 1

exercises. This is merely a form of meditation. We will simply concentrate the mind on our breathing process by counting from one to ten for each round (a round is one inhalation and one exhalation - called xi in Chinese). This is done until you reach a state of seeing, hearing and thinking nothing - which is your arrival at meditation.

Adjusting the Breathing

Since breathing is the key to this exercise, we need to adjust from normal shallow breaths to deep abdominal breathing. This is referred to as *dan tian* breathing which is when you experience the sensation of air entering the abdomen directly instead of the lungs as the diaphragm descends and the abdomen protrudes (*dan tian* is the lower abdomen just below the navel). While there are many methods of actual breathing, we will focus on the *dan tian* method. The diaphragm should descend so that the abdominal wall protrudes during inhalation, and the reverse during exhalation.

The Basic Relaxed Breathing Exercise

The order of the Basic Relaxed Breathing Exercise is as follows: preparation, posture, breathing, ending. The main objective in preparation is to achieve a deep quietude of the cerebral cortex by adjusting the mind and vital energy. Choose a fairly quiet environment either indoors or outdoors preferably in fresh air. Wear some kind of loose fitting clothing. It is a good idea to rest about 20 minutes prior to the exercise so that you may obtain a relaxed state. Now, assume either of the two postures from above. Begin the quietude procedure by relaxing all parts of the body beginning at the top of your head and working your way down to your feet so as to achieve a natural state of comfort with the vital energy sinking into *dan tian*. To begin the breathing exercise the respiration should be natural and comfortable with each round being counted - the vital energy sinking into *dan tian* toward the state of returning every breath to its source.

Your practice sessions of breathing should at first last 5 to 10 minutes and eventually reach 20 to 30 minutes. Do not overdo the practice itself. Ending the practice begins with sitting quietly for a few minutes. Place your palms together and gently massage the area around *dan tian*, moving from small to large circles in a clockwise fashion for about 30 revolutions. Follow this by reversing the movement - from large to small circles in an anticlockwise motion for about 30 revolutions.

Normal and Abnormal Reactions

This simple breathing exercise has been said to help with hypertension, arteriosclerotic coronary problems, rheumatic arthritis, chronic bronchitis, emphysema, chronic gastritis, esophagus problems, neurosis, insomnia, and more. Normal reactions occur when the exercise is done properly and the practice strictly adhered to. Abnormal reactions occur only if the exercise is done improperly.



Fig. 2

(Continued on page 24)

THE GHOST IN THE MACHINE

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Abstract

In this paper we outline an as yet undocumented natural cause for some cases of ostensible haunting. Using the first author's own experience as an example, we show how a 19hz standing air wave may under certain conditions create sensory phenomena suggestive of a ghost. The mechanics and physiology of this 'ghost in the machine' effect is outlined. Spontaneous case researchers are encouraged to rule out this potential natural explanation for paranormal experience in future cases of the haunting or poltergeistic type.

Introduction

When investigating a haunted building it is good practice to attempt to exclude as many possible normal causes for the 'haunting' as possible. The ways in which normal earthly events might conspire to convey an impression that a house is haunted (or even beset by poltergeist behaviour, see Eastham, 1988) are numerous. Thus, all of the following may well be the more mundane cause of an ostensible haunt; water hammer in pipes and radiators (noises), electrical faults (fires, phone calls, video problems), structural faults (draughts, cold spots, damp spots, noises), seismic activity (object movement/destruction, noises), electromagnetic anomalies (hallucinations), and exotic organic phenomena (rats scratching, beetles ticking). The exclusion of these counter-explanations, when potentially relevant, must be the first priority of the spontaneous cases investigator. To this end, we feel the "virtual paranormal experience" reported and explained in this paper might be of interest to the spontaneous case research community.

Though many of the above counter-explanations for ghost-like phenomena may be quite easy to discount in any one case, at least some normal causes of seemingly paranormal phenomena may in fact be quite subtle, and not at all easy to discern for the untrained observer, as we hope to show in this paper.

The Case of the Ghost in the Machine

The first author's background is as an engineering designer and at the time of the incident he was working for a company that manufactured medical equipment. Three people worked in a laboratory made from two garages back to back and about 10ft wide by 30ft in length. One end was closed off by doors normally kept closed and the other end had a window, the other side of which was a cleaning bay. As an example of creativity with corrugated iron, this structure was home for anyone with a passion for playing with jets of water and foam.

The company's business was in the design of anaesthetic or intensive-care, life support equipment so there was always some piece of equipment wheezing away in a corner. When V.T. heard suggestions that the lab was haunted this was the first thing he thought could be behind it and paid little attention. One morning however none of the equipment was turned on and V.T. arrived just as the cleaner was leaving obviously distressed that she had seen something. As a hard nosed engineer V.T. put it down to the wild cats, wild other furry things, moving pressure hoses (as the pressure fluctuates, flexible hoses sometimes move) or some sort of lighting effect.

As time went on V.T. noticed one or two other odd events. There was a feeling of depression, occasionally a cold shiver, and on one occasion a colleague sitting at the desk turned to say something to V.T. thinking he was by his side. The colleague was surprised when V.T. was found to be at the other end of the room. There was a growing level of discomfort but the workers were all busy and paid it little attention. That is until V.T. was working on his own one night after everyone else had left. As he sat at the desk writing he began to feel increasingly uncomfortable. He was sweating but cold and the feeling of depression was noticeable. The cats were moving around and the groans and creaks from what was now a deserted factory were "spooky", but there was also something else. It was as though something was in the room with V.T. There was no way into the

lab without walking past the desk where V.T. was working. He looked around and even checked the gas bottles to be sure there was not a leak into the room. There were oxygen and carbon dioxide bottles and occasionally the staff would work with anaesthetic agents, all of which could cause all sorts of problems if handled inappropriately. All of these checked out fine so V.T. went to get a cup of coffee and returned to the desk. As he was writing he became aware that he was being watched, and a figure slowly emerged to his left. It was indistinct and on the periphery of his vision but it moved as V.T. would expect a person to. The apparition was grey and made no sound. The hair was standing up on V.T.'s neck and there was a distinct chill in the room. As V.T. recalls, "It would not be unreasonable to suggest I was terrified". V.T. was unable to see any detail and finally built up the courage to turn and face the thing. As he turned the apparition faded and disappeared. There was absolutely no evidence to support what he had seen so he decided he must be me cracking up and went home.

The following day V.T. was entering a fencing competition and needed to cut a thread onto the tang of a spare foil blade so that he could attach the handle. He had all the tools necessary but it was so much easier to use the engineer's bench vice in the lab to hold the blade that he went in early to cut the thread. It was only a five minute job so he put the blade in the vice and went in search of a drop of oil to help things along. As he returned, the free end of the blade was frantically vibrating up and down. Combining this with his experience from the previous night he once again felt an immediate twinge of fright. However, vibrating pieces of metal were more familiar to him than apparitions so he decided to experiment. If the foil blade was being vibrated it was receiving energy which must have been varying in intensity at a rate equal to the resonant frequency of the blade. Energy of the type just described is usually referred to as sound. There was a lot of background noise but there could also be low frequency sound or infrasound which V.T. could not hear. As it happens sound behaves fairly predictably in long thin tubes such as organ pipes and ex-garages joined end to end so V.T. started his experiment. He placed the foil blade in a drill vice and slid it along the floor. Interestingly the vibration got bigger until the blade was level with the desk (half way down the room) after the desk it reduced in amplitude, stopping altogether at the far end of the lab.

V.T. and his colleagues were sharing their lab with a low frequency standing wave! The energy in the wave peaked in the centre of the room indicating that there was half a complete cycle. It is important to understand that what we call sound is caused by variation in the pressure of the air around us. It is represented graphically as a wave. If someone were to shout at you the sound wave will travel from them to you transmitted by the air between you both, i.e. it is a travelling wave. However the wave sharing our lab was of just the right frequency to be completely reflected back by the walls at each end, so it was not going anywhere, hence it was a standing wave. In effect the wave was folded back on itself reinforcing the peak energy in the centre of the room. Once V.T. knew this he calculated the frequency of the standing sound wave as follows;

We should not be impressed by the apparent accuracy of the frequency because V.T.'s measurements were 'quick and dirty'. For example, the speed of sound can also vary depending on temperature and pressure so, overall, plus or minus 10% on the above figure would be a reasonable estimate.

There are now two questions. The first is where is the energy coming from? The second is what does an 19 Hz standing wave do to people? The first was answered very quickly when V.T. discussed the problem with the works' foreman who told him that they had installed a new fan in the extraction system for the cleaning room at the end of the lab. We switched off the fan and the standing wave went away. The second question required a bit more research. A book by Tempest (1976) was consulted and a couple of interesting case studies were found.

"Noise consultants were asked to examine one of a group of bays in a factory where workers reported feeling uneasy. The bay had an oppressive feel not present in the adjacent areas although the noise level appeared the same. Management workers and consultants were all aware of the unusual atmosphere and on investigation it was found that low frequency sound was present at a slightly higher level than in other bays. However the actual frequency of the offending noise was not obvious. The cause of the noise was a fan in the air conditioning system.

Workers in a university radiochemistry building experienced the same oppressive feeling together with dizziness when the fan in a fume cupboard was switched on. Conventional sound proofing had reduced the audible sound to the point where there was hardly any difference in the noise with the fan on as off. The situation effected some people so much that they refused to work in the lab. It was concluded that the low frequency component of the sound was responsible." (p81-82.)

On page 107 the book lists symptoms caused by frequencies in the range 15-20 Hz. V.T. had no idea of the amount of energy (spl) the infrasound had because we had nothing to measure it with. These effects are quoted by Tempest at a spl range of 125-137.5 dB which would be very damaging to hearing if the frequency were in the audible range. It is a considerable amount of power but is not thought of as unreasonable by those V.T.

$$f = v / \lambda$$

$$\text{where } \lambda = 2 \times l$$

$$f = \text{frequency of sound}$$

$$v = \text{velocity of sound (1,139 f/s)}$$

$$\lambda = \text{wavelength (} l \times 2 = 60\text{ft)}$$

$$l = \text{length of room} = (30\text{ft})$$

$$\text{so we have } f = 1,139 / 60 = 18.98 \text{ Hz or Cycles per second}$$

has talked to considering that the energy was originated by a one metre diameter extractor fan driven by something like a 1 kW electric motor. In any case, the symptoms listed by Temple (1976) for low frequency sound waves are; Severe middle ear pain (not experienced), persistent eye watering, and respiratory difficulties, sensations of fear including excessive perspiration and shivering.

Table IV on page 212 of this book shows frequencies causing disturbance to the eyes and vision to be within the band 12 to 27 Hz. A more recent book by Kroemer (1994) describes the effects of low frequency vibration as follows;

"Vibration of the body mostly affects the principal input ports, the eyes, and principal output means, hands and mouth." (p. 287).

"Exposure to vibration often results in short-lived changes in various physiological parameters such as heart rate...At the onset of vibration exposure, increased muscle tension and initial hyperventilation have been observed." (p. 280).

Tables 5-12 of Kroemer (1994) on p. 288, indicate that the resonant frequencies of body parts are; Head (2-20 Hz causing general discomfort), Eyeballs (1-100Hz mostly above 8 Hz and strongly 20-70Hz effect difficulty in seeing). However, different sources give different resonant frequencies for the eye itself. The resonant frequency is the natural frequency of an object, the one at which it needs the minimum input of energy to vibrate. As you can see from above, any frequency above 8 Hz will have an effect and some sources quote 40Hz. Most interestingly, a NASA technical report mentions a resonant frequency for the eye as 18 Hz (NASA Technical Report 19770013810). If this were the case then the eyeball would be vibrating which would cause a serious "smearing" of vision. It would not seem unreasonable to see dark shadowy forms caused by something as innocent as the corner of V.T.'s spectacles. V.T. would not normally be aware of this but its size would be much greater if the image was spread over a larger part of his retina.

Another NASA report (NASA Technical Report 19870046176) mentions hyperventilation as a symptom of whole body vibration. Hyperventilation is characterised by quick shallow breathing and reduces the amount of carbon dioxide retained in the lungs. Note that Tempest (1976) also mentions respiratory difficulties caused by frequencies in our range. Hyperventilation can have profound physiological effects. For example, Flenley (1990) describes the symptoms of hyperventilation as "breathlessness usually at rest, often accompanied by light-headedness, muscle cramps, fear of sudden death and a feeling of difficulty in breathing in". Fried (1987) describes a panic attack as "a synergistic interaction between hyperventilation and anxiety." and suggests that as the carbon dioxide is expired physiological changes cause the body to respond by feeling fear. This feeling of fear activates the sympathetic nervous system which increases the respiration rate making the hyperventilation worse. The panic attack will therefore feed itself and increase in intensity. This would seem consistent with V.T.'s experience of fear and panic when the "ghost" appeared. V.T. knows from the experiment with the foil blade that the peak energy, known as an anti-node, was in line with the centre of the desk. As V.T. sat up and turned to look at the object he moved from this zone of peak energy to a zone of slightly lesser energy and the ghost disappeared!

Exorcising the standing wave ghost

Once the problem was recognised a modification was made to the mounting of the extractor fan and our ghost left with the

standing wave. Low frequency sound is not easy to detect without the proper equipment. It was sheer luck that the foil blade happened to be the right length and material to react and reveal the presence of the standing wave (although 19Hz might just be heard on its own, it is in fact unlikely to exist alone so other sounds would drown it out). V.T. has since heard of a similar experience to this which happened in a corridor in a building that had a wind tunnel in the basement. The wind tunnel was on at the time of the sighting but V.T. was unable to do any measurements. Long tubes such as corridors are ideal places for standing waves especially if they are closed at both ends. The resonant frequency of one person's body parts would also be different from another so standing wave resonances may affect one individual but not another. Our advice for researchers in the future is to be very wary of ghosts reported to haunt long, windy corridors! □

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THE BORDERLAND EXPERIMENTER

EXPERIMENT: ODIC OBSERVATIONS

by James Borges

In the mid 1800's Baron Karl von Reichenbach opened up a whole vista of new knowledge when he discovered the existence and properties of what he called Od force. This force flows from minerals and light, in plants and animals, and even radiates from the stars. The Od, Odic force was named after the Old Norse god Odin, the "all transcending one," and the old Norse word "voda" which means "I go quickly...I stream forth". Od was seen to dance and glide in spectacular beauty when it flowed along magnets and crystals. It permeates all things yet certain materials seemed to focus it more than others. Reichenbach used the term "concentrator" when discussing Od sources, Od is not generated by these objects at all. He declared that the Odic streams "flowed on eternally." It flows through the Earth and travels along the light that streams from the Sun, Moon, and stars.

