

Water as a Resonant Medium for Unusual External Environmental Factors

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Summary

During the last Century multiple lines of converging evidence indicated the existence of a dynamic plasmatic energy existing within living organisms and water, and also as a background medium filling the atmosphere and vacuum of space. Experimenters such as Jacque Benveniste (memory of water), Frank Brown (external biological clock mechanism), Harold Burr (electrodynamical fields), Dayton Miller (cosmic ether of space), Bjorn Nordenstrom (bio-electrical circuits), Giorgio Piccardi (physical-chemical fields), Wilhelm Reich (bio-energy) and Viktor Schauberger (living water) independently measured a similar and unique cosmic-biological energy phenomenon. Their experiments frequently indicated water was a carrier for this previously unknown energetic force, which typically showed significant solar-terrestrial and meteorological components. Each of these scientists rested their claims upon experimental proofs, with many independent replications. Their works integrate with astrophysical findings on an *interstellar medium*, variously termed *cosmic plasma*, *dark matter*, or even *cosmic ether*. These and other natural scientists undertook decades of careful experimental work indicating the presence of

a water-affecting cosmic medium, typically being more active at higher altitudes, often tangibly interacting with dielectrical matter and being reflected by metals. All were marginalized or maligned by the scientific orthodoxy of their day. I successfully replicated some of the anomalous biological, physical and meteorological experiments of Reich, among others, and so have been able to ascertain important similarities in their diverse findings. Taken together these studies are suggestive of a major scientific breakthrough, of a unitary cosmic-biological energy phenomenon, ignored or dismissed prematurely during the 20th Century.

Introduction

Starting in the early 1970s, I reviewed in detail the historical experiments on the 19th Century *luminiferous cosmic ether*, and related vitalist concepts about a *life-energy* continuum in space. My investigations focused upon the *Chi energy* of Chinese medicine, the *cosmic external biological clock* mechanism discovered by the biologist Frank Brown (Brown et al. 1970; Brown 1976) the *external physico-chemical cosmic factors* of the chemist Giorgio Piccardi (1962, 1965, 1966, 1968, Piccardi and

Capel-Boute 1972) and the *cosmic life-energy* experiments of Wilhelm Reich (1960; Web ref.1). It was all very unorthodox, but had sufficient empirical and experimental proofs to withstand orthodox criticisms. This line of investigation ultimately led into mystery areas of the atmospheric sciences, specifically the long-observed correlations between solar variability and weather patterns, and new methods of regional weather modification within drylands. These in turn carried profound but lesser-known implications for the nature of what is today called the *interstellar medium*, or more generally, *space-energy*. These findings also have implications and probable practical applications for more recent investigations of *water structure*, and also of the *exclusion-zone* phenomenon (Pollack 2001).

My own investigations largely began with the drought catastrophes affecting the Sahel region of Africa in the 1970s. People and wildlife suffered unspeakably, leaving me to ask what could be done to restore rains into such an environment. Theory mattered not. All the “better-known concepts” proved to be essentially worthless. Nobody in government or the universities had any clear ideas on how or why the big major droughts developed, nor any practical solution towards doing something to meaningfully help out, other than to truck or fly in massive amounts of food aid, which was not a long-term solution. Even standard methods of weather modification such as cloudseeding, offered no help in regions characterized by a strong inversion, thick atmospheric dusts and haze, and no clouds whatsoever.

At that time, from a group of unorthodox naturalists and scientists I learned of a new method of precipitation enhancement which employed special hollow-pipe antennas grounded into large moving and alive bodies of water. They had good data to show, using these antennas in a specific manner

would trigger very widespread atmospheric changes and reactions, the end result of which was copious rainfall. It worked even under droughty or arid atmospheres. I witnessed several demonstrations which were so astonishing in result that I began an in-depth study of the matter. My first field trials with a self-constructed apparatus, called the *cloudbuster*, were undertaken during my graduate school years at the University of Kansas, Department of Geography-Meteorology (DeMeo 1979a).

The device itself was the 1950s invention of the radical naturalist and physician Wilhelm Reich (1960) who as history shows was severely maligned and assaulted for his findings (Greenfield 1974; Sharaf 1983). His experiments suggested space and the atmosphere was filled with a ubiquitous energy continuum, similar to the old luminiferous cosmic ether, but with additional empirically-developed properties. Reich’s energy continuum – which he termed the *orgone*, to preserve its connection with the living – was demonstrated by experiment to be excitable, compressible and pulsatory, like a giant field of extremely thin cosmic protoplasm. Water was strongly attracted to this same energy, and the energy was also attracted to water, the two being in a constant state of dynamical interaction or resonance. Reich’s cloudbuster device was basically a large water-grounded antenna which could be aimed at different parts of the sky. It capitalized upon these unorthodox properties of water, notably how the intensity of orgone charge in the atmosphere, which has parallels to electrostatic forces, was a determinant of cloud formation and ultimately of larger weather systems.

My work at KU demonstrated weather influences over the entire State of Kansas when the cloudbuster antenna was operated, and later studies suggested this was a minimal regional influence. The antenna

itself used no electrical or electromagnetic components, other than servo motors to move the heavy antenna around. It was an entirely passive device, like a specialized form of water-grounded lightning rod, and therefore could not function by known principles. Reich's original claims – of an interconnecting energy continuum existing within the Earth's atmosphere – thereby was deserving of a serious evaluation (DeMeo 1979b).

My investigations led into the conflict between theories of “empty space” versus “space-energy”, notably in relation to another of Reich's devices, a Faraday-type of metal-lined enclosure which did far more than merely “shield out” electromagnetic frequencies. Reich's special enclosures would anomalously intensify the energy density within their multi-layered interiors, in ways wholly unexpected by classical theory. They resembled a *hollow capacitor*, with the interior surface made of conductive ferromagnetic sheet metal, and the walls composed of alternating layers of ferromagnetic metal and high dielectric insulating material. A final layer of insulating material covered the exterior. Reich called these devices *orgone energy accumulators* (Reich 1948a, 1948b, 1951a) the orgone medium being intensified within their interior, which would then exhibit anomalous properties.

In 2009 I was invited to share my findings on these issues at the *Fourth Annual Conference on the Physics, Chemistry and Biology of Water* (Web ref.2) at Mount Snow, suggesting a growing willingness for a scientific reappraisal of these same concepts and findings. In this paper, I will detail some of my experimental investigations into Reich's claims, and then draw comparisons to other similar lines of investigation by others, nearly all of which have a fundamental bearing upon the nature of the atmospheric

and space environment, and how that environment affects the properties of water.

A Brief Review of Reich's Major Evidence

Reich's early work during and after medical school in Vienna, starting just after WW-I, was with Freud, working as a psychoanalyst. With Freud he studied the libido sexual-emotional energy in people's bodies, a phenomenon which worked to develop a person's character and emotional structure (Reich 1949a). While Freud and other psychoanalysts were to eventually abandon the libido concept, Reich continued with that line of investigation. By the 1930s he made the first-ever measurements of emotional and sexual excitation with millivoltmeters attached to the skin surface of patients, indicating a bio-electrical component to emotion (Reich 1982). Further experiments undertaken suggested the energy of emotion and sexuality was far more powerful than the small millivolts measured at the skin surface, and by a series of steps too lengthy for discussion here, led him to discover radiant energy-fields around both microbes and people. From there came the development of the orgone energy accumulator, in trials designed to capture and study the same radiant phenomenon, which could be seen, felt, trigger biological reactions, and also had measurable physical properties (Reich, 1938, 1942, 1982).

Reich's Orgone Energy Accumulator

As noted, Reich's accumulator device roughly resembles a large hollow capacitor, having a layered structure which, when optimally constructed, develops a high energy density within its interior due to the placement in the walls of alternating layers of high-dielectric insulating materials with ferromagnetic conductor steel wool or sheet metal. It terminates with a hollow interior

space lined with the conductor material (Reich 1948b, 1951a) which can be accessed by a door in the enclosure. The device is then used to observe the properties of the interior space, or to charge up objects, plants or lab animals. It is a unique structure, without precedent in science or engineering, and in fact has only slight resemblance to the usual Faraday shield enclosure.