This mysterious force is everywhere present actually seen by so few. The Baron being a scientist developed his ideas through rigorous experiments. Special darkrooms were created that were connected to wires that would conduct Od from plates that collected the force from the Sun or Moon. Minerals, magnets and crystals were brought into the darkroom via special rotating tables that permitted no light to enter. Various displays of Odic force manifested themselves during these sessions, elaborate descriptions are to be found in his own writings. The Baron curiously enough, utilized sensitives for his research. During his early work with Somnambulism he was introduced to the idea of sensitives, his idea that sleepwalkers are sensitive or allergic to something being carried in on the moonlight, an Odic agitation. This experience opened his mind to the possibility of humans sensing the Odic force. In his wide travels he met many people who claimed to be "sensitives". If they were used in his research, the Baron put them through rigorous tests. He used a wide range of sensitives from medical persons to a few who were from asylums. The Baron would eventually begin to see these Odic displays himself in small measure after his persistent endeavor in Odic research. The sensitives are however the main source of much of the information we have about the Odic force. One of Baron von Reichenbach's most moving accounts come from his introduction of bar magnets into the darkroom.

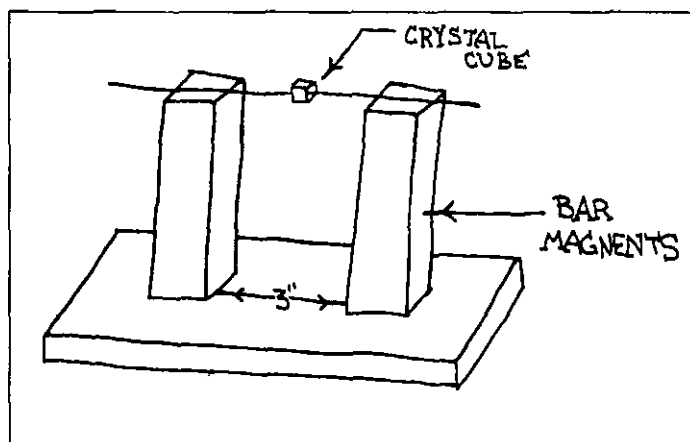
A bright blue flames issued from the north pole, these were cool and soothing. From the south poles red flames that were hot and irritating. Glittering rainbows, or dark rainbows could be seen radiating around the largest magnets. Magnets were then used as the strongest Od focuser until crystal formations were introduced to the sensitives. When Reichenbach introduced a large crystal into the darkroom it appeared to be streaming with fine white Odic light of great power. *Lost Science* by Gerry Vassilatos summarizes Reichenbach's descriptions so well I'll just quote "The sharp crystals point projected a deep blue Od jet, some eight inches long. This bright blue projection was in constant motion. Emitting numerous sparks, the flame-jet in the space beyond the sharp point was tulip shaped. Turning the crystal around, the broken crystal base revealed a dense red and yellow smoke." Reichenbach also discovered that this Odic force would flow through wires and that flames and hot and cold sensations traveled along their

length.

While at first glance it might seem that only sensitives can access these experiences, or that these experiences are the vain imaginings of deranged minds. It may be possible for everyone to participate in this knowledge. Rudolf Steiner, the founder of Anthroposophy and a pioneer in spiritual science, advanced the ideas of an ether. Steiner's Ether and Reichenbach's Od having very similar properties. Steiner be-

lieved that all human beings had senses that could perceive the ethers, and that especially through Initiation and mental discipline these senses could be awakened. This is a very important idea, the mind may also be trained to see the Odic force through a gradual awakening of the senses. This explains the Baron's ability to observe the Odic displays after a vigorous and extended research. His consciousness was expanded to perceive the subtle qualities.

These powerful claims are worth of further investigation. The experiments of the Baron can be reproduced. By combining several of the Baron's discoveries into one small unit we can focus the Odic force in a darkroom. We can easily obtain and combine magnets, wire, and crystals in a darkroom. We may not observe the colorful displays described by Reichenbach's sensi-



tives at our first attempt, we must wait and watch. The Process itself must precede the experience. Experiments in this vein serve as excellent objects of meditation, a means for the senses to develop.

Preparation for these experiments requires a darkroom. This can be any room at night, to insure darkness place heavy wool blankets over windows and doors. The blankets should insure that no light will enter, especially from under the door jam. Prepare a place for a jar to be eye level on a table three or four feet from a comfortable chair where you can remain relaxed and alert. The length of time the experimenter can remain in the dark with his mind focused on the object should be prolonged as long as possible. The length of time should steadily grow longer. The attention is being disciplined not to wander, which is difficult, as the eyes tend to wander about looking for light. The more the eyes become attuned to the Odic luminosity the longer the gaze may be focused, and more time in deep observation. Keep a written record of all experience, even the lack of phenomenon. Observe without judgment, without the "lust of result". The entire experiment runs about a week, and is meant to be repeated for up to a year or longer. The senses will gradually become more sensitive to the subtle formative forces at play within growing crystals and along the surface of the bar magnets.

EXPERIMENT ONE: Crystal Od

In large jar mix one cup of salt with two cups water. Mix well to create a saturate solution. Drop three or four lengths of wire about four inches long into the solution. Place jar uncovered under a bright desk lamp for several hours.

Observation 1: (before crystals form) Close jar and bring into the darkroom, place on table. Observe any phenomenon and write it down in your record. Return the jar to the bright lamp for several more hours. Repeat this process for several days until crystal salt cubes form on the wires,

Observation 2: Bring the jar with the crystals into the darkroom, observe any phenomenon and write it in your record. Note any similarities or differences in the Odic light that you perceive.

Observation 3: Remove the wire with salt crystal from jar, gently shake off excess water. Retire into darkroom. Hold one end of wire with right hand and the other with the left hand.. Observe any Odic effects from the crystal. Note any sense of Odic currents in the hands, arms, chest. Write these experience in your record.

EXPERIMENT 2: Magnetic Od

The Odic forces focused by magnets are good for observation. The darkroom, chair and table along with two bar magnets are required for these observations.

Observation 1: Place single magnet on table in darkroom. Observe any phenomenon, write in your record.

Observation 2: Place two magnets in proximity to each other: attracting one another but not touching. Note any differences from the single magnet observations.

Observation 3: Place two magnets in proximity to each other;

repelling each other. Note the differences from the single magnet and any differences from the attracting magnets.

EXPERIMENT 3: Focused Od

Whereas the previous experiments dealt with focused Odic forces, this experiment is an attempt to show that Odic concentrators (magnets and crystals) may be combined to achieve a very high concentration of the Odic force.

Observation 1: Place two bar magnets upright three inches apart from each other. Suspend each end of the wire with a crystal from the top of the bar magnets. Observe and record as before.

Observation 2: Suspend crystal and wire from either face, front or back, of the upright magnets. Observe any differences and record.

Observation 3: Suspend crystal and wire from either face of the upright magnets. Then suspend a bare wire from the opposite side near the base of the magnets. □

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THE PUNDIT CURMUDGEON

MAGNETIC WATER — A BRIEF HISTORY

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It is hard to believe that there is apparently no generally recognized definition of the term "magnetic water". Although this expression would not make any list of the most frequently employed terms the use of it is gradually increasing as more and more attention is being paid to the misnamed field of "alternative medicine." The reason for this is that those outside the monopolistic field of allopathic or drug medicine are increasingly understanding that magnetic fields when used in connection with water can and do exert some profound effects on probably all of the commonly recognized forms of life.

The water can be directly treated with a magnetic field and the resultant product can be used for treatment purposes or the magnetic field can be directed at or applied so as to effect water which is already within a plant, animal or other life form so as to produce magnetic water *in situ* within the life form. This latter mode of applying magnetic energy is easy to overlook because we seldom take the time to consider that it should not make any difference as to whether or not water is in a conventional container or is contained by membranes in various life forms as it is treated with a magnetic field. It is considered at least possible that magnetic energy has other non water related functions within probably all living life forms of any type.

It is hard for at least the writer to realize that most individuals do not recognize "magnetic water" as being a generic term including at least 3 seldom identified species. This is the result of the inherent nature of magnetism and the fields associated with it. Practically everyone is familiar with the fact that a magnet has separate fields associated with its so called "north" and "south" poles. Water treated with the field or fields associated with either of these poles is a separate form of magnetic water. The third of these species is not often recognized. It pertains to the product of the concurrent use of both types of polar energies on water. At times the resultant product does not appear to have merely the characteristics one would expect by using the two polar energies together, but seems to cause effects which either are or are close to being synergistic in nature.

Confusing Terminology

Unfortunately there is a possibility of an ambiguity arising relative to the type of polar treatment used with water whenever

magnetic water is used. In theory some recluses from modern technology might erroneously consider that this expression designates water which acts as a traditional magnet. Since water is not normally considered as being magnetic in character most individuals will probably consider that this expression designates water which at least has had some exposure to or association with at least one pole of a magnet. Probably this would be acceptable as a definition if it included the phrase "so as to result in an alteration in at least one property or characteristic of the water."

Unfortunately such a modified definition of magnetic water will not avoid confusion because of another fact - the "loose" manner in which "magnetic" is employed in various fields. Even electrostatic attraction and surface adhesion involving "plastic" or polymer sheets are classified by some as being "magnetic." The principal use of "magnetic" in connection with phenomena which does not entail any action of a real magnet is in the field of psychology.

The excellent, well researched, current book *From Mesmer to Freud* by Crabtree (? 1993) illustrates this last manner of employing "magnetic" as well as the generally accepted, essentially technical manner of utilizing the word. In this text Mesmer is quoted as saying (p.6):

"I have discovered that steel is not the only substance that may be used to receive magnetic power. I have been able to magnetize paper, bread, wool, silk, leather, stone, glass, water, various metals, wood, men, dogs - everything that I touch. And these magnetized objects have produced the same effect on patients as have magnets themselves."

The word usage in this far reaching claim is undoubtedly responsible for "magnetic" being widely used in confusing, somewhat related but also distinctly different manners.

The text in Crabtree's book illustrates a number of current, confusing dual uses of magnetism in the field of psychology. In this particular discipline the word is employed in such a way as to frequently make it troublesome to determine if the author is discussing the physical action of a magnet or some properties which have a relationship to the physical properties of a magnet or its flux fields. As illustrated by the Crabtree text the word *animal* is often, but not always employed in the psychological

field in connection with *magnetism* in a seemingly unsuccessful effort to avoid a misunderstanding or confusion.

There seems to be no point in illustrating various other usages of "magnetism" in the many circumstances in which there is a distinct possibility of a misunderstanding of the precise meaning of the word. Commonly anything which is not "sticky" and which will tend to adhere to something else is referred to as "magnetic" even though it has no recognized magnetic properties or characteristics in the sense in which the word "magnet" is employed in physics. This confusing type of usage is so entrenched in English that there is virtually no chance of it ending.

Magnetic Water Has An Extensive History

No one should assume from the previous discussion that Mesmer was the first to employ magnets. The history of the initial use of magnets and probably water which had been exposed to naturally occurring lodestones permeates antiquity. Mesmer occupies a controversial place more or less at the start of the expansion of knowledge more or less coinciding with the industrial revolution in Western society. Although he used magnetism in the sense in which this term is used in a physics text from the beginning of his work up to about the middle of his curative activities he seems to have gradually phased out the use of magnets in favor of what is now referred to as *animal magnetism*.

There is no need to review the hearsay and the few documents constituting the history of such classical magnetism in connection with this document. This topic was far from unknown during the middle ages of Western civilization. A letter by Petrus Peregrinus in 1269 is entitled to special mention as constituting a significant, unambiguous step in the recognition of the polar character the lodestone magnets of the time of his letter and a number of other important items. The extent of his understanding of magnetism is illustrated by the fact that he has the honor of making the first known proposal for a permanent magnet powered perpetual motion type mechanical motor.

From a practical view point in Western society the initial serious consideration of the differences between the poles of a magnet for healing and related purposes having a significant effect on the development of technology is found in the work of the alchemist Paracelsus in the last half of the sixteenth century. Although he referred to one of these poles as an attracting pole and the other as a repelling pole and on occasions utilized their separate properties he seems to have been primarily concerned with the concurrent use of both of these poles as they are associated in a complete, conventional magnet.

The Remedies of Paracelsus

The level of the sophistication of Paracelsus' work is illustrated by the fact that until at least about the mid 1800's a primary one of his remedies was referred to as "The celebrated *Magisterium Magnetis*" (Howitt's translation of Ennemoser's *The History of Magic*, University Books Edition, 1970, page 234). This composition has been identified as "...a tincture extracted from the magnet." Unfortunately as this particular article is

being prepared no translation of Paracelsus' works into English is reasonably accessible to the writer. One can expect that such a translation would elucidate the exact nature of such a tincture.

Several items in addition to the absence of such a translation make it rather hard to understand the exact nature of such a tincture. In Paracelsus' days the word "tincture" appears to have been primarily used to designate wine - a solvent system comprising a mixture of ethanol and water - which contained in solution either a composition named in identifying the tincture or one or more items derived from the composition. Since known permanent magnets are not soluble in either of such solvents or in a system containing both of them it is rather clear that this celebrated *Magisterium Magnetis* must not have been a "tincture" in the primary sense of the term as it was employed in the time of Paracelsus.

Instead it probably was an allegedly "enhanced" solvent or solvent system of the type formed by leaving a gem stone or the like in or adjacent to wine for an extended period. The term "tincture" has often been applied to compositions of this general category. The periods used in creating them were (and are) often correlated with the phases of the moon or bright sunshine. If the *Magisterium Magnetis* tincture was of a type coming within this particular definition of the word "tincture" it was probably composed of wine which had been merely exposed to a permanent magnet for a period of sufficient length so at least in theory the wine could receive and "hold" or be altered by some of the "characteristics" inherent in the fields associated with the magnet. Logically it seems that Paracelsus should have added one or more inorganic compositions to the wine in the hope of increasing the receptivity for the magnetic flux.

It is clearly established that Paracelsus also used a mixture of ground up permanent magnet particles in honey in treating at least digestive ailments. Since when a permanent magnet is broken up into a series of separate particles these particles are separate permanent magnets. This use of a powered magnet material by Paracelsus can be considered to constitute the use of a multiplicity of separate magnets in such a manner that the net effect of their use is more or less the same as the concurrent use of the fields of both of the poles of a series of magnets.

There is an "aside" to this which is worth noting. When a magnet is broken up into particles which are approximately the size of the domains in the original structure of the magnet these domains are more powerful per unit of weight than the original magnet. A consequence of this is that the honey-magnetic particle mixture used by Paracelsus probably had very distinct magnetic characteristics.

Who Originated Magnetic Water?

It is almost a certainty that the *Magisterium Magnetis* tincture composition developed by Paracelsus must have contained some water if, for no other reason, it was probably impossible to remove all of the water from a mixture such as wine using the technology of the middle ages. There is no question but that his honey-powdered magnet composition contained water because honey is not just a sugar composition. Water is a necessary ingredient of honey which provides the physical flow characteris-

tics of this material.

From all of these factors there is no question in the writer's mind but that Paracelsus should be given credit for calling attention to at least two forms of magnetic water. However, he is not generally given this credit. Instead this credit is generally awarded to van Helmont (1577-1644), another one of the many alchemists found through out the middle ages. Van Helmont deserves a major position in the history of the uses of magnetic energy because of his pioneering book, *On the Natural and Legitimate Magnetic Cure of Wounds* which was published in 1621. This text got him in a series of "troubles" which led to his imprisonment. Unfortunately no English translation of this text seems to be reasonably available.

By the early 1800's the proposition that a magnet could have an effect on either water or a composition containing water so as to impart antimicrobial properties had advanced to the extent that there was an established recognition that there were three kinds of magnetic water. An understanding of the salient points in the history of magnetic water does not require a require a listing of the names of those who were primarily responsible for an increase in the understanding of this topic during this period. It is equally immaterial if such individuals are labeled as either scientists or alchemists.

In spite of these factors it probably should be mentioned that Mesmer discovered that so called "sensitives" could distinguish between a sample of water from a specific source which was treated by passing a magnet over it several times and a sample of water from the same source which had not been exposed to a magnetic field. It is presumed that this procedure concurrently used the energy from both of the magnetic poles to the same extent. This knowledge seems to have been more or less passed over with the passage of time. Perhaps this is due to the fact that for nearly two centuries Mesmer has been held in low esteem by many.

Hahnemann's Materia Medica

The utilization of the three different types of *in situ* formed magnetic water in the early 1800's is set forth in the work of the founder of homoeopathic medicine- Samuel Hahnemann. He clearly sets forth this subject in his *Materia Medica Pura*, Vol. II in an extensive discussion on what we currently refer to as "magnetic healing" (p.60-113). This discussion covers the topic of magnetic healing rather completely, even starting off with a historically interesting section on magnet making which pre-dates the use of a current and a coil for this purpose.

In his text Hahnemann identifies three different types of magnetic treatment::

- (1) Magnes
- (2) Magnetis Polus Arcticus
- (3) Magnetis Polus Australis

It appears that Hahnemann had a patient hold one end of an elongated bar magnet in one hand and the other end in the other hand to obtain this first type of treatment. The other two types were achieved by holding only one or the other end of the magnet. It is interesting that current homeopathy uses treatments designated by the second and third of these headings and

substitutes "Magnetis Poli Ambo" for the designation "Magnes" used to indicate a treatment involving both poles of a magnet.

Different manners of referring to these poles can lead to confusion. In an effort to avoid this it is noted that the concurrent use of both of the poles of a magnet may be conveniently referred to as dual polar treatment while treatment with the energy of a north pole may be referred to as north pole treatment and while treatment with the energy of a south magnetic pole may be referred to as south pole treatment. Also the south pole seeking pole is frequently marked with the color red and referred to as the "red" pole to indicate caution as to its use and that the north seeking pole is often marked with the color green and referred to as the "green" pole to indicate that it can be used with relative safety.

Although Hahnemann does not seem to attribute a distinguishing "action" to the concurrent use of both of the poles of a magnet he does offer the following comments on the results achieved when the poles are individually used (p.105):

"The south pole seems to excite the flow of blood, and particularly metrorrhagia in its primary action, consequently to cure it homoeopathic ally. The north pole seems to do the reverse."

One could argue that this indicates that the effects of the concurrent use of the both of the poles of a magnet should cancel out so that no net effect would result. Hahnemann apparently recognized that this was not the case by his disclosing the concurrent use of the energy of both poles of a magnet in treating a number of conditions which he specifically enumerates. If there was no effect from the simultaneous use of both north and south polar energies Hahnemann would not have obtained any benefit from the concurrent use of them.

Current Homoeopathic Magnetic Water

It is interesting to note that early homoeopathic treatments involving magnetic energy did not directly treat water with a magnet and then use the water for treatment purposes. Hahnemann apparently achieved the same effect as a result of the flux from a magnet contacting the water in the body adjacent to the skin. At some unknown date since the early 1800's homoeopathic practice apparently changed since in the *Homoeopathic Materia Medica*, ninth edition, by Boericke, ? 1927, "Magnetis Poli Ambo" is defined as "sugar of milk or distilled water exposed to the influence of ..." both of the poles of a magnet.

This is quite interesting in that it suggests that milk sugar (lactose) may be affected by both magnetic poles in a manner which is probably somewhat related to the manner in which water is affected by such energy. If this is true shouldn't other compounds, especially other sugars, be amenable to dual polar treatment? Logically it would seem that the very small magnets in honey developed by Paracelsus should be regarded as triple acting in that this mixture must operate using (1) the effect of the small magnetic particles, (2) the effect of magnetic water in the honey and (3) the effect of the magnetically treated sugars in the honey. Only experimental work can provide adequate answers to these and related questions.

The restriction in this definition to the use of distilled water

instead of either deionized water or normal naturally obtained or tap water may be misleading. Probably this definition does not equate deionized water with distilled water because (1) deionization had not been extensively developed when it was written or (2) as a consequence of the failure of the person who actually wrote this definition being relatively unfamiliar with advances in chemistry at the time he decomposed it.

It would have been logical for this definition to have been restricted to the use of distilled water merely because the latter is, as a practical matter, free from contaminants. Many consider this to be a necessity in the medical field while ignoring that it is virtually impossible to completely isolate a person from all contaminating influences. While distilled water is not "pure" in the sense in which this word is used to describe the water employed in a nuclear reactor it is or is almost mineral free and probably contains only extremely small trace amounts of silica or a similar inorganic. As opposed to this the usual tap or naturally occurring water contains at least some easily apparent mineral content.

A Magnetic Field Is Necessary To The Existence of Life

Although essentially historical knowledge as embodied with the preceding and other practices indicate the desirability of using magnetic energy in connection with human life it is to be anticipated that many, and in particular, the drug oriented doctors of allopathic medicine, will reject this knowledge on the ground that there is no "scientific" proof of any need for any life form to be treated with magnetic energy. Any such attitude is asinine.

To discuss this fully one would have to discuss the varying meanings of "scientific" in our society and to discuss the need to accept as fact various obvious truths in the absence of expensive double blind tests. People make decisions and act upon life's needs on the basis of the information which is available to them. The world would go bankrupt and people would be prevented from doing what is needed at any specific time if such tests were uniformly required as to everything. Several things have indicated that there is more than adequate reason to acknowledge that life as we know it is dependent upon the magnetic field connecting opposite magnetic poles contacting a life form at any specific time.

The first but not the most important of these are the statements of Dr. Valerie Hunt, a retired UCLA professor, relative to her having "borrowed" a mu cage at UCLA. She has orally indicated that she placed several individuals in it and then decreased the magnetic field within the cage. Gradually the energy or chi of those within the cage deteriorated until such time as the test was stopped and the magnetic level within the cage was brought up to the normal ambient level. In discussing this she confirmed that if the field had been decreased sufficiently that those in the cage would have died and that it was apparently possible to kill living organisms by adequately depriving them of magnetic energy.

Another of these indications is the report in the book *Magnet & Magnetic Fields of Healing by Magnets* by Dr. Albert Roy Davis et al, revised edition, published in 1982, concerning work per-

formed at or by a Biomagnetic Research Foundation in Evanston, Illinois. From the content of this text it is apparent a living animal can also be killed by being "saturated" with an intense magnetic field. From this it is logical to speculate that each living "thing" of either an animal or vegetable character probably cannot tolerate and will be killed when subjected to a specific level of magnetic energy which is unique to such "thing."

A degree or type of conformation of the truth and accuracy of this position is found in the writer's experience with his hot tub. The initial of such experience was discussed in an article appearing at page 46 in the 3rd quarter, 1997 issue of *The Journal of Borderland Research*. In the time interval since this earlier article was written this hot tub has been satisfactorily operated using a single ferrite magnet instead of the usual pool chemicals and has remained at least visibly free of any sort of growths appearing in or at the edges of the water in the tub. In view of the fact that such growths had been previously apparent this is strong evidence that the fields associated with this magnet must either be intense enough to either kill or attenuate normally visible growths in the tub.

One cannot help but wonder why this word "saturated" was used in the Davis et al book to designate a dosage or level of magnetic energy apparently beyond a lethal level. Unfortunately the continued use of it will only lead to confusion since "saturated" is normally used in connection with ferromagnetic materials to indicate when a material which can conduct and/or restrain magnetic flux will no longer conduct and/or restrain any additional flux beyond that which is already in it. To avoid confusion this specific level probably should be referred to as a "critical" level. This latter is preferred since it is an established generic term used to designate an area or region on a curve where there is a recognizable phenomena.

Unfortunately both "saturated" and "critical" suffer from a common defect when used to designate a level of magnetic energy which apparently kills a specific microbial growth. It seems an almost certainty that microbial growths are in fact attenuated as they are exposed to an increasing magnetic field prior to the intensity of the field reaching a value terminating life as we understand it. From a practical point of few it normally makes little difference in results if a specific life form is rendered ineffective by being attenuated or is in fact completely killed. Virtually everyone is aware of exceptions to this statement.

The expression "critical level" may be somewhat objectionable for another reason. There may be several levels of magnetic field sensitivity in connection with a specific life form which in one manner or another may be important enough to be termed critical. Such a level need not be of a life attenuating or threatening character. This is demonstrated by such diverse items as the flight paths of many birds and the ability of many dowsers to respond to minute differences in an ambient magnetic field. An excellent discussion of the latter seldom discussed topic is found in Dr. Tiller's excellent text *Science and Human Transformation* ? 1997, at page 132 under the heading "The Dowsing Response."

It is believed that the existence of several "critical levels" is also demonstrated by the relatively new magnetic devices cur-

rently sold in at least Japan to render an area bird free are believed to set such a level. They are said to be able to keep birds out of an area about 70 feet in diameter around a device of this type. These devices are believed to demonstrate the sensitivity of birds to the intensity or concentration of any ambient fields they may enter. To at least a bird the point at which the increasing level of a magnetic field causes it to vacate an area has got to be "critical".

Another item relating to this existence of "critical sensitivity of life forms to the intensity of an ambient field is the manner in which the microbial growths proliferated when a relative small magnet was used in the hot tub mentioned in the preceding. Perhaps the shock of the comparatively rapid progress of such growths should not have been as significant as it seemed in view of the extensive reports relative to the magnetic treatment of seeds and plants to alter their normal growth patterns and to achieve many other results.

Conclusion Relative to the Dependence of Life on the Presence of a Magnetic Field

From only these specific items discussed in the preceding section it is rational to conclude that the survival of any specific life form is dependent upon that life form being exposed to a magnetic field and that the effect of a magnetic field on the life form will gradually increase when the field is increased from zero until a critical maximum is reached and then will decrease until such time as the magnetic field is reduced sufficiently to attenuate and then kill the life form. It is only logical that this should be capable of being plotted using a traditional type of bell shaped curve. Many other things other than these "clues" could be discussed in supporting these conclusions.

A corollary to these conclusions is that they are valid when water or, perhaps in some extreme cases, another solvent, is associated with the life form. A careful review of all of the "clues" discussed also indicates or at least strongly suggests that water must be present whenever there is an interaction between a magnetic field and a life form. This is related to the fact that an active life as we know it is completely dependent upon water being present within the life form. Such items as freeze dried bacteria probably are "alive" in a philosophical sense, but they are definitely not active until being rehydrated. It is doubted if they are significantly influenced by a magnetic field while they are in this dried state.

A Few Factors Relative To Some Aspects Of The Nature of Magnetism

As previously indicated no one should assume that the three items discussed in the preceding are the only evidence in support of the preceding conclusions. No information other than these items was and is considered necessary to support these conclusions. The latter are in fact supported by much evidence which has been accumulating since at least the middle ages. Unfortunately for many individuals much of this evidence is rendered confusing and misleading by a traditional, classical manner of considering the nature of magnetism. Even this comparatively simple discussion is capable of being misunderstood by

some as a consequence of this situation.

The preceding conclusions relative to water (or, perhaps, another solvent) being present whenever there is an interaction between water and a life form more or less imply that they are based on a traditional view which is still taught or at least implied in most elementary schools - the view that a magnet is a device which has to have two different poles and in which a stream of an intangible called "magnetic flux" extends between these poles. As physics has been traditionally taught it has been more or less implied that the density and/or quantity of flux has to be the same at each of the poles and that this flux more or less diverges as it extends from and approaches these poles in such a manner that the flux level or quantity is the same at each of these poles.

Regardless of how practical this type of quasi science fiction may or may not be or may have been in teaching the fundamentals of magnetism it ignores a long known familiar fact - every "ordinary" magnet has at least two polar regions which have distinctly different associated flux fields. Limiting this statement to common magnets makes it possible to avoid a semantics discussion as to whether or not a hollow sphere in which the entire exterior surface serves as a single pole. This category of fiction also ignores many fascinating emerging facets of magnetism such as the fact that increasingly it appears that magnetic energy is a form of wave energy which, in at least some situations, acts more or less like sound energy and such as the probable existence of more than one form of energy emitted from at least one pole of a magnet.

This conclusion relative to magnetic energy being a form of wave energy is a result of the consideration of the way magnetic nodes appear on an elongated bar magnet and the manner in which related nodes or node like areas appear on a comparatively flat magnet which has been magnetized in accordance with conventional practice so as to have the flat sides of the magnet as its poles. These nodes or nodal areas appear much like nodes or nodal areas appear on a vibrating flat metal plate covered with a powder. The node formation of an elongated magnet is demonstrated in an interesting way by a story found in the book by Dr. Davis et al "Magnet & Magnetic Fields or Healing by Magnets" noted in the preceding. According to this text of an elongated length of metal pipe being held next to an elongated magnet extending in the same direction as the pipe will have nodes or nodal areas corresponding to those found in a taut, vibrating string. The subject of nodes or related areas in some magnets is being embodied in another article which probably will be published later this year.

The "traditional" views relative to the energy or energy fields associated with the poles of a magnet seem to have ignored the fact that there are distinct differences in the fields associated with these poles as briefly mentioned in a preliminary manner in the preceding discussion relative to the history of magnetic water other than the fact that opposite poles attract and that like poles repel. These were extensively studied by Baron von Reichenbach in the early-mid 1800's. Unfortunately he was not primarily interested in the interaction of a magnetic field with water.

His book "The Od Force" published in 1854 does, however, contain the following interesting statements relative to the effect of the energy associated with different poles of a magnet on water (p.43):

"You may then place again, on each of the poles, a glass of water, and, after six to either minutes, cause the sensitive to taste either of them. He will declare the glass placed northward to be fresh and cool; that on the southward pole, on the contrary, lukewarm and disgusting; and if you wish once more to vex the necromancers of chemistry, they will get angry, and, in order to escape from this perplexity, will deny the whole fact, though evident as sunlight, affirming it to be not true."

It is interesting to contrast this statement with the quotation from Dr. Hahnemann reproduced in the preceding.