A variety of demonstrable physical effects within the interior of the accumulator were noted by Reich, and confirmed by his contemporary associates. (Web ref.1) These include:

- A significant slowing of electroscopic “natural leak” discharge rates (or, increase in charge density) inside the accumulator as compared to the immediate outside; (Reich 1939)
- An anomalous slight temperature increase inside the accumulator, of around 0.1°C to upwards of several degrees under special conditions; (Reich 1944)
- A visible blue-glowing anomaly from within orgone-charged high-vacuum tubes was photographed; (Reich 1949b)
- The spontaneous fogging of unwrapped camera films; (Reich 1942, 1948c)
- The appearance on x-ray films of a smoke-like anomaly surrounding the hands; (Reich 1949c)
- Anomalous high counts per minute (cpm) reactions on ionization-type Geiger-Müller (GM) counters charged up inside the accumulator; (Reich 1951b)
- The weather-reactive and sunspot-reactive nature of the orgone accumulator, in that it will increase its charge during clear weather and high sunspot counts, but decrease its charge during rainy-overcast weather and low sunspot counts. (Reich 1949b, 1950, 1951b)

Reich also observed the accumulator had demonstrable revitalizing health benefits

for people. Notably there were symptom-reductions for those suffering from what Reich termed the *undercharged biopathies* (1948b). His experiments showed a daily charging of cancer mice inside orgone accumulators would triple their life-span as compared to a control group (1948b). From this, he undertook cancer therapy experiments, but never considered the symptom-

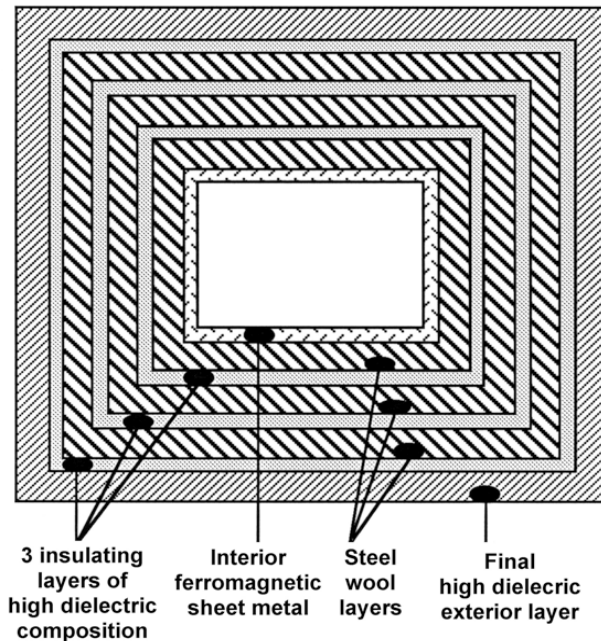


Figure 1: Schematic cross-section of an orgone accumulator, showing its layered construction. The interior layer is ferromagnetic sheet metal, the organic-insulating layers are of high-dielectric materials.



Figure 2: A small orgone accumulator as used experimentally in the author’s laboratory, constructed according to Reich’s protocols, which are exacting.



Figure 3: *Orgone Energy Darkroom, at the author's laboratory, with several human-sized orgone accumulators and smaller chargers inside.*

atic relief to constitute “a cure”. He developed a special Reich Blood Test (Reich 1948b; Raphael and MacDonald 1952) based upon the observable energetic charge and resistance to disintegration of stressed red blood cells. An electronic apparatus, the *orgone field meter*, which by inductive charging of a large flat accumulator with attached glow-tube and photometer, made it possible to demonstrate the existence of an energy-field around people, as well as to measure its strength (Reich 1948d).

Reich's Method of Precipitation Enhancement: *Cloudbusting*

Reich's findings on the orgone energy accumulator led directly into his weather-related research. By his theory, the atmosphere and cosmic space were filled with a free form of this same biologically-activating energy, which exhibited pulsatory qualities of increased and decreased charge. The function of pulsation within the accumulator appeared in coordination with dry-period expansion and wet-period contraction of the larger atmosphere. As detailed above, cyclical or pulsatory effects were apparent in biological and physical experiments with the accumulator, including those which investigated the influences of weather and

sunspots on the properties of high vacuum (Reich 1949b, 1950). His findings suggested a cosmic force at work, existing in space, but also underlying weather changes.

While the basic principles are too complex to be detailed here, the main point of interest is that the cloudbuster antenna device only works properly when it is grounded into a reasonably large body of clean and clear flowing water. The water must also be of sufficiently good quality as to be life-supporting. Stagnant ponds or polluted rivers do not reproduce the effects. One must use subjectively *living water*, with a typically bluish and clear coloration, and capable of supporting higher forms of aquatic life. Only then will it work. This point, as will be detailed later, is of critical importance to the whole issue of water structuring.

Reich firstly used his cloudbuster device as a means of cloud-dissipation, when his region was plagued with dark non-rainy clouds associated with an episode of regional drought and forest death. He reported success in stimulating cloud growth with the device, ending several droughts in the Eastern USA. In 1952, he undertook a major effort towards desert-greening in the arid region around Tucson, Arizona, reporting many positive indications – such as restoring rains and natural grass growth to areas which had been barren over living memory (Reich 1955, 1957).

Reich's publications indicate he was the first scientist to describe the role of stagnating atmospheric haze as a precipitation-blocking factor in drought and desert atmospheres (DeMeo 1996; Reich 1952, 1954a, 1955). Reid Bryson's work on a similar blocking mechanisms for desert dusts was better known (Bryson and Baerreis 1967; Bryson and Murray 1977) but the dust theory suffered from the assumption that *atmospheric haze* is composed 100% of opaque

aerosol particles. Reich attributed at least some of what we call “haze” to a stagnated form of the atmospheric orgone, which impedes the transmission of light, a point for which he had considerable empirical data from other directions, as detailed below. Reich’s orgone is an *ether-like energy continuum*, upon which the mechanics of light-transmission may be dependent. Bryson’s arguments, like those of Reich, were never widely acknowledged by atmospheric scientists, even though his ideas were very much in keeping with orthodox theory. As Reich described repeatedly, and which I was able to confirm in my own replication studies, however, it is apparent that desert haze can be softened and observably reduced with a few minutes work with the cloudbuster device. If haze were fully composed of particulate matter, this would not be possible. Based upon Reich’s theory, and data on atmospheric haze, I produced a comprehensive *Desert-Drought Map* which suggests a trans-oceanic global interconnectivity between all desert regions of the world, from which stagnant-hazy atmospheric conditions periodically erupt to trigger droughts in more distant regions (DeMeo 1989a, 1994).

Reich also appears to have been the first scientist to fully describe what was later termed *forest-death* by mainstream biology (DeMeo 1996; Reich 1953a, 1957; Reich and McCullough 1955). As early as the late 1940s, he described the dying of trees from the top-down, hazy and suffocated atmospheres filled with ozones and acids, blackening rock surfaces, and other components widely observed and acknowledged today but virtually unknown to mainstream science in Reich’s time. It was not until the late 1960s that similar reports began to emerge in public environmental discussions (Fisher et al. 1968).

Reich also was one of the first natural scien-

tist to publish findings on the existence of high altitude wind-streams, at least outside of military circles where high-flying bombers firstly encountered them, based upon his field observations with the cloudbuster. (Reich 1954b) He argued for the existence of stratospheric energy streams, derived from cosmic space and moving down to lower elevations, which helped push the atmosphere into motion (Reich 1951, 1954b). This idea, which went completely against the atmospheric science of his time, is today finding some affirmation in the existence of stratospheric winds which provide a link between solar variability and the troposphere, in the development and movements of storm system (Labitzke 2001; Labitzke and van Loon 1997).

Unlike Reich’s prior therapeutic findings, which were followed in serious detail by groups of physicians, his weather-related research attracted lesser interest, certainly in part due to an on-going media smear campaign directed against him, and which triggered a misdirected “investigation” by the US Food and Drug Administration (Greenfield 1974; Sharaf 1983). The most serious scientific replications of his weather research findings took place only in the decades after his death.

Replications of Reich’s Findings I: The Orgone Accumulator

Electroscopical Anomalies in the Reich Accumulator

As noted above, the interior of an orgone accumulator – using the “hollow capacitor” analogy – will demonstrably *slow down* the natural leak or discharge rate of a charged static electroscope (Reich 1944). It is an experiment sufficiently reproducible as to be a standard demonstration of the unusual energetic effects of the orgone accumulator. This experiment is of particular interest for

the issue of water, given how electrical field or charge can influence the structural or phase-change properties of water (Ehre et al. 2010). At my laboratory, during the dry summer period the accumulator regularly shows the ability to slow down the discharge rate of a static electroscope by from two to five times over what happens in the open air around the same time of day. This is so, even when the door to the accumulator is left fully open, allowing the same room air affecting the control location to freely enter the accumulator.

For example, in one run of measurements during 27-29 September 2010, and using a sensitive Kolbe-type of static electroscope with attached photogate, I recorded a statistically-significant ($p=0.006$) almost five-fold increase in discharge times inside an orgone accumulator, with a mean time of 596.9 sec., as compared to set of paired control-run discharge times with a mean of 122.6 sec. This experiment was run with the door to the accumulator fully open, with the control-run location at 1 meter distance, using the same instrument under basically identical conditions around the same times of day. In one case, the discharge inside the accumulator appeared to halt altogether, with the needle blocking the photogate for more than 3 hours. In other rare cases, I have witnessed a slightly-charged static electroscope being literally “charged up” to a higher voltage when allowed to sit undisturbed inside a strong orgone accumulator. This cannot be friction-produced “electrostatics” as currently understood.

In a related manner, one of Reich’s other experimental devices, the cloudbuster antenna – which will be discussed in detail shortly – when reduced to a laboratory-scale model, has the reverse effect upon the charged electroscope. This antenna device is composed of a series of hollow pipes grounded into moving and life-supporting

water. When aimed into central core of an isolated cloud, that cloud trends towards dissipation, a losing of it’s internal charge (Reich 1952; DeMeo 1979a). The point of interest here, is how a charged electroscope in the open air will, like an isolated cloud, *discharge more quickly* if a small laboratory-scale “cloudbuster” device is aimed at it, even though there is no physical touching of the electroscope, nor any kind of external voltages applied to the cloudbuster antenna. This experiment was conducted systematically by Konia, (1983) who found the discharge rate of a charged Kolbe-type of static electroscope was increased or speeded by around 37% merely by aiming at it a scaled-down and water-grounded cloudbuster antenna.

Thermal Anomaly in the Reich Accumulator

Reich’s experiment showing a thermal anomaly inside the orgone accumulator (Reich 1944), using a small strong orgone accumulator with thermally balanced control enclosure, has also been confirmed at my laboratory. (DeMeo 2010a) This study ran over several years and used calibrated thermistors with an automated DAQ system, in a special fully enclosed and darkened outdoor shelter where internal thermal variations were minimized. The two experimental enclosures (accumulator, control) were placed on a slowly rotating

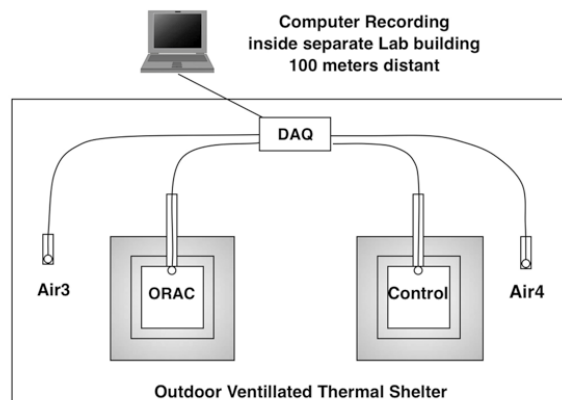


Figure 4: Apparatus for the Reich Thermal Anomaly Experiment (DeMeo 2010a)

platform, to further equal out remaining environmental variations inside the structure. A pulsating thermal anomaly nevertheless appeared inside the accumulator. For example, in one 11-day run in September 2008, under optimal dry conditions (see Figure 5), the accumulator spontaneously developed an average $+0.11^{\circ}\text{C}$ over the control device, with peak temperatures of up to $+0.6$ at Solar noon. Solar noon and midnight always marked the maxima and minima of the thermal anomaly, but not the daily high and low temperatures of around 3 PM and 5 AM, which had no discernable effect. This indicated, the temperature residuals inside the orgone accumulator reflected a solar-excitation function outside of purely thermal influences. Also, under rainy and overcast conditions, when the accumulator is known to lose its charge and

simply become an “ordinary box”, the thermal anomaly vanished to near the limits of the instrumentation, even though the daily temperature variation was considerable (DeMeo 2010).

While the magnitude of the orgone accumulator temperature anomaly may not appear to great, its magnitude and significance is roughly comparable to the 3°K residual cosmic background radiation, and may even provide an alternative explanation for that residual – as the direct product of orgone-energetic processes in open space, creating its little bit of heat in the “here and now”. The thermal anomaly in the orgone accumulator was sufficiently robust and meaningful that when Reich demonstrated it to Albert Einstein during a five-hour meeting in January 1941, Einstein immediately un-

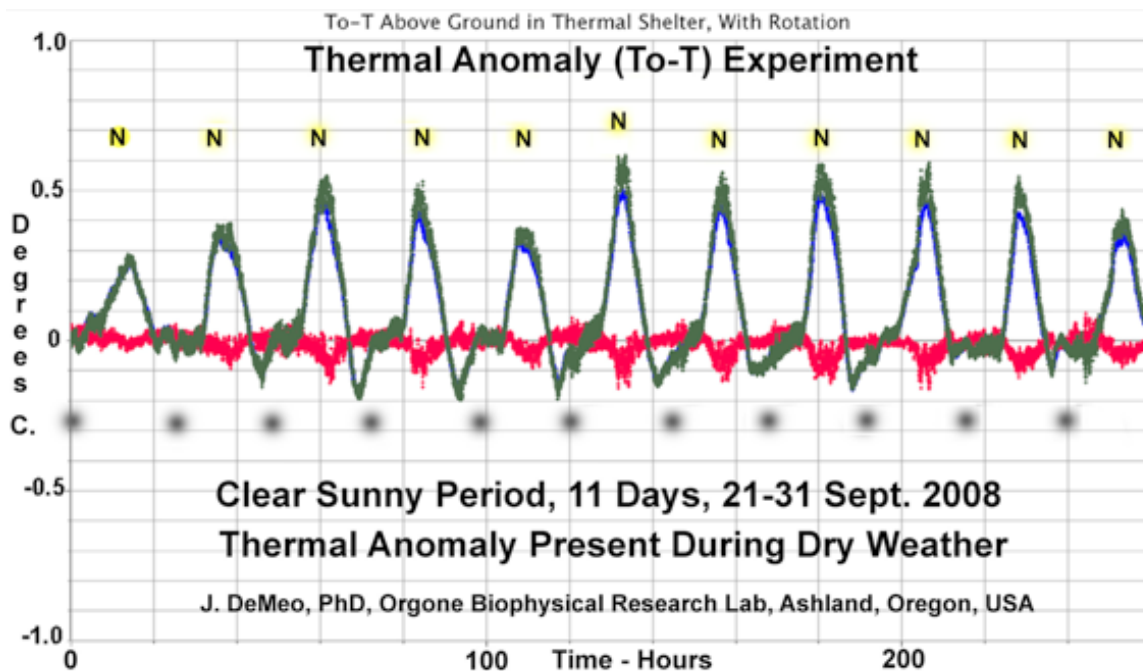


Figure 5: Representative Result from a Replication of the Reich Thermal Anomaly Experiment. (DeMeo 2010a) Red line tracing is the difference between two open-air thermistors suspended near to the two enclosures (orgone accumulator and control) showing minimal differences over the course of the day. The Blue tracing marks the differences between the interior orgone accumulator and control-enclosure temperatures, while the Green tracing takes the Blue values and subtracts the ambient background variations as depicted in the Red values. The Green and Blue tracings are nearly identical, indicating the experiment was properly shielded from environmental temperature variations, which were greatly minimized inside the experimental shelter. A pulsating thermal heating anomaly nevertheless appeared within the orgone accumulator, with a peak maxima at solar noon ranging up to 0.6°C , and minima near midnight. The experiment was unresponsive to daily temperature variations, which typically reach a maxima around 3 PM, and a minima around 5 AM, just before sunrise.

derstood the implications and termed it “a great bomb in physics” or “bombshell for physics”. (Reich 1953b)

Luminous and High-Vacuum Anomalies in the Reich Accumulator

Reich wrote about direct visual and sensory perceptions of the orgone energy, as one could make in the larger human-sized accumulators. I will report my findings on the objective and subjective biological reactions shortly, but can firstly report having successfully photographed the blue glow from an orgone-charged high-vacuum tube, which was kept stored inside the strongest of my accumulators for about a year. (DeMeo 2002a) This is shown in Figure 6. While most evacuated tubes with a moderate to high vacuum will exhibit a bluish glowing effect when excited by electricity, the main observation of Reich was, that orgone charging them reduced the amount of electricity necessary to elicit the glow. His own published photo used a tube evacuated down to 0.5 micron pressure, applying a few hundred volts only, showing a reduction over time in the amount of electrical excitation required to achieve the same effect. In my own replication of this phenomenon, I was able to reproduce a similar blue glow in a similar 0.5 micron pressure tube charged up for about a year in the orgone accumulator. It would glow if merely stroked with the open hand, even though the human hand carries only a few hundred millivolts of charge. The glow-discharge would occur no matter what kind of wires were added to try and short it out, either by connecting the two tube-ends to each other, or grounding them singly or in common, or by wrapping bare grounding wires to my own body and hands, or between my hands and the tube. Nothing could be done to eliminate the glow when the tube was stroked, as one might stroke a cat. Such non-electrical properties of this phenomenon was in part what

led Reich to conclude it was not primarily electrical nor ionization in nature. (Reich 1949b, 1951a) I was able to make a photograph of the phenomenon by using 35mm color film with an exposure of around 20 minutes, during which time I was continuously stroking the tube.

GM-Counter and Radiation Anomalies in Reich Accumulator

Reich also obtained anomalous high-count reactions from orgone-charged GM tubes attached to standard counters of his day. (Reich 1951b) This I have also confirmed abundantly, in my own experiments over several years of charging up a Ludlum 12-4 neutron detector. The neutron detector uses a thick-walled ionization type of GM tube surrounded by a 12-inch diameter high-dielectric neutron-moderating polyball. The instrument is designed to react only with neutrons as from strong atomic radiation, which is the only way you can get any significant number of neutrons. It was factory calibrated at the start of the experiment, and before charging up in the accumulator typically gave about one “chirp” or neutron reaction per minute, or less. It was left to charge up inside a strong orgone accumulator over many months, and periodically I would turn it on to see if anomalous readings would develop. After about two years of charging up, it suddenly became reactive, emitting from hundreds to several thousand cpm, and was then put into

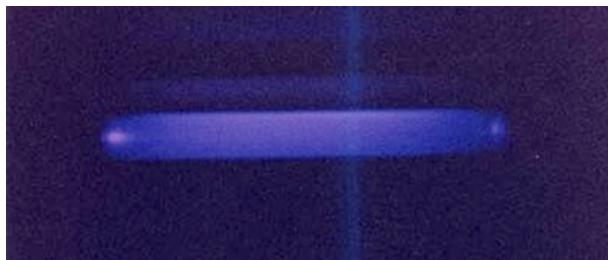


Figure 6: Blue lumination of ~450 nm, from a high-vacuum (0.5 micron) pressure glass tube, charged in a strong orgone accumulator over a year. No electricity was applied. The tube glows only from hand-stroking. (DeMeo 2002a)

continuous operation with a DAQ system. At this point, the neutron counter was no longer counting “neutrons”, but instead as Reich had noted, became reactive to a new atmospheric-energetic parameter related to weather changes and sunspot abundance.