It is also interesting to speculate what the effect of the disclosure of this reference would have been on the prosecution of the patent application which apparently culminated in the decision *Fregeau v. Messinghoff*, D.C., 1984, 224 USPQ 238. This application concerned the patentability in the US of the treatment of various fluids - specifically common beverages - with a magnetic field so as to improve their flavor. In effect the decision held that the achievement of a subtle but detectable change in the treated fluid is unpatentable subject matter, particularly when the results run counter to what one would expect on the basis of generally held scientific views. If the US PTO consistently follows this decision U.S. patent applications concerning subtle energies are seldom if ever going to mature into patents.

The Nature of Water

Baron von Reichenbach did not specify that he used any specialized type of water in producing the distinctly different types of magnetic water he described. The statement quoted in the preceding defining "Magnetis Poli Ambo" as a form of magnetic water formed either of a specific sugar or of distilled water at least suggests that magnetic water must be or, perhaps, should not be formed from common water. As is apparent from this there is a divergence of views as to whether the water used to form magnetic water should or should not be of a specific type.

The view of one researcher who apparently was having promising results treating patients with a common ailment with what he described in print as "magnetic water" is that mineral containing water must be used in producing magnetic water because the mineral content provided something for a magnetic energy to "hang on to" or engage so that it would remain in the water. The writer's very limited experience is to the effect that magnetic energy is increasingly effective as the water used becomes increasingly "loaded" with anything, and, especially when it contains or is contained in organic material.

The answer as to what kind of water should be used with either one of both of the poles of a magnet in forming a composition capable of being called "magnetic water" is undoubtedly tied up with the issue of the nature of water under normal ambient conditions. This last qualification is normally omitted from a discussion of this subject. It is needed since it is to be expected that frozen water, water vapor and water nearly at it's freezing

point or its boiling point will have decidedly different properties - including different manners of interacting with a magnetic field.

It is tragic that so little is known and that so limited amount of what is known has been published on the nature of liquid water. It is a complex subject. Probably no one is really qualified to discuss it as an expert. For the purposes of trying to determine or define what is in fact "magnetic water" and at least some of the properties of the latter it is unnecessary to delve into a discussion of the well known properties of water which make it vital to life as we know it.

There is evidence that under normal conditions water is more than just a mixture of its molecules, ions resulting from its disassociation and complexes of these ions. While many words have been spent in attempting to describe the action of water in placing compounds in solution it is considered that there is still very little "basic" knowledge on this topic. There is good reason to believe that the ability of water to place a myriad of structurally different compounds and complexes in solution is related to its ability to form chelates or similar complexes which will hold many different materials from adjacent water molecules or polymer like chains of these molecules or complexes based on their ionization.

Some have attributed to it the ability of water to form polymer like flexible chains using covalent and hydrogen bonds. There is good reason to speculate that these are present in chelating structures formed by water more or less resembling or suggesting the chelates formed by cyanuric acid in water or hemoglobin or structurally related compounds even in the absence of any element or compound supported by these structures.

It would be negligent to not also mention that historically water has been recognized as having the ability of carrying energy of the type associated with animal - not actual - magnetism. So called "holy water" and water which has been the subject of prayer illustrate this last point. Any one denying that on occasion the character of water can be changed by such treatment is either ignorant of or chooses not to believe clear cut evidence. Such individuals are constrained by their belief systems to reject any concepts in apparent conflict with such systems.

The Use of Physical Energy In Creating Magnetic Water

Increasingly it appears that the manner in which most homeopathic preparations are prepared may be a key to an increased understanding of magnetic water. In the later 1700's Hahnemann discovered that by applying significant mechanical energy to an aqueous solution using a process known as "succussion" that he could impart to a solution the ability to pass along to a much more diluted solution some distinguishing characteristics of the solute in the original solution. The term "potentizing" is used in designating the repetitive dilution procedure used with repetitive succussion steps.

Many facts enter into the effectiveness and shelf life of such remedies. Apparently the more energy applied to a mixture or solution during the succussion the greater the shelf life of the remedy produced. Currently simulated homeopathic remedies are being increasingly produced by electronically impressing

upon water a frequency pattern or "template" instead of using the classic succussion and potentizing procedure. It is understood that these simulacrum also tend to deteriorate with time to varying extents which are also primarily dependent upon the amount of energy used to create them.

These two types of procedures for producing homoeopathic compositions are not and should never be considered as the only manners of applying energy to achieve a remedy which in effect does not contain any of the active ingredient of the remedy. This can be easily illustrated in several ways. A favorite illustration of this point involves a client who learned or discovered that a very hard to dissolve compound could be placed in solution by putting a mixture of it and water through a pump which would exercise a powerful shearing action on the mixture.

This process probably was and is the approximate equivalent of the mechanical application of energy in the succussion operation used by Hahnemann. As a practical matter any use of a shearing action applying mechanical pressure to a solution can be regarded as such an equivalent. This includes such common practices as forming a solution with the aid of a blender or the occasional use of mechanical rolls. A vortex is another manner of applying mechanical energy to a solvent-solute mixture to form a simulacrum of a homoeopathic remedy. Seemingly the shelf life of such a remedy is at least in part dependent upon the total amount of energy applied in making it. In some cases increasing the shelf life merely involves putting a mixture through an apparatus a series of times; in others it only involves increasing the duration of the period when energy is applied.

In all of such cases energy is added to the water to alter its properties in connection with the formation of a type of complex or chelate which, like a solute in a homoeopathic remedy, "holds" such energy or a derivative of it so that it is accessible and, in appropriate cases, may be used. It seems logical that that a similar mechanism must also be involved whenever water is exposed to a magnetic field under circumstances that the magnetic energy applied seemingly forms a complex with the water which, in effect, loosely holds this energy for a limited period.

The Use of Magnetic Energy With Water

This view seems to be supported by wide experience to the effect that the energy from either or both of the poles of a magnet will be held by water in a releasable manner such that it will be gradually dissipated or released after a time period: (1) which is dependent upon the amount of and manner of applying this energy and (2) which is dependent upon the ambient temperature or other energy of any form applied to the magnetic water. Unfortunately little or nothing is presently known about whether or not the presence of significant quantities of minerals in any type of magnetic water will or will not aid in the mountains of "magnetic" properties associated with water.

These factors mentioned in the preceding paragraph are clearly not understood. They vary depending upon whether or not a particular magnetic water was created using north or south pole energy or a mixture of both of these types of polar energies. This can create some interesting questions and may

call for some revised thinking. No illustration of this point is better than Dr. Tiller's text. On page 35 of it he indicates that north pole seeking magnetic energy inhibits microorganism replication while the south pole seeking energy accelerates this process. Logically this should indicate that microbial growth in contained water and exposed to dual magnetic polar fields is subjected to dual field energies causing it to both reproduce and not to reproduce.

Maybe the resulting "dilemma" concerning the growth is responsible for a body of water which has been properly treated with north and south magnetic fields remaining free from visible growth in the absence of a halogen or ozone. While this may be the case it seems that credit for this result belongs to either or both of two different factors. The first is the constant movement of the water in the tub so that some of the water goes along one of the poles of the magnet and some flows along the other and so that these separate flows are then mixed. In effect this involves a separate use of the two polar energies. The other is the fact that magnetic energy as is associated with both poles of a magnet applied to "hard" water containing mineral deposits causes the surface tension of this water to decrease so as to in effect produce "soft" water which is detrimental to microbial growth.

The Formation Of Chelates In Magnetic Water

From a scientific viewpoint this latter is considered to be confirmed by statements on page 32 in Dr. Tiller's book. It is more than confirmed from a practical viewpoint by the large number of patents and commercial structures using quite a variety of physical structures to either prevent the formations of deposits such as boiler scale on the interiors of pipes or to cause the removal of such deposits from such pipes. Probably it should be noted that many of such structures are intended to be used in improving the performance characteristics of fuels such as gasoline and that a limited number of these devices are intended to be used in treating water for agricultural uses.

The apparent formation of chelates from boiler scale and similar deposits probably is assisted to at least a very limited extent by the action of the two types of polar energies on water. According to Dr. Tiller's text the north pole seeking energy of one of these poles seems to neutralize the pH of water while the south pole seeking energy of the other of these poles seems to acidify water. Acting together these different types of polar energy can be expected to tend to promote the solubility of calcium and other similar compositions. This in turn should make it easier to form chelates from these inorganics.

This conversion of apparently hard water to soft water and the related prevention or removal of mineral deposits seemingly can only be completely explained by referring to the chelating ability of water, and, in particular, to the manner in which this ability is created or enhanced or both by the application of the energy from both magnetic poles. Unfortunately to the best of the writer's knowledge there have been no definitive studies as to whether or not the energy from either of these poles when used alone will accomplish this result. Probably the absence of such studies is related to the fact that it has traditionally been

considered necessary to deal with the energies of both magnetic poles when ever a magnet has been employed.

Preferred Manners Of Creating And Using In Situ Produced Magnetic Water

The quotations from Hahnemann's "Materia Medica" and von Reichenbach's "The Od Force" suggest that something different than a mere chelating ability is present when the energy associated with one pole of another of a magnet is applied to water. Hahnemann's teaching to the effect that south polar energy tends to speed up or stimulate biological action while the energy associated with a north pole tends to calm or slow such action is the basis of what can be referred to as the US and Indian philosophy concerning magnetic medical and other treatment.

This type of treatment uses single polar magnetic water formed in situ by subjecting a body containing water to the particular polar energy used. Those using this form of treatment seem to usually hold the view that the strength of the applied magnetic field should be sufficient so that some flux or energy beyond that found in the Earth's magnetic field acts directly on whoever or whatever is being treated. Thus, treating a lump within a body requires that at least a perhaps slightly greater than a minimum or subtle quantity of energy of a single pole be applied to the water within or associated with that lump.

Since magnetic energy from a common magnet permeates nearly everything to a distance which can be reasonably ascertained it is normally not a problem to gauge the minimum level of energy which should be used to accomplish a result. From this it will be apparent that it is essentially immaterial whether the region where the energy is to be applied is accessible at a surface or has to be contacted through one or more layers of organic matter so long as the field from a single magnetic pole can reach this region without causing any serious consequence or action in reaching this region. In view of the seeming relatively restricted tolerance of most normal plant and animal growth this latter seems to be no problem during reasonable limited treatments with either of the poles of common permanent magnets. Extended treatments with either of the poles of a magnet can cause changes which may or may not be either beneficial or detrimental.

This US and Indian philosophy is quite different from the position promoted in Japan that both polar magnetic energies from comparatively small magnets should be employed more or less adjacent to one another so as to concurrently stimulate whatever is being treated by the fields of both of these energies. This type of treatment is considered to result in localized effects at and adjacent to a surface by causing the production of dual polar magnetic water in comparatively small, limited regions of the skin adjacent to the magnets. In effect it amounts to dual pole treatment of the water in the area of a surface so that the magnetic water either stimulates or is effective in stimulating in the specific region in which it is located.

Currently a comparatively new development in this Japanese type of treatment uses a moderately sized magnet containing a plurality of adjacent north and south poles on a single face of

the magnet with the apparent objective of obtaining dual pole treatment effects at a greater depth from a surface than are obtainable with the smaller magnets. It is interesting to speculate as to whether or not this type of multi polar magnet will produce in situ dual polar effects or will produce a combination of north, south and both north and south polar effects in whatever is treated with them. Apparently the intent of these structures is merely to obtain stimulation at a greater depth than possible with very small magnets.

Both of the treatment philosophies used in the Indian & US and in the Japanese styles of treatment are of importance in the in situ formation of magnetic water. The first of these application styles is currently almost always utilized in a manner so as to obtain the benefit of the "action" attributable to one or the other of the poles of a magnet. As opposed to this the second manner of using in situ produced magnetic water is apparently only directed toward the stimulation of natural action in the area where magnets are used. In effect it appears to be only an assist to the attainment of a natural functioning or of normalcy. As opposed to this the intent of using a single pole magnetic treatment is to change things in a manner consistent with known or anticipated actions of magnetic water produced by the particular pole used.

The formation of magnetic water in situ by the application of small externally applied magnets as Japanese practice has an interesting relationship to the use of Paracelsus' small magnetic particles and honey mixture. There can hardly be any question about it containing a form of magnetic water. It is presently unclear from available materials if it was used by being spread on the surface of the body or if it was orally consumed. If used in either manner the magnets within this mixture would administer both of the polar energies of the magnets to the water present within the skin, or, if this was missing, any other exposed surface of the body or, if taken internally, the barriers or walls defining the digestive tract.

When the expression "magnetic water" is commonly used at the present it designates water which differs from in situ produced water by being produced separately as a product usually having a relatively short effective or shelf life which can be employed prior to the expiration of this time period for treatment purposes. As when magnets are used to produce magnetic water in situ the properties of magnetic water produced prior to being used are primarily dependent upon the polar energies used in creating the water. These properties can be quite surprising.

The Results Obtainable With The Energy From One Type Of A Magnetic Pole

To the best of the writer's knowledge no one has ever attempted a complete tabulation of the results currently attributed to any of the types of magnetic energy. In addition to the effect of influencing pH control and microorganism growth previously mentioned Dr. Tiller indicates (page 35) that: south seeking or "green" polar energy has an oxygenation effect while north seeking or "red" polar energy has the opposite effect; that such "green" magnetic energy tends to relieve pain while the "red" magnetic energy has the opposite effect; that "green" magnetic

energy; that this "green" energy is of a restful, relaxing character while the associated "red" energy tends to activate. He also indicates that both of these types of magnetic energies have different influences on hormone production.

It is regrettable that Dr. Tiller did not expand this listing. Perhaps that this can be partly attributed to the fact that a prime source of uses which he did not list is patent literature and to the related fact that the patent literature is justifiably not normally accepted as gospel as being as complete and accurate as it might be. From the patent literature it is apparent that magnetic energy can be used with water to achieve a variety of different types of effects in the proverbial animal, veritable and mineral fields. There is no point in listing all of the results which have apparently achieved by the application of such energy. Probably the most surprising of such results was an unverified report that all of the women who worked in a magnetic factory in India and who became pregnant had only male offspring. Unfortunately no confirmation of this report has been located.

While those of these results most commonly discussed are in the field of treating a living body such as a human body it is considered that the most interesting future applications of magnetic water are already or will be in the agricultural field. The US Rodriguez patent 5,295,494 should be especially mentioned because of the extensive list of non patent literature references cited in it. The examiner or examiners who handled the prosecution of this patent are to be thanked and complemented or the inclusion of this list. While it is far from complete it will be a distinct aid to those investigating this field of magnetic treatment.