While the data from this multi-year experiment has not yet been systematically evaluated, the reactions are substantial enough as to say it confirms Reich in a powerful way. The average counts during the early to mid 2000 decade were hovering at a steady several hundred cpm, but with weather changes or sunspot activity, would soar up to 3000 to 4000 cpm. If this high rate of cpm truly was neutrons, it would be something quite deadly. Additionally, over the years from c.2008 through mid 2010, when sunspots remained very low, the neutron counter also declined in activity, with reduced counts down to around 20-30 cpm.

Since mid-2010 when solar activity has increased a bit, the neutron counter is again yielding several hundred up to ~1000 cpm. It therefore appears to be a direct measure of solar activity, though this cannot be “neutrons” as conventionally understood. During the pre-2008 periods of higher sunspots and high cpm on the orgone-charged neutron counter, a diurnal variation was also observed, with maximum peak at the time of day when the sun was at zenith. This suggests, the orgone-charged neutron counter becomes sensitive to some kind of solar excitation function, just as seen in the thermal anomaly experiment, even while the orgone accumulator darkroom in which it was located constitutes a steel-lined and earth-grounded enclosure, which by orthodox theory should “shield” it from most forms of known radiation. Figure 7 shows one tracing of very high neutron counts over a 10-day period in 2005. (Web ref.3)

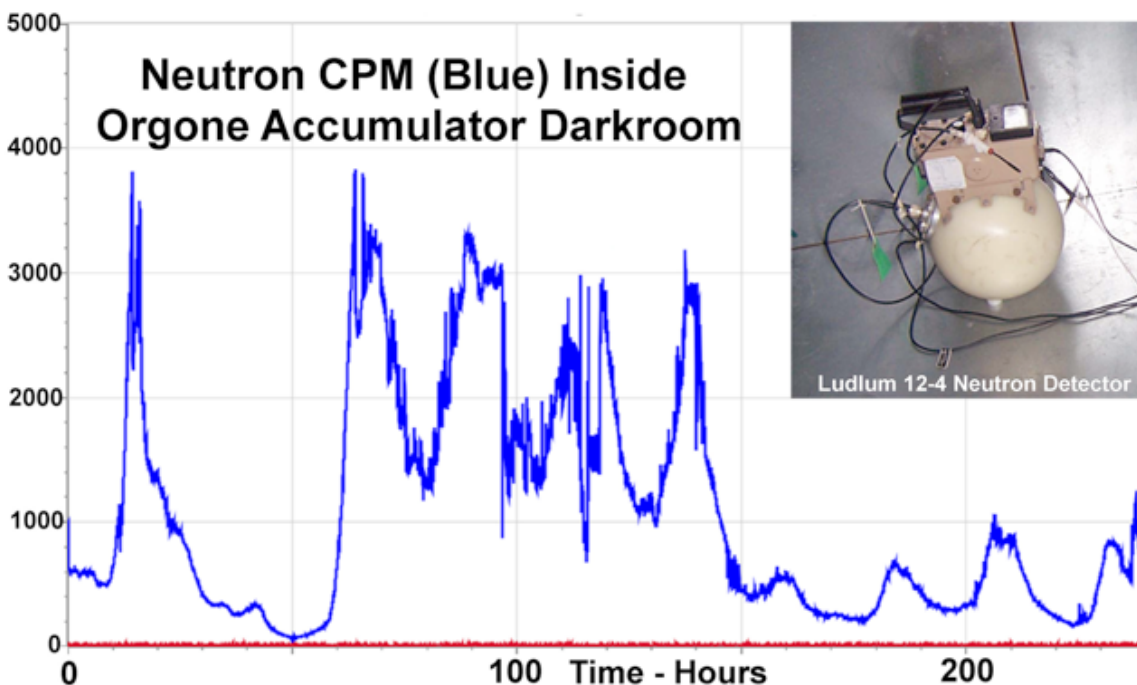


Figure 7: Count rate per minute from an orgone-charged Ludlum 12-4 neutron counter, over 250 hours (10.5 days) from 4-14 February 2007. The peaks, which range up to 4000 cpm, are approximately 24 hours apart, marking the time of solar-noon at the laboratory site. The counter with poly-ball is shown in the inset image, inside the metal-lined orgone accumulator darkroom. The red line at the bottom is the simultaneous cpm readings of a separate GM device (RadAlert 100), which showed no such reaction beyond normal background counts (~20-30 cpm), indicating the choice of detectors is critical for this experiment. (Web ref.3)

This unusual reaction of radiation-detection instruments to the orgone accumulator also has an associated anomaly, that direct orgone-charging of radioactive materials has a reported influence upon their decay-rate “constants”. This phenomenon was originally reported by Reich (1951), with partial confirmations by Milian (2002) working at the University of Valencia, Spain. Similar natural and significant changes in decay-rate “constants” have also been reported by chemists and radiation biophysicists since the mid-20th Century (Anderson and Spangler 1973; Emery 1972).

Water Anomalies in the Reich Accumulator

The orgone accumulator also has the capacity to charge water, to yield unusual reactions that may help to understand the behavior of structured water.

One of my early experiments from September-October 1976 demonstrated water evaporation from an open Petri dish is

slowed down if kept inside an orgone energy accumulator, as compared to a second dish of water kept inside a control enclosure (DeMeo 1980). The result was suggestive of an increased internal water cohesion and surface tension, as one might anticipate from increased charge density inside the accumulator. The primary data on this experiment is reproduced in Figure 8, which shows an episodic or pulsatory water-charging and evaporation-suppression effect. The accumulator-charged water suppressed evaporation by up to three grams/day over the control under sunny periods when the charge inside the orgone accumulator is greatest. During rainy periods when the accumulator charge is lowest, being bound up with local atmospheric water vapor or cloud droplets, evaporation differences between the accumulator and control were negligible, or zero. The data also showed a disruption of orgone accumulator functions during the period of atomic fallout during the period of atomic fallout in the laboratory region of rural Pennsylvania, following a Chinese atomic bomb test in the atmosphere on 26 September of

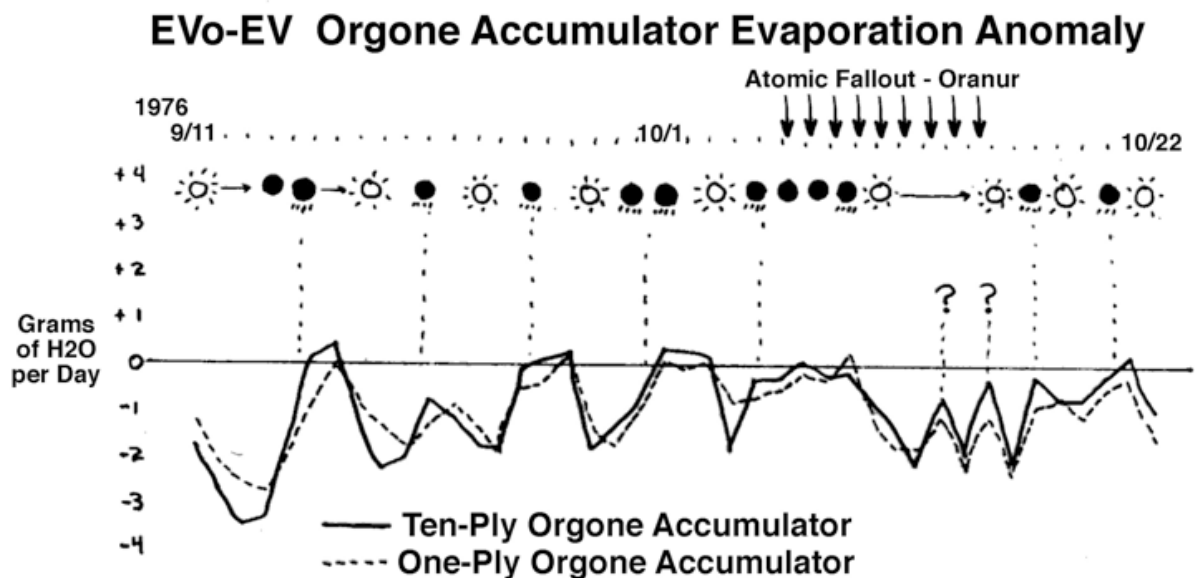


Figure 8: *Water Evaporation Suppression Effect of the Orgone Accumulator. Evaporation in the orgone accumulator (EVo) minus evaporation in the control (EV), over 42 days in 1976, at a lab in Eastern Pennsylvania. Evaporation of water is suppressed during sunny days when the accumulator has a stronger charge, but is no longer suppressed under rainy periods. Accumulators and Control enclosures were balanced as to temperature and humidity, and independent plots of changing atmospheric parameters did not show any correlations to the EVo-EV determinations. (DeMeo 1980)*

that year. The fallout was intensive enough to prompt a warning on sales of milk products in the NE USA, due to ^{131}I and ^{137}Cs contamination carried over the Pacific on the winds. (Simpson et al. 1981).