Those who have written generalized discussions relative to the use of polar magnetic energy so as to produce water in situ or that can be used as a treating agent uniformly warn against any use of south pole seeking or "red" magnetic energy. This is not surprising since the tendency to "get things moving" associated with this "red" polar energy has the potential of being quite harmful and even deadly in some circumstances. For example, normally no one would seek to promote the growth of a cancer by using this type of energy. As opposed to this "green" polar energy is normally considered to be not only "safe" to use with such neoplasms but to be effective in treating such growths. At present no one can expect the US FDA or the US drug oriented allopathic medical "establishment" investigate whether or not magnetic therapy is either safe or effective in this or probably any other type of use

The view that "green" magnetic energy is good and that "red" magnetic energy is bad is inaccurate. No where is this better illustrated than in the field of seed treatment. The Davis U.S. patent 4,020,590 in discussing the results achieved by both types of unipolar treatment of seeds indicates that it is possible to vary the root structures of plants, their leaf sizes, their germination rates and a number of other characteristics. The choice of whether one type of polar energy should or should not be used in a particular application will be dependent upon the nature of the plant growth desired. The particular type of magnet used can be directly applied to the limited water in seeds or plants or can be utilized by the treatment of the water which is

to be supplied to seeds or plants in a normal manner.

Magnetic Drinking Water

It is understood that it much of the World outside of the US, and, in particular, in China that it is quite common to magnetically treat water before consuming it in the belief that this will have a generalized type of benefit. Apparently millions of drinking vessels have been sold which are constructed so as to hold a magnet in an insulating cover part of such drinking utensils. Unfortunately no details as to how magnets are held in such structures are presently known to the writer. In view of the reported detrimental aspects of using "red" magnetic water it is considered necessary to caution against the use of water which has been treated with other than "green" polar energy.

Such treatment is not normally achieved by placing a magnet within a container so that the "green" north seeking pole faces the interior of the container and so that the "red" south seeking pole is directed toward the exterior of the container. This is undesirable since the hygienic condition of any magnet used may be open to question. In addition there is always the possibility that the magnet or any coating on it may contain something which will pass into solution and be detrimental. For this reason it is always considered desirable to form a particular type of magnetic water by locating a magnet used in creating the composition on the exterior of a container.

Little if anything has been written about the nature of the container used. Obviously neither it nor any coating on it should block the field from a magnetic pole on its exterior from getting into the water within the container. As a practical matter seemingly any reasonably inexpensive glass or polymer container seems to be satisfactory although in theory just about anything may have some miniscule effect on the magnetic field associated with either of the poles of a magnet. Generally speaking the container should be sufficiently small so that the field associated, with the pole used will extend sufficiently so as to contact as much water as possible as the water in the container is circulated due to normal ambient temperature differences.

The amount of time which water should be in contact with a magnetic field in forming magnetic water is probably dependent upon many factors such as the ambient temperature. The latter is also critical in that the lower this temperature the greater the shelf life of the magnetic water produced. No one seems to have done any significant study as what temperature best balances the ability of the water to interact with the applied magnetic flux and the temperature at which this interaction is reversed at the greatest rate. As a result of these and related considerations it is common to keep a container with an attached magnet constantly filled with water and to refill it whenever some of its contents have been removed. Many others act on the assumption that magnetic water should be used or consumed within roughly five to ten minutes or slightly more after it is prepared.

Imprinting Water

Comparatively recent developments in connection with "imprinting" water either by imposing a frequency or frequency pattern upon it or by imposing a frequency pattern between a

(Continued on page 24)

THE BELL TOLLS TWELVE ON 01-01-2000 ... AND ALL IS WELL

BY M. THEROUX

Well, here we are, the day after Y2k. I trust everyone (those who weren't holed up in underground bunkers) had a happy New Year's celebration. So what happened? Well, actually, nothing at all - as we predicted for the last two years.

Is this statement an 'I told you so?' In a way it is, for all those who wrote us unpleasant emails telling us we didn't know what we were talking about, or that we didn't research our subject at all. It is for all those who told the public that all would be doom and gloom come 01-01-00, and sold them millions of dollars worth of "preparedness" products. Will any of these "doom & gloomers" be held accountable for inciting mass hysteria about Y2k? I doubt it, but they should be. They'll tell you they never said all would be chaos, and that they were merely relaying information or "entertaining". I suggest you go back and read or listen to their statements (if you can still find them - hundreds of websites have already disappeared) and then decide whether or not they didn't at least "heavily suggest" the coming perils of the Y2k bug, all the while getting fat off of selling products to their hysterical audience. They also might tell you that Y2k wasn't a problem after all because they brought attention to the potential trouble early - resulting in public awareness and the consequent "fixing" of the problem. I suggest, again, that you look over their statements and see that they continued to say until late in the year that all could not be fixed, and there would still be many problems. They in turn continued to push Y2k products up until the last few days...and will continue to do so...but with another, scarier story... probably involving the current Solar cycle peak. We won't mention any names for several reasons, but you know who they are, and so do we. No, they will never admit they were wrong because they'll claim they never made a stand in the first place.

Borderland Sciences did take a stand - one that we held fast to all the way through the last couple of years to the end - 01-01-2000. We were one of the only publications in alternative science to call the Y2k bug correctly. Most will not care that we were indeed correct about Y2k, and will continue to support the farcical performances of those "entertainers" and writers who pressed the hysteria. None of those who were in a position to present our "Embedded Chip Challenge" to the public did so either. I'm sure it was because much of their doom hinged on the elusive embedded chip story - one that was an "unknown" to most of the lay community. Had they pressed the issue with our challenge, the public may have had more confidence in the utility industries' ability to deliver power and water, and that, of course, would have put a damper on sales of

wind-up radios, flashlights, and storable food. But, they ignored our challenge, and many thought the power would go out and water would stop running.

Our research was thorough, and in the end, we were correct.

This WAS a big deal folks, not some story of killing an alien with a stick in the woods, or a mysterious signal coming from EQ Pegasi. The Y2k bug as presented to the public by the grifters would have potentially affected everyone. Scaring the hell out of people is big business, and will continue to be as long as there are those who are willing to embrace the fear handed them. Global Warming, The Sun, and AIDS are still in the news and will be used by those less scrupulous to sell you products you probably don't need, and could cause harm to your financial well being and/or your health.

In closing this statement, I would like to reprint something from an article we published on our website in March of last year, about information gathering on the internet and its credibility:

So where are we to get credible information today? Are we simply to rely on our 'inner bell' to distinguish fact from fiction? No, what we really need to do today is to check out the facts for ourselves. Although many do not have the time for this, it is essential for getting to the truth of the matter - otherwise we are left bleating the same hokum as those 'reporters' and 'entertainers' on late night radio shows and in the tabloids.

Here is a brief outline one can use when trying to obtain clarity on any topic presented on the internet:

Things to look for:

1. Does the article, statement, or information provide active and accessible links to reference information? (If links are excluded, there is no fast way to verify the info, and it may as well be discarded)

2. If it does contain links, how do those links relate to what the article presents? Are they within the context of the information presented?

3. Does the article, statement, or information use one of the seven basic propaganda devices? (In 1937, the Institute for Propaganda Analysis was created to educate the American public about the widespread nature of political propaganda. The IPA is best-known for identifying the seven basic propaganda devices: Name-Calling, Glittering Generality, Transfer, Testimonial, Plain Folks, Card Stacking, and Band Wagon. According to the authors of a recent book on propaganda, "these seven devices have been repeated so frequently in lectures,

articles, and textbooks ever since that they have become virtually synonymous with the practice and analysis of propaganda in all of its aspects." - Combs and Nimmo, 1993) More info on this subject in the next issue.

4. Does the article, statement, or information refer to an anonymous source? (These anonymous sources seem to be employed by certain reporters to pump up weak stories in the attempt to impress those who believe in the reporter's God-like integrity.)

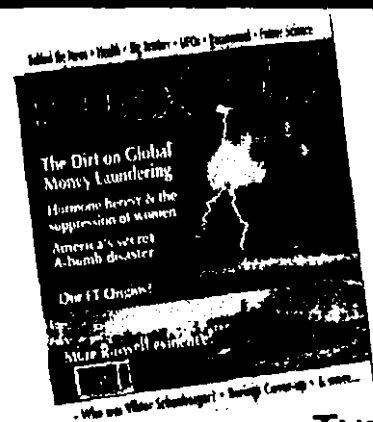
5. Look at the rest of the website. Does the article, statement, or information follow a pattern towards a general agenda presented by the website?

6. What are they selling? Is the article, statement, or information presented designed to sell a product or service? Does it lead one to believe that one needs said product?

There are many more things one can do, but these should suffice and are quick to implement. The main thing to do is check out the associated links. If there are none, you may search for links related to that topic, for example, if you read an article on solar activity, do a search for that topic to see what those in the field have to say. It really doesn't take that long.

From all at Borderland Sciences - Many thanks to those who did support us. To all: Have a Happy New Year...and be careful who you listen to. □

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MS Preparation for Submission to The Journal of Borderland Research

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1. Insert only a single space after all punctuation. Since the advent of the printing press in the 15th century, typesetters have never inserted two spaces after punctuation.

2. Avoid the temptation to use boldface or underlined text to emphasize words within a passage of text. In place of bold, use italics for emphasis.

3. Do not use carriage returns <enter> after sentences — only for a new paragraph.

4. Do not use tabs to indent a sentence when beginning a new paragraph. Either use no indent at all, or use the "first line" indent function of your word processor.

5. All punctuation goes inside quotation marks, e.g., What is "dielectricity?"

Tables and Figures

Please send all tables and figures on separate pages clearly marked with figure number, heading, and caption.

Reference Style

1. Journal references:
Author, title of article, journal, volume number, page number, date.
Author: Lastname, firstname or init.
Title of article: "in quotes"
Journal: *italics*
Volume number: normal
Page number(s): normal
Date: (in parentheses)
Example: Burton, L.C., "Fundamentals of Electricity," *Popular Science Monthly*, 71, 46-51 (1908)

2. Book references:
Author, title, publisher, publisher location, date.
Author: Lastname, firstname or init.
Title: *italics*
Publisher: normal
Publisher location: normal
Date: normal
Example: Burton, L.C., *Fundamentals of Electricity*, Danfield Press, New York, 1908.

Punctuation in above examples should be followed.

TOP SECRET: SCIENCE FICTION

BY JOHN VINCENT SANDERS

UFO researcher and author John Keel's column in the November, 1998 issue of FATE magazine dealt in part with the increasingly lucrative "business" of UFOs (movies, television shows, books, videos, etc.) As interesting as that article was, I was even more intrigued by the sidebar that accompanied it. Although it was un-attributed, an Associate Editor at FATE told me privately that columnists there frequently write the sidebars accompanying their articles. This one offered a rather provocative statement, "Movies have had a huge influence on UFO lore. Often the plots of old sci-fi movies from the 1950s have been adapted by UFO buffs 20 or 30 years later."

As a lifelong fan of both science fiction and the UFO phenomenon, I was not particularly shocked by that charge. For many, the relationship between ufology and science fiction has always contained an element of the "chicken-or-the-egg" conundrum. In his 1991 book "Watch The Skies!" aviation historian and UFO skeptic Curtis Peebles made his own position clear in the book's sub-title: "A Chronicle Of The UFO Myth." A very good argument can - and has - been made to support the proposition that the UFO phenomenon represents a latter-day expression of humanity's propensity for myth-making. I tend to agree with the idea that in the centuries prior to organized science, mythologization was the only way for the human mind to apprehend those aspects of the universe which denied easy explanation.

Ever since Kenneth Arnold's historic UFO sighting of June 24, 1947, ufology has become entrenched within the popular consciousness and culture. Over the course of the last fifty-two years, this great body of knowledge has been revisited, reinterpreted and expanded upon countless times. Considering the fact that the very idea of UFOs is an intriguing one, the creators and purveyors of popular fiction have addressed it repeatedly in search of new ways and means of self-expression and mass-entertainment. One consequence of all this has been an increasing difficulty on the part of individuals to perceive the dividing line between palpable "fiction" and ostensible "fact."

How much of a connection is there between science fiction and ufology? One way to find out may be to explore the ways in which the two have been linked during the second half of the 20th century. Our first stop on this journey will be the medium of Television; specifically, three highly regarded science fiction T.V. programs of the 1960s. The legendary series "The Twilight Zone" featured an interesting episode titled "The Odyssey of Flight 33," which dealt with the eerie fate of a New York-bound jetliner. While over the Atlantic, the aircraft enters a mysterious, glowing cloud. Immediately, the plane's instruments malfunction and the doomed aircraft begins a one-way

trip back in time. Upon reaching New York, the crew and passengers are horrified to see below them not the thriving metropolis, but a sprawling swampland teeming with dinosaurs. The story-line here seems to be a composite of various strange incidents involving aircraft that were alleged to have occurred in the "Bermuda Triangle" and elsewhere. One such real-life incident comes easily to mind: the mysterious loss of "Flight 19" in December of 1945. The disappearance without trace of five U. S. Navy torpedo-bombers - and the large seaplane sent in search of them - remains as perhaps the great unsolved mystery of "The Triangle."

"Star Trek" fans will remember the original-series episode "Tomorrow is Yesterday." Here, the starship "Enterprise" is accidentally catapulted back in time to the mid-1960s. In the opening sequence, a U.S. Air Force jet is sent to intercept a UFO over the American Midwest: which turns out to be the "Enterprise." Fearful of the plane's air-to-air missiles, "Captain Kirk" orders that an energy-beam be used to hold the plane off until the starship can climb back into outer space. However, the plane proves too flimsy to withstand the beam's energy and starts to break apart. As its pilot is "beamed" aboard the "Enterprise" the plane's wreckage crashes to earth. UFO savants will easily recognize in this episode the tragic "Mantell Incident" of 1947. On January 7th of that year, U.S. Air Force pilot Captain Thomas Mantell died when his F-51 fighter plane crashed after chasing a UFO over the state of Kentucky. UFO debunkers maintain that the accident was caused by a non-functioning oxygen mask, while ufologists cite the hundreds of mysterious small holes allegedly found in the wreckage of Mantell's plane.

"The Outer Limits" was the third sci-fi television program of the 1960s to deal intelligently with the idea of UFOs and extraterrestrials. In his book "Hollywood Versus The Aliens," author Bruce Rux noted that the Executive Producer of "The Outer Limits" was a former U.S. Intelligence Officer named Leslie Stevens. Rux has also wondered if Mr. Stevens' experience within the American intelligence community might have allowed him access to tightly held information about UFOs and their alien occupants..

Here we have intriguing evidence that ufology has had a profound influence on science fiction. In the case of the "Twilight Zone" and "Star Trek" episodes, it should be noted that the episodes themselves were written, produced and broadcast in the 1960s; while the incidents they were based on occurred in the 1940s. In the case of "Outer Limits" participant Leslie Stevens, he had left government service by 1960. At least publicly.

The manner in which science fiction material is sometimes presented may explain some of the difficulty people have in dif-

ferentiating "fact" from "fiction." This point can be illustrated by referring to a best-selling science fiction novel of the late 1960s.

"The Andromeda Strain" by Michael Crichton was published in 1969 and dealt with a "fictitious" U.S. satellite program to harvest micro-organisms in near-earth orbit for use in biological warfare experiments. In chapter one, two military men sent to retrieve one of these satellites enter the fictitious town of "Piedmont." To their horror, they soon discover that all of the inhabitants appear to be dead. Soon thereafter, they themselves die mysteriously. The rest of the book deals with the life-or-death efforts of a small team of scientists. Toiling in a secret, underground government laboratory, they race against time to destroy the alien germ before it can eradicate all life on Earth.

"The Andromeda Strain" was a seminal work on more than one level. It introduced the world to such emerging technologies as fiber-optics and computerized medical, biological and genetic research. It also focused public-awareness on the unsettling reality of "Black Ops": highly classified government projects conducted at Top Secret locations; many of which are situated in the most remote and inaccessible parts of the United States. In many ways, this book was a product of the anti-Vietnam War/anti-Establishment mood of the 1960s. Prior to that decade, most people were unaware of the hidden machinations of the "Military-Industrial Complex" and very few suspected that vast, secret and hugely expensive research programs were being developed.

Michael Crichton presented "The Andromeda Strain" - a novel - in a manner that would tempt readers to believe that it was actually a work of non-fiction. The text is full of authentic-looking "documents" and official-sounding terminology. He also makes repeated references to real people, places and things; and the careers and accomplishments of his scientist-heroes are skillfully interwoven with those of real-life researchers. He even goes so far as to include a bibliography at the end of the book where actual scientific papers and publications are listed; along with those of his fictional characters. Thirty-years after its publication, there are still those who believe that Crichton did indeed have access to Top Secret information - and that the story behind "The Andromeda Strain" was a true one.

In 1971, a movie-version of "The Andromeda Strain" was released in theaters. Critics and movie-goers alike applauded it; not only for its efforts to pierce the veil of government secrecy, but also for the fact that it was an informative, suspenseful and entertaining film. Turning a best-selling novel into a successful motion picture usually requires a considerable amount of cinematic license. The story-line of a book is usually too lengthy and complex; and in order to craft a workable screenplay, elements within the text are often condensed or deleted. In the case of "The Andromeda Strain" however, two subtle changes were made which bear close scrutiny.

In the book-version, author Michael Crichton placed the fictitious town of "Piedmont" in the state of Arizona. However, Producer/Director Robert Wise and Screenwriter Nelson Gidding chose to place the doomed town in New Mexico. In one of

the movie's opening scenes, the two men searching for the deadly satellite consult a map - which gives the location of "Piedmont" as the northwest corner of New Mexico. Why might this be significant? To address that question, we must turn briefly to the late ufologist and conspiracy researcher Philip Schneider.

Mr. Schneider told an amazing - and horrifying - story during his lecture at the 1995 Global Sciences Conference in Denver, Colorado. Schneider claimed to have been a structural engineer in the employ of a construction company in 1979 that had just won a government contract. The contract called for work to expand an existing underground military installation. During the course of the excavation, workers accidentally discovered a large, seemingly man-made cavern near the underground base. To their surprise, they found that it was occupied by small, alien beings which ufologists refer to as "Grays." To their horror, the Grays attacked them using some form of high-energy weapon. Mr. Schneider said that he had been struck and almost killed by a blast from this weapon. Although U.S. military personnel were able to kill a few of the creatures, only three people survived the attack which claimed almost seventy human lives.

One of those in attendance at that Global Sciences Conference was Robert C. Warth, President of S.I.T.U., (Society for the Investigation of The Unexplained.) According to Mr. Warth, Schneider opened his shirt during a question and answer period after his lecture to reveal a large scar on his chest and abdomen: evidence, he claimed, of his near-fatal "Close Encounter."

What possible link could there be between the shocking story of Phil Schneider and the motion-picture "The Andromeda Strain?" Well, the secret installation where the violent, human-alien encounter occurred is, according to Schneider and others, located somewhere beneath the desert near the town of Dulce - IN THE NORTHWEST CORNER OF NEW MEXICO AND VERY CLOSE TO THE LOCATION OF THE FICTITIOUS TOWN OF PIEDMONT, AS DEPICTED IN THE MOVIE-VERSION OF "THE ANDROMEDA STRAIN."

Even more shocking are accusations by Schneider and others that the alien presence outside Dulce is actually the result of a treaty between the U.S. government and the Grays. In exchange for access to alien technology, the U.S. government allegedly allows the Grays to abduct, implant and experiment upon U.S. citizens; as well as allowing the aliens the right to harvest biological compounds through animal mutilation. Unfortunately, the voice of Phillip Schneider has been silenced: he died, under what some believe to be questionable circumstances, on January 17, 1996.

The other curious change made in the movie-version of "The Andromeda Strain" was the relocation of the secret, underground government lab where the scientists waged battle against the deadly germ. In his book, Michael Crichton chose to locate this facility - which he called "Project Wildfire" - in the northwest corner of Nevada. In the movie, it is located in the desert south of Las Vegas. A meaningless detail? Perhaps, but remember that Area 51 - the U.S. Air Force's test-site for exotic aircraft, (and the place where many believe the U.S. government stores

and tests captured UFOs), is also relatively close to Las Vegas. Area 51 was still a relatively obscure place in 1971 and had yet to achieve the notoriety it enjoys today. In fact, "Hangar 18," the first major motion-picture to address the question of Area 51 as a storage facility for captured UFOs and aliens, would not appear in theaters until 1980.

Were Robert Wise and Nelson Gidding alone responsible for the curious changes made to "The Andromeda Strain" story: or were they acting upon outside "advice?" Although the true extent of Hollywood's inside knowledge concerning UFOs is a subject for debate, it is not likely that definitive answers are forthcoming. However, another possible link to "The Andromeda Strain" might be found in recently revealed "Majestic-12" (MJ-12) documents acquired by researcher Tim Cooper, Dr. Robert Wood and his son Ryan.

The Woods appeared on the December 7, 1998 broadcast of the nationally syndicated radio talk-show "Coast To Coast A.M. with Art Bell" to announce the existence of the compelling papers. The term "Majestic-12" refers to a Top Secret presidential commission purportedly founded by U.S. President Harry Truman in 1947. The group included a number of high-ranking government officials; including then Secretary of Defense James Forrestal, (who would commit suicide under mysterious circumstances in 1948), and presidential science advisor Vannevar Bush. Their mission: to evaluate - among other things - reports of crashed UFOs and aliens near Roswell, New Mexico in July of 1947: the now-famous "Roswell Incident." The first examples of so-called MJ-12 documents came to light in 1984, and others surfaced ten-years later.

Contained within the documents obtained by the Woods are startling reports that certain individuals who handled the corpses of dead aliens succumbed to a frightening disease. Reportedly, at least four persons died of seizures and massive bleeding as a result of physical contact with aliens. Although the exact cause of death is not reported in these new documents, it was suspected at the time that some micro-organism of extra-terrestrial origin was involved: perhaps a real-life version of "The Andromeda Strain."

These newly revealed MJ-12 documents also suggest a possible link to another science fiction movie: one of the classics of the 1950s.

"Earth Versus The Flying Saucers" was released by Columbia Pictures in 1956 during the height of the "Flying Saucer Craze." It was produced by Charles H. Schneer, who would go on to create such memorable fantasy films as "Mysterious Island," "Jason and The Argonauts" and "Clash of The Titans." The special-effects were created by the legendary master of that art: Ray Harryhausen. "Earth Versus The Flying Saucers" was meant to be a fast-paced sci-fi thriller that was also rooted firmly in the UFO headlines of its day. The screenplay was "suggested" by the book "Flying Saucers From Outer Space" by Major Donald E. Kehoe.

The film opens with an alien attack on an American rocket launching base somewhere in the deserts of the Southwest. Later, the aliens "abduct" two humans in order to gain information. The climax of the movie is a dramatic and action-filled

attack on Washington, D.C. by giant saucers. Fortunately, a heroic scientist is able to develop an ultrasonic weapon in the nick of time, and the aliens are defeated.

The Flying Saucer assault on Washington may have been inspired by an actual UFO event that occurred over the U.S. capitol. During the night of July 26-27, 1952, three different radar sites surrounding Washington picked-up unidentified, high-speed objects. Jet interceptors were dispatched from nearby air bases in an attempt to identify the UFOs: those attempts failed. The incident made national headlines, and according to historian and UFO skeptic Curtis Peebles, it resulted in the largest press conference since World War Two. The conference was convened on the afternoon of July 29, 1952 by Major General John Samford, Director of Air Force Intelligence. Samford stated the Air Force's belief that the "UFOs" were merely false radar images resulting from a "temperature inversion" over the Washington, D.C. area during the night in question.

The alien attack on the desert launching site in "Earth Versus The Flying Saucers" could have been based on reports Major Keyhoe had received concerning multiple UFO sightings near the "White Sands Proving Ground" in New Mexico: the place where much of America's early rocket experimentation took place. According to the newly discovered MJ-12 documents, however, UFOs did more than just fly around over the New Mexico desert. One document indicates that U.S. test-launches of captured German V-2 rockets were actually interfered with by UFOs. One particularly stunning memo was addressed to a Lieutenant-General Nathan Twining. The memo, dated 8 July 1947, ordered the general to proceed to White Sands and evaluate reports of a captured UFO. The tone of the memo also suggests that the White Sands facility was in something close to an uproar; with allegations that a Military Policeman had committed suicide. The full-story surrounding these new MJ-12 documents will be found in the upcoming book "The Secret: Evidence That We Are Not Alone" by Robert and Ryan Wood.

One of the most well-regarded science fiction movies of the 1950s was the film "This Island Earth." Although I have seen it at least a dozen times, it is the sort of motion picture that can offer new revelations with every viewing. I have identified four different elements within it that are also part of contemporary ufology:

1. Humans abducted by aliens, (a la Budd Hopkins and Dr. John Mack.)
2. A flying saucer parked in a concealed hangar dug into the side of a hill, (alleged to be a reality at Area 51.)
3. Secret alien bases at various places on Earth, (the Dulce, New Mexico underground alien base, UFO bases alleged to be beneath the ice of Antarctica, and underwater bases off the coast of Puerto Rico.)
4. Alien technology being covertly introduced into a commercial research laboratory in the United States, (the late Col. Corso's allegations that technology from crashed UFOs at Roswell, New Mexico was secretly transferred to Bell Labs by the U. S. government.) During my most recent viewing of "This Island Earth," I was stunned to realize that the design of the small

"Zagon" spaceships, (seen only briefly in the film), was almost identical to that of the Lockheed-Martin F-117A stealth fighter. The resemblance is truly uncanny - and also a bit eerie! The final-design of the stealth fighter would not be achieved until more than twenty-years after the movie's release.

Is modern-day science fiction the stepchild of ufology, or vice-versa? Regrettably, that question may never be answered. The evidence presented here could be interpreted to support either position. Some have speculated that the genre of science fiction is being used to channel truths too controversial to be represented as such publicly. Others suspect that ufology itself is frequently tainted by deliberate disinformation; skillfully planted to create confusion and foster doubt as to the reality of UFOs and other things. Perhaps all we can do is heed the advice offered at the conclusion of that memorable sci-fi flick of the 1950s - *The Thing*: "Watch The Skies! Keep Looking! Keep Watching The Skies!" □

PUNDIT CURMUDGEON

(Continued from page 18)

magnetic pole and a container of water or by related methods accomplishing the same objective are changing views as to the existence of various previously unrecognized species of "magnetic water". These developments indicate that it is possible to "customize" either dual polar or either form of mono polar magnetic water so that the resultant product is effective in ways in which traditional magnetic waters have not been effective. This customization can be done concurrently with the formation of a particular type of magnetic water.

One means of forming such "specialized" magnetic water involves imprinting of water using patterns is set forth in Gerard's very significant book *The Paper Doctor* ?1990 as the water is exposed to a minimal amount of south seeking or green polar energy. It is not clear to the writer if these patterns are properly classified as radionic in character or not. The procedure employed in accordance with this *Paper Doctor* publication is apparently related to the use of "templates" or a frequency pattern on water as previously discussed.

The Gerrard process is potentially valuable because it makes it possible to produce a virtually limitless number of species of magnetic water. There are indications that magnetic water remedies for human ailments prepared as set forth in the book are at least often effective. In spite of governmental action in the US suppressing this book it is (or at least was) available on the internet. In spite of this suppression and other governmental action discouraging the development, dissemination and use of knowledge the concept of imprinting water is a guide to a manner of alleviating much allopathic medicine and other significant accomplishments. □

This article contains and expands upon some material from a previously written article entitled "Experiences in Satisfactorily Operating a Hot Tub Using a Magnet Instead of Conventional "Pool" Chemicals (What Does "Magnetic Water" Really Mean ?)" which has been published as a part of a collection of papers which was presented at a con-

THE SECRETS OF TRADITIONAL CHINESE THERAPEUTIC EXERCISES

(Continued from page 4)

Normal reactions are as follows:

1. Increased production of saliva as a result of the tongue touching the palate. Said to be helpful for digestion and prevention of stomach problems.
2. Increased energy.
3. Increase of restful sleep.
4. Slight increase in body warmth and mild perspiration. With practice, the exerciser will feel this warmth flow through the entire body.
5. Increase in metabolism. The nails and hair may grow more rapidly.

Not all exercisers will experience these reaction. Some will feel some of the reactions, and others none at all. These reactions are not the goal of breathing exercises, so do not seek such reactions if they do not happen right away.

Abnormal reactions are as follows:

1. Dizziness or headache. Incomplete relaxation of the muscles, nervousness, and distracting thoughts may be the cause.
2. Abdominal distention. Caused by exercisers who try to force their breathing, and can occur when changing from thoracic breathing (expanding the chest instead of the abdomen) to abdominal breathing. Remember, the breathing should be natural, comfortable, and very relaxed.
3. Fatigue. This can occur if the posture is not relaxed
4. Backache. Caused from forcing the chest out. Remember to breathe naturally.

Many other abnormal sensations such as lack of calm, distracting thoughts and even fright, may be overcome by regular and proper practice.

This ends the first lesson in series of articles on *The Secrets of Traditional Chinese Therapeutic Exercises*. In the next article, we will combine movement with the breathing exercise. This ancient breathing and physical exercise is called *daoyin*, and we will cover it in its entirety. □

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RESEARCH ON CHARGE INTERACTION

by Miroslav Provod

Unknown characteristics of condensers emerged from multiyear experiments with a large number of large-capacity condensers. In our records, the course of an experiment is noted in relation to which we have met health disorders for the first time. Using an increased voltage of a charge on a condenser we tried to speed up the power transfer. One group of condensers - which was to supply power - had a total capacity of 5 F and the average voltage reached 120 V. The other group consisted of 24 flat condensers and power was transferred to them on the basis of a contact-less relation from the first group in the power space. After several hours in the course of which I repeatedly went to the condensers to measure their power profit (voltage increase) I started to feel a sudden tiredness and an increasing pain between my shoulder blades. Then followed total weakness, visual problems characterised with oscillation of the subjects I was watching and assessments of dizziness with shivering of my left hand forced me to immediately leave the power space of the charge. I had significant problems moving to my bed a distance of 15 m, where my health problems started to eliminate after approximately 30 minutes. But tiredness and a feeling similar to intoxication remained. At that time I did not realise that it was all related to the condenser charge and that is why I consequently returned to the power space. But the above described health problems returned a short time after performing the power profit measurement. We met similar health problems (like for example sore neck paralysis, inner heart pains persisting until the next day in the case of any movement) several times during our experiments with higher voltage of condensers. Cells of organisms have the same charge as condensers and the power transfer to cells of organisms (in which the cell membranes have a function of bio-condensers) is performed in the same way as in case of condensers. The bio-physics states an average value of the cell membrane capacity ($C_m = 1 \mu F \cdot cm^{-2}$).