These data are preliminary, but nevertheless suggest not only that the orgone accumulator's charge-density factors can influence the tensional-cohesion of water very directly, such that its evaporation is suppressed; but also that this charge-density factor is disrupted when the accumulator and/or the water samples are exposed to toxic levels of nuclear radiation.

The orgone accumulator also affects the spectral properties of water, as I discovered using a UV-Visible spectrometer (Ocean Optics USB4000 UV-VIS) with a range of 220-950 nm. An ordinary sample of very good tasting and clear uncontaminated water from a deep mountain well fed by snowmelt, has a pronounced UV absorption across the range from 250 through 330 nm, as compared to a distilled water sample. Frequencies below ~ 400 nm are invisible to the eye, and one only encounters visible dark purple or blue frequencies above 400 nm. Ordinary bottled distilled water, or that from a city-water tap also absorbs this invisible UV, but not to the same extent. Consequently, the absorption peak of 250-330 nm is clearly associated with whatever the water picks up as runoff or later underground. But this spectral absorption reaction does not appear to be due to the mineral content of the water, as that absorption peak begins to dissipate once it is taken from the ground, even when kept in a sealed storage container. Experiments with the orgone accumulator further suggest this is the case.

As mentioned, our good mountain well water begins to lose its capacity to absorb UV in the 250-330 nm range within a few days or weeks after being removed from the ground-

water, specifically when placed inside special 10 cm. sealed quartz-glass cuvettes, as used for the experiment I will describe. Two water samples were drawn in October 2010, labeled as Control Cuvette A and Test Cuvette B, the latter of which would ultimately be charged inside an orgone accumulator. A baseline spectral analysis was performed on both samples *before charging*, over the period from October through December. During that period both cuvettes showed a roughly equal but progressively diminishing UV absorption, both cuvettes progressively losing their UV-absorbing qualities over time. Just before charging of Test Cuvette B, it showed a slightly *lower absorption* with negative values of from -0.02 to -0.03 absorption units, as compared to Control Cuvette A. After about one month of charging in the orgone accumulator, however, Test Cuvette B had halted further declines in its UV-absorption, eventually showing a higher absorption than Control Cuvette A, by from +0.015 to +0.03 units. This reversal was not a large difference, but one must consider the highly transparent nature of water samples, which make even small differences potentially significant. Ordinary 1 cm cuvettes would not show any result, so this experiment was made using 10 cm cuvettes, to give a longer path for the light to travel, and interact with the water.

Figure 9 shows this result, with a greater absorption in the orgone-charged sample of Test Cuvette B, as compared to Control Cuvette A. Again, it is difficult to explain this result as due to the mineral content of the water samples, which remained the same in both cases. These findings indicate the orgone energy accumulator does something to the water, affecting its structural qualities as were present when the samples were firstly drawn from the mountain water well, allowing the charged sample to more readily retain those qualities over time. Whatever is imparted to the water by the orgone

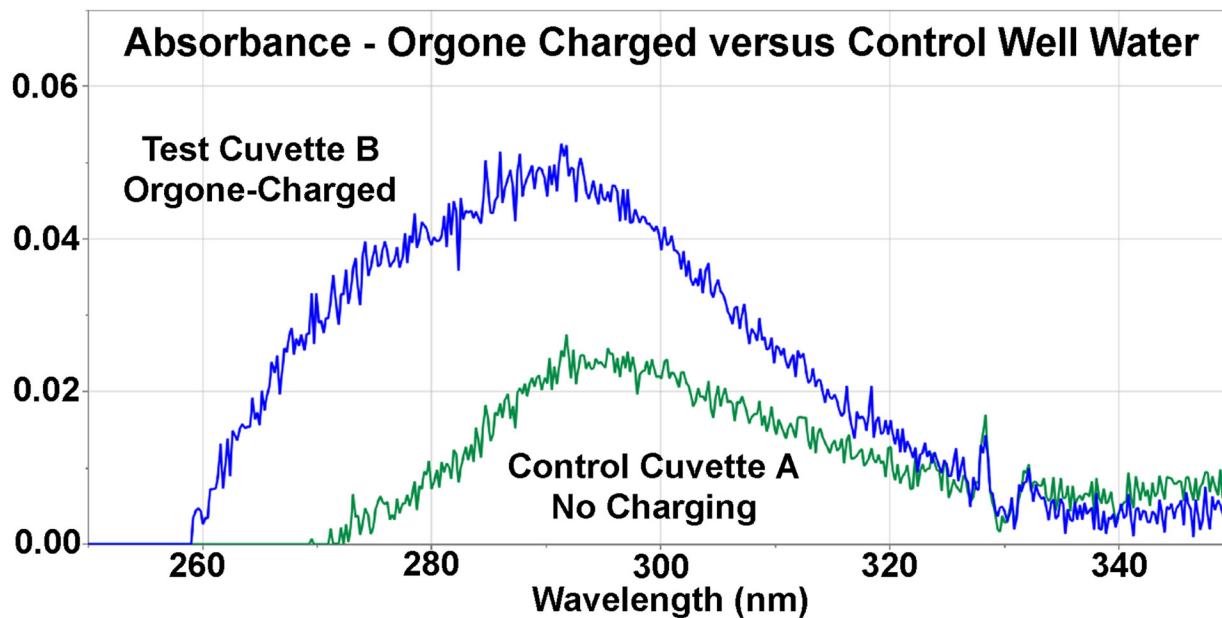


Figure 9: UV absorption of a well-water sample is influenced by charging inside an orgone accumulator. In this case, the slow loss of UV absorption over several months was slowed retarded by orgone-charging of the Cuvette B sample. Prior to charging, Cuvette B consistently showed a lower absorption than Cuvette A. After charging, Cuvette B showed a higher absorption, possibly due to an effect upon water structuring.

accumulator appears to be the factor absorbing these UV frequencies.

Interestingly, a nearly-identical absorption of UV frequencies has been observed within highly-ordered structured water within the *exclusion zone* found near to high-dielectric and hydrophilic materials or membrane surfaces, as noted by Chai et al. (2008). Water in contact with such materials spontaneously assembles into highly ordered layers of structured water up to several hundred micrometers deep, well beyond that anticipated by conventional theory. The water in these exclusion zones, which also repulses solutes and particulates, shows an absorption peak at ~270 nm, ranging across 250-300 nm, similar to the UV-absorbance of orgone-accumulator-charged water noted above. Chai et al's experiments also yielded fluorescence emission-spectra reactions peaking in approximately the blue-frequency range, of 400-500 nm, similar to that noted by Reich for his bluish *orgone lumination*, as seen also in the various photographs and examples given in this paper.

Reich identified such a blue as the specific color-signature of the orgone energy, as seen above in Figure 6, of an orgone-charged high-vacuum tube excited into blue fluorescence by simple hand-stroking (DeMeo 2002a). He argued for a similar *blue lumination-fluorescence* process in deep ocean or lake waters, in the radiation-fields of certain microbes as viewed in the microscope, and as sometimes seen in the open air surrounding healthy forests and mountains, as well as in many different natural phenomena, including the bluish color of the open daytime sky. In this, his ideas contrasted sharply with the Rayleigh light-scattering theory, substituting instead a set of concepts very similar to what is suggested in these spectroscopy experiments. I have also observed this same bluish color to anomalously exist in shallow thermal hot springs and glacial pools, as I discuss below, which also challenge the light-scattering theory and speaks more in favor of Reich's lumination-fluorescence mechanism.

From this, we may offer a few postulates:

Natural and unpolluted water sources, or the water in cells and under other circumstances of a higher charge-density, not only exhibits greater structural properties, but under sufficient excitation – UV light in this case – also shows a bluish lumination exactly as Reich described. Or, in the terms of modern spectroscopy, there is a visible *fluorescence* of the charged water within the blue-color range of 450-490 nm. It is also reasonable to anticipate, the more intensive is the charge-density factor in the water, or in the atmosphere, and the greater the exciting energy, the greater would be the luminous fluorescence from it. Exclusion zone water may have similar physical properties to our accumulator-charged water, and to natural highly-charged blue-glowing water sources, all of which indicate a greater cohesion of the water molecules, and a similar absorbance and fluorescence spectra. Consequently, we may be dealing with a similar mechanism. These postulates have yet to be established beyond a few indicatory experiments, but they are reasonable working hypotheses, with potentially very practical applications. At minimum, they give us a whole new appreciation for the term *fresh water*.

Plant-Growth Experiments with the Reich Accumulator

Seed-sprouting experiments undertaken in the orgone accumulator at my laboratory typically show from 30% to 40% increase in growth over the control groups. Figure 10 presents a photograph of a representative example of this seed-charging effect, for both control and orgone-charged samples. Figure 11 further shows two histograms from a controlled seed-charging experiment which ran over three summers from 1998 to 2000. (DeMeo 2002b) Mung bean seeds placed into evaporation dishes were sprouted in a strong orgone accumulator. An identical control group was sprouted in

a special nearby shelter allowing for control of other variables. The accumulator group yielded a 34% increase in growth-length of the sprouted seedlings over the control group, with a high level of significance ($p < 0001$).

Orgone-charged plant-growth experiments have been repeatedly undertaken since Reich's time, with some of the best controlled experimental results observed by organic gardeners such as Espanca (1981-1986) who obtained significant increases in garden yields. Her work primarily attracted attention within organic gardening circles. However, my own experiments remain among the best and most systematically reproducible results reported so far in a laboratory environment. I attribute such good results to the optimal conditions for orgone research experiments as is found at my high-altitude laboratory in rural forested Oregon, which is remote from all forms of atomic and electrosmog EMF radiations (DeMeo 2010b).

Laboratory Animal Experiments with the Reich Accumulator

Orgone accumulator testing on laboratory animals has also proceeded. Experiments by Blasband (2010), Trotta and Marer (1990), and Grad (1992) have all shown the lifetimes of cancer mice or leukemia mice

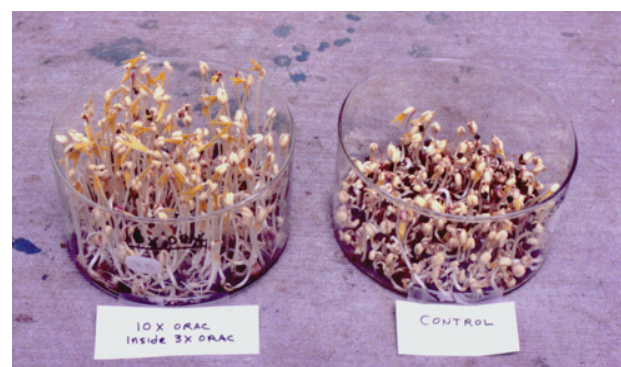


Figure 10: Orgone-Charged seedlings (left) versus Control seedlings (right), a fairly systematic and reproducible effect of the orgone accumulator under optimal conditions. (DeMeo 2002b)

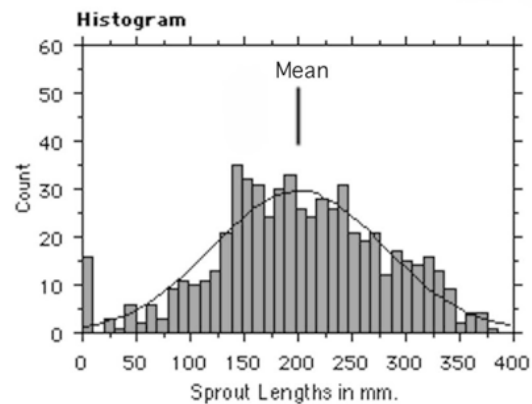
can be increased by from 50% to 200% over controls, merely by charging them up inside an orgone accumulator for an hour per day. A mouse wound-healing experiment by Baker et al. (1984-85) showed from a 1% to 12% increase in healing rates.

Human Physiology and Healing Experiments with the Reich Accumulator

Regarding human subjects, there are two double-blind controlled studies which have been undertaken to evaluate the orgone accumulator over a dummy-box or sham device. Both of these showed very clear effects from the accumulator, verifying Reich's original claims for a mild parasympathetic stimulus, with attending slight increases in body core temperature, and moderations of blood pressure, pulse rate, and other physiological measures. The study by Müschenich and Gebauer (1986) at the University of Marburg, and by Hebenstreit (1995) at the University of Vienna, both produced positive results of moderate statistical significance. A control dummy-box used in both these studies, where neither the participants nor those carrying out the experiments knew the reasons for having people sit inside a "mere box" over a period of a half-hour. Alvarez (2008) also conducted an evaluation of the *orgone blanket* – a device similar to an orgone accumulator box, but of lighter construction and typically reduced intensity of effects. This experiment evaluated physiological and psychological parameters, such as urinary excretion of free radicals as measured by the colorimetric tests, and dehydroepiandrosterone (DHEA) levels as measured in saliva. Positive trends were observed, but the results were not statistically significant, possibly due to the weaker orgone-charge as found in orgone blankets, and rainy episodes during the test period.

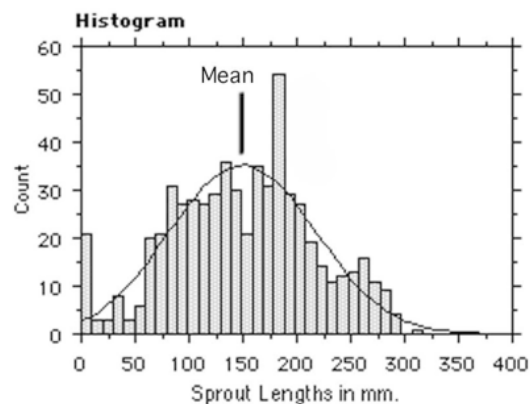
Extended clinical reviews of the accumulator's effectiveness, showing most promising positive results for a variety of health conditions and injuries were published by Fuckert (1989), Lassek (1991) and Kavouras (2005). Additionally, Maglione and Mazzocchi (2011) undertook a controlled study of human physiological response to the orgone accumulator, using body core temperature and the Ryodoraku technique of electro-acupuncture for analysis. The study showed a significant result on body-core temperature, with average increases of 0.24°C . ($p=0.006$) but mixed result on the Ryodoraku technique. Müschenich (1995)

**ORGONE-CHARGED MUNG BEAN SPROUTS
3-TRIALS COMBINED (n=600)**



**OR-Charged
Average of ~200mm length**

**CONTROL (Not Charged) MUNG BEAN SPROUTS
3-TRIALS COMBINED (n=600)**



**Controls
Average of ~150mm length**

Figure 11: Histograms of Orgone-Charged versus Control Mung Bean growths, from a 3-year study. (DeMeo 2002b)

has also elaborated on Reich's concepts of health and bioenergy, while DeMeo and Senf (1997) edited a volume of experimental papers by various authors supporting Reich's findings.

There also are two interesting studies on the relationship between Reich's orgone energy to the *acupuncture energy* of Chinese medicine. Senf (1979) made a study where acupuncture meridians were stimulated by a small *orgone acupuncture* device, consisting of a hollow steel tube of 1 cm diameter with multiple capacitor-type exterior wrappings of thin steel mesh and dielectric insulating plastic. One open end of the tube was aimed at the acupuncture points of test subjects, who reacted to this acupuncture tube (which did not even touch the skin) in a manner identical to, but frequently stronger than the kind of reaction they would normally have with regular acupuncture-needle treatment. A similar orgone-acupuncture device was constructed and subjected to controlled evaluations by Southgate (2009), also with positive results. These experiments suggest orgone energy as concentrated out of the atmosphere in special narrow-tube accumulating structures, is one and the same as the Chi energy of Chinese medicine, able to stimulate its charge and movement along acupuncture meridians.

While clinical reports evaluating the accumulator were abundant during Reich's time (Web ref.1), the assault upon his research efforts by the FDA starting in 1947 – finally ending in government book-burning of his research journals and books, and his death in prison in 1957 (Greenfield 1974; Sharaf 1983) – basically suppressed open working with Reich's concepts within the medical profession. The major exception here is the growing number of body-oriented psychotherapists employing the emotion-release methods which Reich pioneered (Web

ref.4). As an effort to avoid prosecutions by mainstream medicine and the increasingly-powerful Food and Drug Administration (DeMeo 1993a) there is an "underground" movement to apply the orgone accumulator by physicians, and for self-treatment by laypersons – but it reminds one of something comparable to the Dark Age period when physicians who wanted to learn anatomy had to steal corpses from graveyards in the dead of night. For such reasons, the first major book on the orgone accumulator as a healing tool, to appear in the English language since Reich's death was authored in 1989 by myself (DeMeo 2010) a non-physician who does not offer treatments to patients, and therefore is immune from the long reach of medical orthodoxy.

Replications of Reich's Findings II: The Water-Grounded Cloudbuster Antenna

Reich's specialized water-grounded weather-antenna, the cloudbuster device, was firstly announced in a 1952 publication (Reich 1952), following which, as detailed above, came a series of other papers on the subject. The apparatus is simple in design, and has no kind of electrical or electromagnetic inputs, nor does it use any chemicals – it is entirely passive, similar to a lightning rod, except that it must be grounded into



Figure 12: Cloudbuster Antenna used by the author in field trials in the Kansas, American South-east and Southwest experiments described here.

a large body of clear, flowing or moving, and life-supporting water, similar to what is suggested in our blue luminating-fluorescing samples with a higher charge-density. The charge-density factor in the atmosphere which Reich termed the orgone, can then be influenced, by the antenna, which is grounded in the highly-charged water. Maglione (2007) has provided the most comprehensive single overview of research in this field, including Reich's original field research papers, plus the major findings of Baker, Blasband, DeMeo, Eden, and Kelly. All of these scientists undertook considerable field experiments to evaluate the new methods, and did in fact provide significant empirical support to Reich's claim that the device actually worked. Below I will limit the discussion to my own primary field experiments.