Next, we will describe a situation, in which any person can fall into without their own consciousness and due to power over-voltage. A reputable German scientist Karl von Reichenbach experimented in the 19th century with radiation of a mass and he called the radiation "Odium radiation". He included the chemical reaction between sources emitting the radiation described by him.

Non-traditional procedures, which our research is based on, are easy to prove that Reichenbach was not wrong. In the same way as charges of water streams, condensers or other charges, we can identify even the charge of fire and other chemical reactions. On a graph of fire charges of one up to ten burning candles it is possible to show direct dependence between the volume of power space of the fire charge and the number of candles.

In the course of the burning process in ignition and diesel engines, there occurs a chemical reaction, inducing a charge with a power space, layers and inter-layers. It is interesting to evaluate the joint charge of a vehicle, which consists of charges of the metal mass, chemical reactions in the engine and accumulator, flowing liquid in the cooling system and air conditioning, fuels, electric appliances, electric devices, air pressure in tyres, the driver and co-drivers.

One of the experiments which we present to those interested in our empirical research, includes monitoring of a charge increase of a car. At first, we draw the power space onto a graph as well as other power elements of an empty car and an engine at a stand still. Then, we enter onto the graph the power values with passengers, operating engine, increased revolutions, with switched-on electric appliances and a cell phone. It is also very interesting to monitor the power difference of the charge of a car placed into the power layer of a high tension distribution system and out of the layer. In the case of a person standing in a power layer of the high tension of 220 kV, his/her radius of power space immediately increases by approximately four times. If the person leaves the space immediately, everything returns to the original values. In case of a person staying in the same power layer for a period of one hour it takes several hours for his/her power value to return to the original state.

Police all over the world have evidence of places where extreme numbers of street accidents occur for inexplicable reasons. Such a place is located near Prague, in the village of Jesenice. Returning home from a weekend, a fleet of vehicles slowly moves from the side-road, the vehicles gradually enter the main road with a right of way. "It is a very critical part of the road. Serious accidents with mortal injuries do not occur there, but there are many small accidents", said the chief of the

transport police in central Bohemia.

If we evaluate the increased number of accidents at the above mentioned junction from the point of view of an interaction of charges, an unusual conclusion emerges. The moving fleet of vehicles on the side-road has a joint charge, which is power-amplified by charges from five high-voltage distribution systems crossing the thoroughfare in front of the critical crossroad. The joint charge of the fleet exceeds several times the standard charge of a human body, which causes an increasing power value of the "charge of driver" and "co-drivers" bodies. In the "over-voltage" developed there, there is increased tension (voltage) in cells, including the brain cells, which causes faults in correctness and speed of reaction times.

Another place with an increased number of traffic accidents is located - according to the information from the police - in Valaské Meziříčí, in the direction from Vsetín. In this case it is not a slowly-moving fleet of vehicles, as cars move smoothly. The power is gradually transferred between charges and the time period for its transfer (for an increase of voltage on cell membranes above the acceptable limit) is not the same for all the drivers. In general it is possible to state that several tens of minutes are necessary. A driver going from Vsetín to Valaské Meziříčí has a joint charge with his/her car and the charge merges in the joint charges of the forest, the water stream, the trolley conduit and the high-voltage distribution system. The time, necessary for passing through the critical section, is sufficient for an increase in the power value of the charge in driver and co-drivers bodies.

In the Czech Republic, an increased number of traffic accidents occur also in the village of Kolev on the road from Prague to Karlovy Vary, where the unusual shape of a crossroad requires fast and correct reactions by drivers. Cars pass through the road, which is bordered for a length of 30 km by a high-voltage distribution system 400 kV - in other words the charge of the power space of a car is increased by a contact-less transfer with a high-voltage charge of higher values (or its layers respectively inter-layers). As with the cases of the two previous examples, the drivers face negative influences of power elements and - by passing through a long section - the power value in cell membranes is increased in the same way as in the above stated examples. Similar places with frequent car accidents are common - naturally, not only in the Czech Republic.

From the above stated facts one is able to derive that it is possible for a driver to get into a situation similar to conditions after drinking some alcohol, when he/she loses the ability to drive a car without error. The road, which the driver passes may be a "power trap". This is supported even by accidents of professional drivers. About 1800

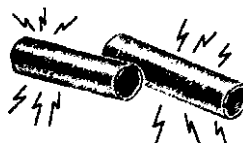
truck drivers have an accident in Europe every year. In some cases it is difficult to state the correct reason of the accident and the case is concluded with a statement that the driver had not mastered the vehicle.

It is possible to answer the question, why passing-through a power-critical section of a road is shown only in case of a small number of drivers, stating that the decisive factor is the power value of driver's body at the moment of entering the critical section. One drop is always the last one, when the power cup starts to overflow. In the situation of power over-voltage, the "bio-computer" of our brain faces similar problems as a standard computer in case of a significant over-voltage. In the case of a human body being exposed to a prolonged stay in power elements of large charges, it is possible for its body power to be increased several times. This can be reached even while sleeping, if the bed is crossed by a power layer of another charge. Alcohol and probably even drugs represent a very negative element from the point of view of over-voltage increase in cell membranes. After a certain time period, when mobile detection devices do not encounter any alcohol, the radius of a power space warns of an increased value of human body charge for a much longer time.

From the commercial point of view there is no doubt, that for an electronic concern, which will be the first to develop a device for measuring of power elements (power space, layers, inter-layers), which usually very negatively influence our health due to an over-voltage on our cell membranes, this invention will show a significant economic effect. In the case of such a device reaching the price level of pocket calculators it is possible to expect production and respectively sales of the same numbers of the devices as pocket calculators. No doubt that these devices will become decisive "flat architects" for positioning beds, chairs and working tables in our flats and offices. It will be easy for them to identify "cancer houses" and it is also possible to suppose that they will become a part of the equipment in every vehicle.

In case any electronic firm shows an interest in the development of this measuring device, we will inform their designers about further necessary knowledge. □

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THE TRANSMUTATION OF LEAD TO MERCURY

BY ROBERT A. NELSON

IN 1924, Prof. Arthur Smits and Dr. A. Karssen Univ. of Amsterdam) published reports of their alleged transmutation of lead into mercury and thallium. Their work was inspired by that of Prof. Miethe, who claimed to have transformed mercury into gold in a modified Jaenicke mercury ultraviolet lamp.

The lamp was constructed of lead quartz. Two legs (A, B), ending in narrow tubes, contain two steel electrodes cemented with sealing wax. The electrodes were inserted in two small removable copper water coolers (G, H). Pure liquid lead was poured into storage vessel C, after which the open end was sealed off. The lead was kept liquid at 350° C. by an electric furnace around C. Tube D contained capillary F and terminated in stopcock K, which was connected to a mercury diffusion pump.

When a high vacuum was attained, vessel C was further heated with a Bunsen burner to dissociate all the oxide and gases. Stopcock K was then closed and disconnected from the pump. The apparatus was tilted so the liquid lead ran into the two legs (A, B) of the lamp. The legs of the lamp were heated to redness to drive off the gases from the electrodes, and the lamp was evacuated again. Then copper water coolers were placed around the legs, and the lamp was ready to use. At the end of the experiment, the liquid lead was returned to vessel C, which was continuously heated. The lead was specially prepared and purified by the firm of Kahlbaum of Berlin to prevent every contamination, especially mercury.

The experiment was monitored with a quartz spectroscope. After a current of 30-35 amperes/8 volts was passed through the system for 6 hours, a few mercury lines began to appear in the spectrum. After 10 hours, the entire series of lines of mercury, plus those of thallium, were apparent in the visible and ultraviolet spectrum.

In 1926, Smits and Karssen reported further developments of their experimental protocol. The lamp was redesigned, and the mercury diffusion pump was replaced by a mechanical pump to eliminate the possibility of contamination from that source. The use of a mercury manometer was avoided by employing a glass spring manometer. All the equipment was examined spectroscopically to make certain it was free from mercury and thallium. They described their method as follows:

"After filling the storage vessel, the lamp and the lead

were heated in high vacuum to redness. The lead oxide being dissociated, the liquid lead was as brilliant as mercury. Then the lead was brought into the lamp, and after ignition the spectrum was observed at 25 volt and 36 amp., by a Hilger quartz-spectrograph. Further, the spectrum of a quartz mercury lamp was observed, and also the scale in such a way that, to facilitate comparison, the different spectra were adjacent. Thus we obtained the spectrum of the lead in its initial state. After that we burned the lamp at 40 amp. and 80 volt for 10 hours. After having done this the lead was poured into the storage vessel to obtain thorough mixing; the lead was then brought into the lamp again, and after ignition the spectrum was observed at 25 volt and 36 amp. The result was that, whilst initially the lead spectrum showed only very weakly the mercury line 2536 in the ultra-violet, after 10 hours' burning the strongest mercury lines had appeared in the visible as well as in the ultra-violet part of the spectrum, and also the most characteristic thallium line, indicating a transmutation of lead into mercury and thallium.

"Since our experiments showed that a high current density is very favourable to this transformation, we used currents up to 60 amp., but that seemed to be dangerous, because only by intensive air cooling could melting of the quartz-lamp be prevented.

"We thought it better, therefore, to change our method a little, by applying not a continuous electrical current but sparks of high current densities... While the lamp was kept oscillating by a mechanical arrangement... a current of high-density [60-100 amp.] was breaking and making... This method was very successful... After 9-1/4 hours' sparking all mercury lines, even the very weak ones, were present...

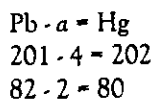
"This, however, does not yet prove the transmutation to be strong, as it is known that a relatively strong quantity of mercury can cause the spectrum of another element to disappear. But at all events our spectra show in a very convincing way the transmutation of lead into mercury..."

The researchers also conducted experiments with a nitrogen atmosphere at various pressures and a liquid dielectric (carbon disulfide) with 100 kv/2 milliamperes for 12 hours. The mercury was chemically detected as the iodide. Similar results were obtained with 160 kv/10-20 milliamps. In six such experiments, 0.1-0.2 milligrams of mercury was recovered. The researchers suspected that the CS₂ had contained

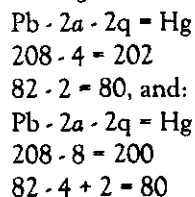
a trace of some organic mercury compound. However, positive results were still obtained even after it had been thoroughly purified.

Smits offered this explanation for the transmutations:

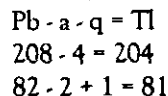
"In the case of the transmutation of lead into mercury, the inactive isotopes having the atomic weights 206, 208 and 210, we may assume, for example, that the isotope 206 suffers a transmutation giving an isotope of mercury:



"But we may also assume that the other isotopes 208 and 210 undergo a transmutation. In that case we obtain:



In the case of the transmutation of lead into thallium we can assume, for example, the following process:



"We see that of the different transmutation possibilities, [the first] is most simple. Moreover, I suspected this process could be expected first, as lead is the end-product of the spontaneous radioactive transformations... The best method of learning the nature of the transmutation is to examine spectroscopically whether the process is accompanied by the formation of helium or hydrogen, and to determine the atomic weights of the heavier products...

"While using the old quartz-lead lamp, negative results were obtained only if the current strength was lower than 15 amperes, but now, with our new lamps... spectroscopically negative results were found even using 60 amperes. The lamp showed distinctly different properties in burning and sparking. This proves that the phenomena taking place in the quartz-lead lamp depend on influences unknown until now, so that transmutation in the quartz-lead lamp is not so easy to reproduce as we expected."

In 1926, A.C. Davies and Frank Horton reported that they had been unsuccessful in their attempts to replicate the Smits-Karssen experiments. They speculated that, "in the case of the transmutation of lead (82) into mercury (80), the change may occur either by the intermediate production of thallium by one of the processes already suggested [viz., "the entry of an electron into, or by the removal of a proton from, the nucleus of the mercury atom."], and the subsequent conversion of the thallium into mercury by a second similar process, or it can occur as a one-stage change by the ejection from the lead nucleus of either one doubly charged positive particle (presumably an α -particle) or two singly charged posi-

tive particles (presumably protons) simultaneously. If the process occurs by the intermediate production of thallium, one would expect to find evidence of a relatively large amount of thallium compared with the amount of mercury produced. Prof. Smits does not seem to have found such an effect, for he records stronger evidence of the production of mercury than of the production of thallium...

"When atoms are bombarded by electrons, it is possible that in a few instances an electron penetrates within the K shell of extra-nuclear electrons, though it is certainly surprising that this is possible in the circumstances of these experiments. When such a penetration does occur, the electron will be attracted towards the nucleus and may possibly be absorbed by it. Even so, in some cases the absorption of an electron by the nucleus may render the latter unstable and disruption may occur with the ejection of a proton and an electron, either separately or together, in which case the final chemical state of the disturbed atom will be the same as if the electron had been absorbed by the nucleus and a stable condition attained."

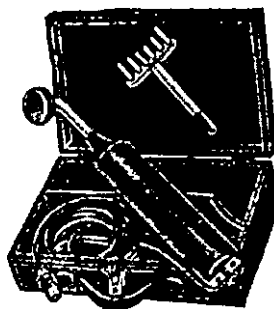
For some unknown reason, these explorations were not continued, and the issue disappeared from the scientific literature after 1928. This line of research remains open to exploration, since the questions it raised remain unanswered to this day.

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COMING SOON TO BORDERLAND SCIENCES

WHAT IS GOING ON WITH OUR SUN? ARE HYSTERICAL CLAIMS REALLY TRUE?

by M. Theroux and James Borges

Not since _____, have such violent outbreaks been seen on the surface of the sun as have been reported this year.

The quote is from Harlan True Stetson, the date in the blank is August 1917, and the year Stetson wrote this was 1937. It sounds like it could have been written today. I'm a little dismayed at the hysteria being generated by the media about our current solar condition. We seem to be witnessing "grasping at straws" attempts to point the finger at anything suspect of causing total chaos as we approach the new millennium. At first it was Y2k that was supposed to end the world as we know it, and as that turned out to be more of a "Where-2-K," now the Sun has become the most recent victim to blame for our upcoming Armageddon. Mind you, most of these claims are coming from the alternative media, who again treasure alternative media sources for their documentation and confirmation. These media types do not consult scientists who are respected in the fields in which they work, rather they consult with so-called alternative spokespersons, prophets, and pseudoscientists (yes, I said that dreaded word) who profess "radical changes are a coming" and "head for the hills" mentality.