DeMeo's Field Experiments in the USA

My own experimental field evaluations of the cloudbuster have yielded significant positive results in support of Reich. A 1979 study of the cloudbuster conducted as part of my graduate work at the University of Kansas, showed significant atmospheric reactions, with increases in percent cloud cover and measured rainfall over the entire State of Kansas, using official National Weather Service (NWS) rainfall data in the analysis (DeMeo 1979a). Figure 12 shows the cloudbuster apparatus I constructed for these Kansas field trials. Figure 13 reproduces one of the major graphics from that study, indicating the development of greater cloud-growth and increased precipitation starting within about an hour, on average, shortly after the cloudbuster antenna was put into operation.

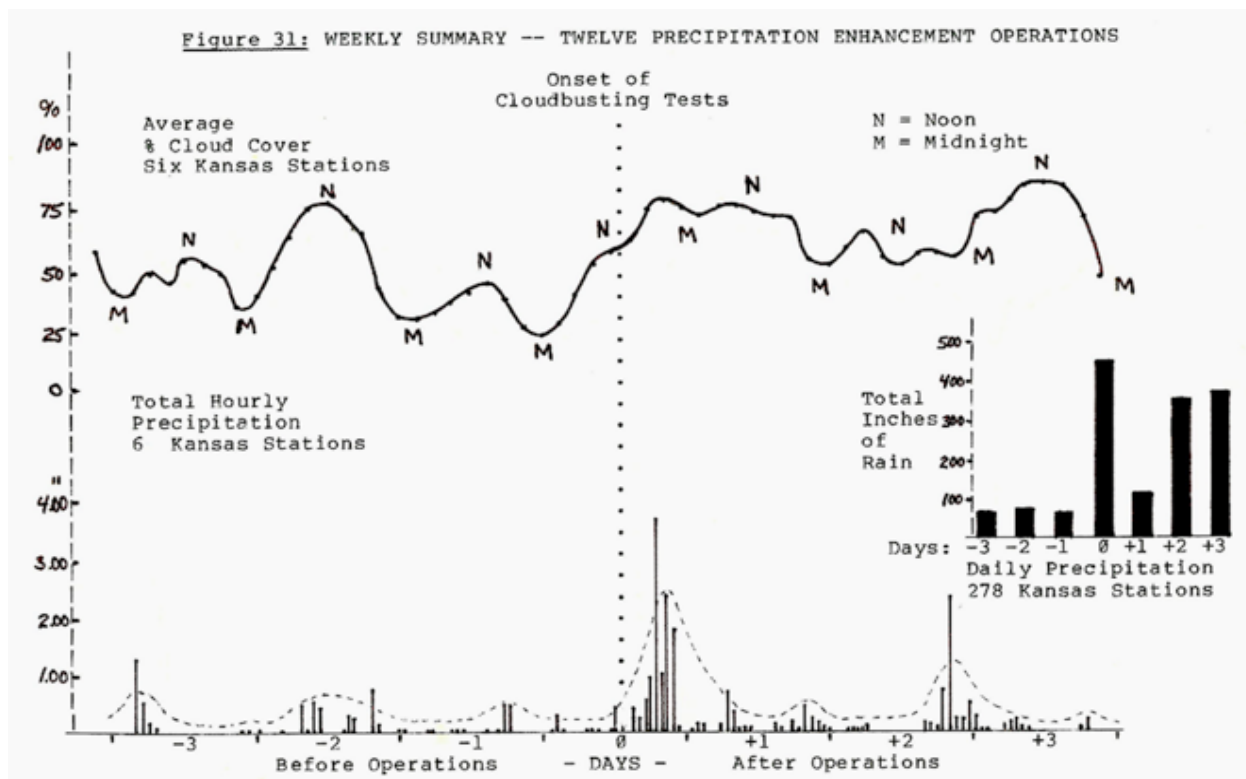


Figure 13: Effects from 12 Cloudbuster Tests on the Weather over the State of Kansas. Upper and lower graphics are percent cloud cover and hourly precipitation from six Kansas stations. Inset graph is daily precipitation from 278 Kansas stations. (DeMeo 1979a)

In 1986, I led a team using two cloudbuster antennas into the American Southeast, Georgia and South Carolina specifically, ending a two-year drought of historical proportions with only about a week of work (DeMeo and Morris 1987a, 1987b). Rains developed over the entire southeast, showing a clear persistence effect reflecting, by Reich's earlier observations, a return towards *atmospheric pulsation and self-regulation*, a recurring cycle of rain and dry episodes each lasting several days.

In 1989, a more ambitious and significant desert-greening field trial was undertaken in the arid American Southwest, involving five separate pre-announced field trials. Each experiment would last a few days, once per month from May through September. Evaluations of results – as always – were made from official NWS data sources. A precipitation analysis for the five separate operations of 1989, given in Figure 14, showed an average rainfall doubling effect for a full week-long period, starting within

48 hours of our field operations (DeMeo 1991). It was an amazing positive result in support of Reich, but “official” reactions were disbelieving and regrettably obstructionist.

Field Experiments in Israel and Namibia

The Arizona experiments did become known through my lectures and publications, however, eventually attracting the interest of private parties overseas who lived in desert or droughty environments, and for whom the theories of meteorology meant less than practical results. My work was then sponsored by a private foundation and the government of Israel over the Winter of 1991-92, towards ending of a major three year drought which had left most of their reservoirs nearly empty and dry. A ten-day operation with the cloudbuster antenna triggered a restoration of atmospheric pulsation and rains (“opened the storm doors” by the weatherman’s account) which

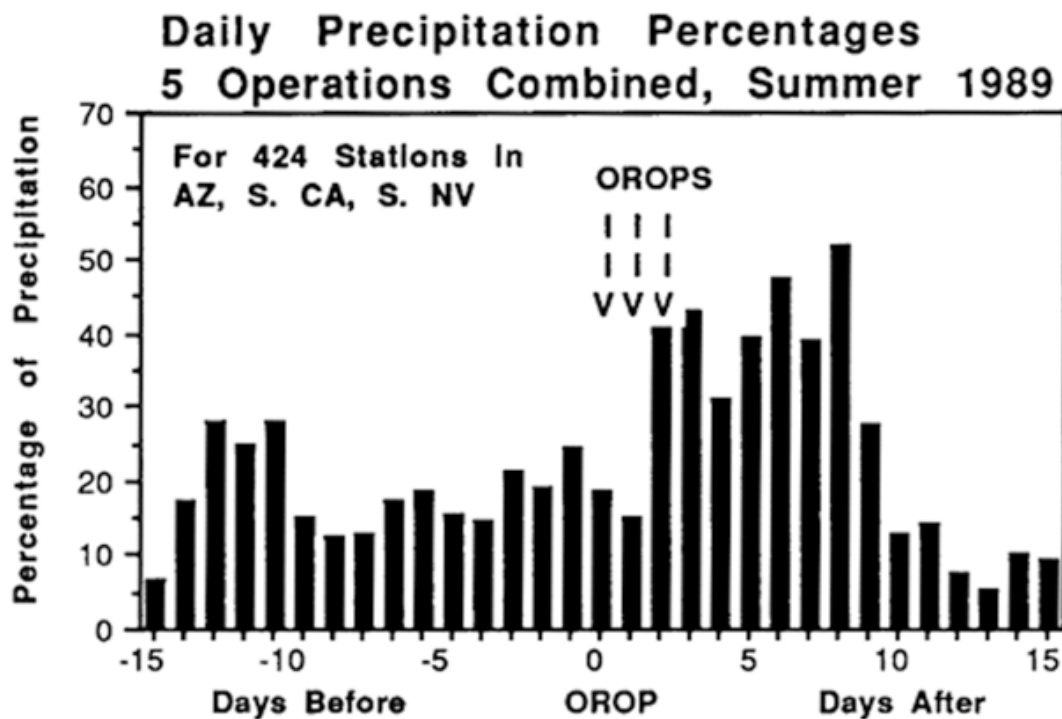


Figure 14: Averaged Daily Precipitation Percentages for the five 1989 American Southwest Cloudbusting Operations Combined. Starting shortly after the onset of the field operations (arrows starting at day zero) a significant increase in precipitation begins about 48 hours later, persisting for approximately one week thereafter – a rainfall-doubling effect. (DeMeo 1991)

persisted throughout that entire rainy season, and broke all historical rainfall records (DeMeo 1993b). A year later, the government of Namibia sponsored field operations towards ending of a 12-year drought, which had become critical over the prior 3 years, leading to a dramatic exhaustion of water resources and wildlife over the whole of Southern Africa. Over a two week period, the operations undertaken by the team I directed, using one large cloudbuster antenna, turned the situation around, with copious and continuing rains which recovered the entire southern part of Africa (DeMeo 1993c) and persisted over many months.

In both the above cases, of Israel and Namibia, not only was the drought ended for the several-months period immediately after our work, but the subsequent rainy seasons were excellent, without a return of drought for around three years. These results supported Reich not only on the effects of the cloudbuster, but also his points

about how the device could *restore the lost property of atmospheric pulsation*.