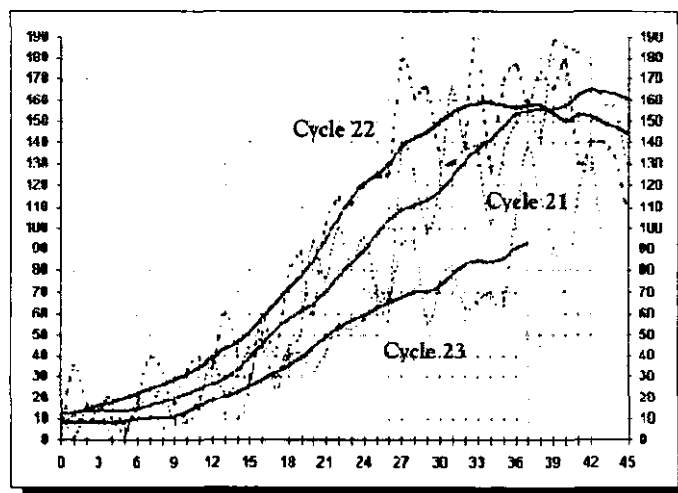
A classic example of this kind of behavior was presented to us at BSRF last year. We received several faxes from a couple of groups who had claimed that there was an extraordinary seismic event that occurred and had lasted for hours. They suggested that it had originated from deep inside the earth, and was unprecedented in that it was not felt by anyone. They had also suggested that it was probably a precursor to other potentially devastating seismic events. I perused the seismic databases in search of this anomaly and found nothing, so I asked the group if they could provide any data on the event. I received another fax with several seismograms from the internet's Live Seismic Server which appeared to detail this event with a statement from the group that the USGS was silent on the event — that they may be involved in a cover-up. After a quick glance at the seismograms it was easy to correlate the data exactly with a known event that had occurred on the day in question, and that their speculation on the duration of the event had stemmed from their inability to properly interpret the seismograms! Needless to say, after I replied to the group with the correct analysis, it was never mentioned again.

Of course, the USGS was not involved in any cover-up — they simply had no idea what these groups were talking about and chalked it up to more lunatic hysteria — as do many mainstream scientists when confronted with such data. I can hardly blame them for their reactions as this is becoming more com-

monplace as the millennium approaches. Many in the scientific community are being bombarded with allegations of covering up data and research even when they try to present their findings openly. In order for the alternative science community to properly liaison with mainstream science this will have to cease. It is our hope that these attacks do not encourage elements of quantitative science to withhold rather than reveal.

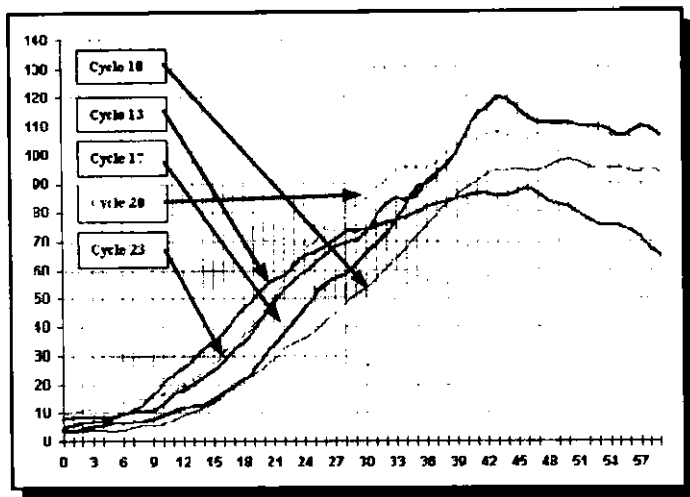
So then, what is really happening with our Sun? Is there something unusual and extraordinary about the recent rise in sunspot numbers? Are communications satellites, automobiles, computers, power plants, etc. going to be rendered useless? Is the sun going to explode soon or lash out with a gigantic fireball to consume the earth and her inhabitants? It's always a possibility, but I don't think so. There are some things that solar activity might be responsible for, but we'll check into that a little later. First, let's look at sunspot activity through recent history. It has been stated by some media personalities that the recent rise in sunspot numbers may be the highest ever recorded — that the jump to over 300 (or 340) is simply unprecedented. [note: "Sunspot Number" is comprised of a daily index of SUNSPOT activity (R), defined as $R = k(10g + s)$ where S = number of individual spots, g = number of sunspot groups, and k is a variable scaling factor (usually <1)]¹. Historical solar and geomagnetic data from 1956-1991 show that unsmoothed sunspot numbers² have indeed reached such levels and higher many times. Now, let's look at a graphical comparison of solar cycles 21, 22 and our current Cycle 23 (as of 01-01-00):

And, here is a graphical comparison of solar cycles 10, 13, 17, 20 and the current Cycle 23 (using the international



monthly smoothed sunspot number):

We can see from the above graphs that Cycle 23 (our present cycle) is about average. While Cycle 23 has been predicted to be



slightly above average (See: *Cycle 23 Will Be Above Average But No Record Setter*³) where Dr. David Hathaway of NASA's Marshall Space Flight Center said, "It's like saying we're going to have a mild or cold winter." It is now quite probable that the Earth's climate may be linked to sunspots. The "Little Ice Age" corresponded with a 70-year period, 1645-1715, when sunspots were thin in number, the Maunder minimum. Also, there are strong statistical associations linking current trends in climate (surface temperatures) to trends in solar activity (See these two excellent papers by Dr. Theodor Landscheidt from the Schroeter Institute for Research in Cycles of Solar Activity, Nova Scotia, Canada entitled, *Solar Activity: A Dominant Factor in Climate Dynamics*⁴, and *Solar Activity Controls El Niño and La Niña*⁵).

Now that we have fairly determined that Cycle 23 is not really any different than previous cycles, what is it that the sun will affect, and what is it that we should really concern ourselves with?

Sunspots and Human Behavior

The recent Solar Maximum gives us a wonderful opportunity to observe the Sun in action. Borderland Sciences has been investigating the relationship of the Sun and human behaviour for many years, and we are quite confident that we can predict behaviours based on sunspot fluctuations over very short and long durations within the Solar Cycle of 11 years. Historically, research has been conducted to link the 11 year cycle of the sun to changes in human behavior and society. The most famous research had been done by professor A.L. Tchijevsky, a Russian scientist, who presented a paper to the American Meteorological Society at Philadelphia in the late 19th century. He prepared a study of the history of mass human movement compared to the solar cycle, beginning with the division of the Solar cycle into four parts: 1) Minimum sunspot activity; 2) increasing sunspot activity; 3) maximum sunspot activity; 4) Decreasing sunspot activity. He then divided up the agitation of mass human movements into five phases:

- 1) provoking influence of leaders upon masses

- 2) the "exciting" effect of emphasized ideas upon the masses
- 3) the velocity of incitability due to the presence of a single psychic center

- 4) the extensive areas covered by mass movements
- 5) Integration and individualization of the masses

By these comparisons he constructed an "Index of Mass Human Excitability" covering each year from 500 B.C. to 1922 A.D. He investigated the histories of 72 countries in that period, noting signs of human unrest such as wars, revolutions, riots, expeditions and migrations, plus the number of humans involved. Tchijevsky found that fully 80% of the most significant events occurred during the years of maximum sunspot activity. He maintained that the "exciting" period may be explained by an acute change in the nervous and psychic character of humanity, which takes place at sunspot maxima.

Tchijevsky discovered that the solar minimum is the lag period when repression is tolerated by the masses, as if they lacked the vital energy to make the needed changes. He found that during the sunspot maximum, the movement of humans is also at its peak. Tchijevsky's study is the foundation of sunspot theory on human behavior, and as Harlan True Stetson, in his book *Sunspots and Their Effects* (available from BSRF), stated, "Until, however, someone can arrive at a more convincing excitability quotient for mass movements than professor Tchijevsky appears yet to have done, scientists will be reluctant to subscribe to all the conclusions which he sets forth." Stetson did acknowledge that the mechanism by which ultraviolet radiation is absorbed was still a puzzle biologists had to solve.

The mechanism behind the stimulation of human behavior is still a mystery, but the theories of Georges Lakhovsky may shed some light. He considered his book, *The Secret of Life* (reprinted by BSRF), the extension of a scientific hypothesis of a new theory of life. The Sun is one of Earth's primary sources of cosmic radiation. While the Sun does produce its own radiations, solar winds actually capture passing cosmic dust and radiation and blow it into the earth's atmosphere. While it may seem frightening to some, this can actually be considered the Primal Vibration that sets the cells vibrating with Vital Force. This is the Prana, that Cosmic Breath, which is meant to vitalize man, and is the source for our evolution.

Dr. George Crile, a distinguished American surgeon, studied the sun in light of its radiant energy. In the 'Preliminary Remarks' to Lakhovsky's *The Secret of Life*, Professor d'Arsonval quotes Crile: "It is clear that radiation produces the electrical current which operates adaptively the organism as a whole, producing memory, reason, imagination, emotion, the special senses, secretions, muscular action, the response to infection, normal growth, and the growth of benign tumours and cancers, all of which are governed adaptively by the electric charges that are generated by the short wave or ionizing radiation in protoplasm."

He felt that the entire energy system of living beings is controlled by radiant energy and electrical forces. D'Arsonval points out that Lakhovsky and Crile found that living cells are electrical cells functioning as system of generators, inductance lines, and insulators. The underlying mechanism is the oscillating circuit. An oscillating circuit is a circuit containing inductance and capac-

ity, which when supplied energy from an external source, is set in electrical vibration and oscillates at its natural frequency. D'Arsonval explains further that a conductor is said to possess inductance if a current flowing through it causes a magnetic field to be set up round it. The capacity of a condenser of an isolated body is a measure of the charge of the quantity of electricity it is capable of storing. From such a circuit, energy is readily given off in the form of waves. According to Lakhovsky, the nucleus of a living cell may be compared to an electrical oscillating circuit. The nucleus consists of tubular filaments, chromosomes, mitochondria, made up of insulating material and filled with a conducting fluid containing all the mineral salts found in sea water. These filaments are thus comparable to oscillating circuits endowed with capacity according to a specific frequency.

The cosmic radiation from the Sun is a blessing of Vital Force. As Lakhovsky has postulated, it is the cosmic radiations that give the cells their vibrant oscillations. While the sunspot maxima is occurring, the solar flares and the subsequent geomagnetic reactions effect the many subtle reactions that take place within our bodies at the atomic level. It has been theorized that this has a direct relationship to the metabolism of the body. We know it is the subtle magnetism of positive and negative charges that pulls certain particles across membranes in cells to produce energy. These magnetic exchanges result in the stimulation of enzymes and the production of energy like ATP. The increase of penetrating waves during a solar storm causes an excitation in these electro-chemical reactions within the body. Tchijevsky also identified correlations between changes in solar magnetic activity with biological processes. In light of Lakhovsky's theory in his own words, "...with the aid of elementary analogies, that the cell, essential organic unit in all living beings, is nothing but an electromagnetic resonator, capable of emitting and absorbing radiations of very high frequency." A plausible mechanism is provided to understanding the stimulating effects the radiation from the Sun has on human behavior. In an abstract entitled "Automated Experiment on Macro-fluctuation Monitoring" Bruns A.V. & Visolimsky B.M. also find a close relationship with the solar activity and bio-chemical reactions. "Phenomenologically obtained data could be treated like an effect of the surface (controlled by solar activity) on the physico-chemical kinetics. This effect was realized, evidently through the mechanisms close to nuclear magnetic resonance in geomagnetic field." In another historical study Suitbert Ertel writes in his article "Synchronous Bursts of Activity in Independent Cultures; Evidence for Extraterrestrial Connections" that evidence has been reported suggesting a link between historical oscillations of scientific creativity and solar cyclic variation. Eddy's discovery of abnormal secular periods of solar inactivity (Maunder's minimum type) offered the opportunity to put the present hypothesis to a crucial test. Using time series of flourish years of creators in science, literature, and painting (A.D. 600-1800) It was found as expected:

1) Cultural flourish curves show marked discontinuities (bursts) after the onset of secular solar excursions synchronously in Europe and China;

2) during periods of extended solar excursions, bursts of creativity in painting, literature, and science succeeded one another with lags of about 10-15 years;

3) The reported regularities of cultural output are prominent throughout with eminent creators. They decrease with ordinary professionals. The hypothesized extraterrestrial connection of human culture has thus been strengthened.

The evidence seems to show that during the maxima of sunspot activity human behavior is stimulated.

There is some Russian research that shows an increase in cardiac problems during sunspot maxima. The solar activity probably sets off a preexisting condition and no one is suggesting that people will drop dead in the streets. We could see the stress of solar activity on the biology of living things as an evolutionary agent weeding out the old and sick and strengthening those who can resonate with its radiations. In his 'Preliminary remarks to Lakhovsky's *The Secret of Life* the Professor d'Arsonval gives several examples of research done in the last hundred years that shows the most malefic effects from solar activity come at the sunspot minima. He notes from the British Medical Journal, March 7th & 14th of 1936 that both Colonel C.A. Gill and Dr. Conyers Morrel found increases in pandemics of deadly diseases during the period of minimal sunspot activity. In Gill's study he showed that every pandemic of malaria since sunspot records were taken had occurred when sunspot numbers were lowest. Similar trends were observed in East Africa and elsewhere with Yellow fever epidemics since 1800 occur during the sunspot minima. Dr. Conyers Morrel also finds that, "...waves of epidemic diseases covering considerable periods exhibit a very close correspondence with the phases of sunspot periods. Diphtheria, Typhus, and Dysentery seemed to prosper when there was an absence of solar activity. We also see an increase in disease in Solco W. Tromp's study. Without the stimulation from the Sun human health seems to diminish. The immune system seems to grow unresponsive during the solar lull and diseases can more easily gain a foothold in the body. Not only human health but Life itself seems hampered by the lack of solar activity. William Herschel wrote in 1801, "It seems probable analyzing the period between 1650 and 1713, and judging by the normal yields of wheat, that a scarcity of vegetation occurred whenever the sun appeared to be free from spots." The depressed state of metabolism and lack of food in agricultural centers may have seemed very inviting to the Mongols. Goncharov, in an abstract on the "Asian Nomadic Invasions and Solar Cycles", aid, "From the 4th to the 16th centuries the Central Asian Steepe was the cradle of the series of great nomadic tribal invasions into agricultural regions of Europe, China, and South Asia. Those invasions had similar features. They arose in middle latitudes and recurred every 160-220 years - exactly after solar abatements." □

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(Continued on back cover)

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BORDERLAND SCIENCES

"We have actually touched the Borderland where Matter and Force seem to merge into one another, the shadowy realm between the Known and Unknown ...

I venture to think that the greatest scientific problems of the future will find their solution in this Borderland, and even beyond; here, it seems to me, lie Ultimate Realities, subtle, far-reaching, wonderful."

— Sir William Crookes, 1879



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