Field Experiments in Eritrea: A 5-Year Project

Word of the good results from the Israel and Namibia experiments spread, even while the findings found publication only within lesser-known journals, and with a few of my presentations at scholarly societies. The government of Eritrea, in the Horn of Africa, learned of these experiments, and expressed an interest towards using the method to end their long-term drought situation. For nearly 30 years, they had suffered under below-normal rains, compounded by open war with neighboring Ethiopia. Reservoirs were exceedingly low, and the landscape was barren, from both drought and social turmoil. I proposed and they agreed to a five-year test project, starting in summer of 1994 (DeMeo 2002c). Over the next five years, my international team of dedi-

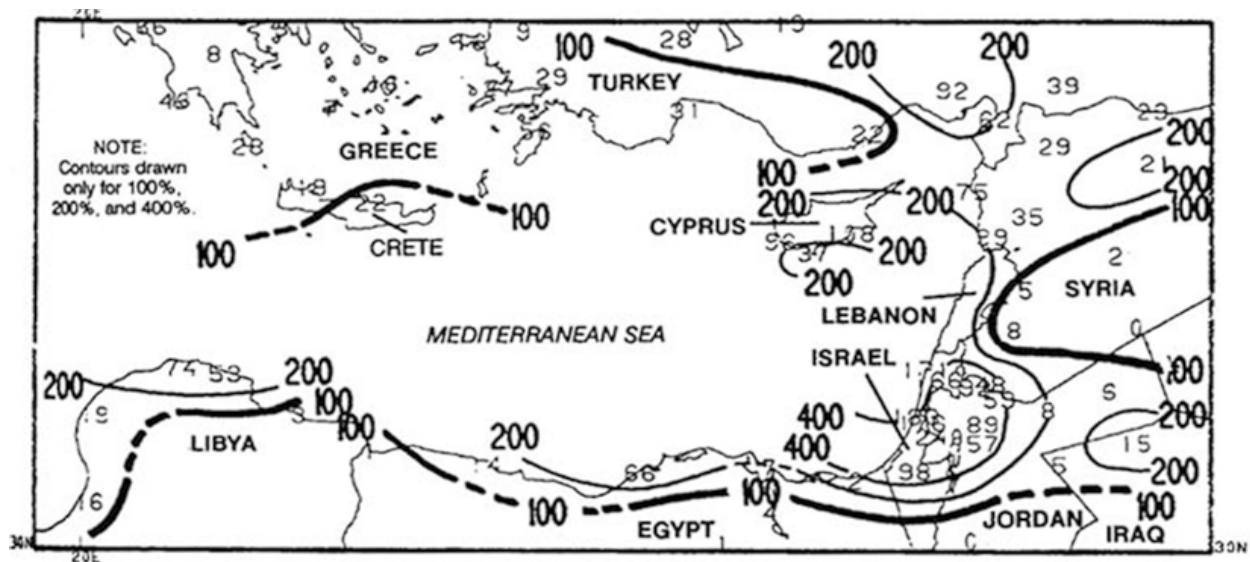


Figure 15: Israel Cloudbusting Operation, Early Results: Percentage of Normal Precipitation Map, Eastern Mediterranean, Nov. 27 to Dec. 7, 1991. Isolines showing rainfall contours for the first major storm to enter Israel in many years. This exceptionally heavy rainfall episode began only 10 days after cloudbusting operations were initiated, and only three days after those operations ended. The storm which brought these rains had developed in the western and central Mediterranean during the cloudbusting operations. It slowly moved eastward, intensifying as it approached the coast of Israel. Six additional episodes of moderate-to-heavy rainfall sequentially entered Israel after this storm, from mid-December through March of 1992, breaking all their historical rainfall records. (DeMeo 1993b)

cated professionals undertook operations over several weeks of each Eritrean summer, with the goals to insure no return of drought, and boost their rainfall.

And in fact, as seen in Figure 16, official weather data from the Eritrean Civil Aviation department indicated a statistically-significant ($p < 0.0042$) boost in rainfall across their entire network of measuring stations, of around 50% for the 15-day periods after our operations commenced, as compared to the 15-day periods before operations. The only exception was in 1996, when operations did not occur, and rainfalls were scanty as compared to the other years when we worked. The first year of work, 1994, saw a very large regional result which produced the first above-normal rainfall across adjacent regions of the Sahel in about 30 years. Rains of 1995, 1997, 1998 and 1999 were all excellent and at or above normal, with a particularly large increase in rains for 1998, when three separate cloud-buster antenna were put into operation in a coordinated manner. Forecasts over the period were typically for more dry weather,

given the growing El Niño condition which peaked out in 1998. However, excellent rains developed for every year we operated. Food imports declined significantly. Given the harsher conditions adjacent to the Sahara Desert, this result, which affected not merely Eritrea but large parts of Ethiopia and Sudan, was even more amazing than the rainfall doubling as observed following the American Southwest operations in 1989.

It was later determined, the most intensive period of operations in 1998 when three large cloudbuster antenna were put into operations, was the time of a greatly increased rainfall over most of the Nile River Basin. This dramatically increased the flow of the Nile River, and filled Lake Nasser behind the Aswan Dam for the first time since its construction in 1968. Moreover, Lake Nasser had *filled to overflowing*, allowing a diversion of tremendous quantities of water out through its overflow spillways into the open Sahara Desert.

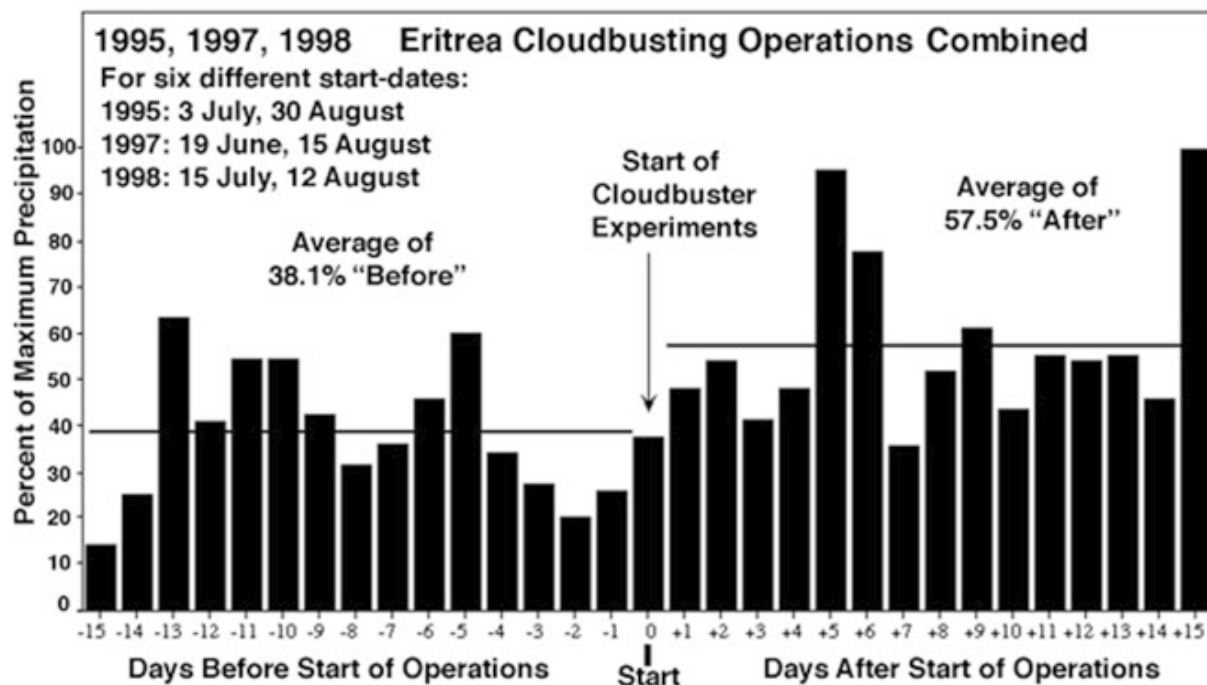


Figure 16: Daily Precipitation Percentages for 15 days before and after the start of six different Phases of cloudbusting operations in Eritrea. The percent-of-maximum rainfall during the “after” period constitutes >150% of the percent-of-maximum during the “before” period, for a statistically-significant ($p < 0.0042$) net increase of ~50%. (DeMeo 2002c)

The result of this massive increase in rains was five giant new overflow lakes in the open Sahara about 200 km to the West Southwest of Aswan, as seen in Figure 17. These giant lakes were so large that one could not see across them, and they readily appeared in satellite images. Even today they can be seen via internet, using Google Earth (Web ref.5). Unfortunately, these lakes have been rapidly drying out ever since their formation, as the Nile River Basin has not received additional rains of similar or sufficient magnitude to re-fill Lake Nasser to the point of overflowing, such that new waters could again be diverted into them (DeMeo 2002c).

Unusual External Environmental Factors

The various results noted above, nearly all of which fall outside the boundaries of conventional expectations or thinking, have parallels in research findings quite independent from Reich and his circle of associates. While the published literature on these independent findings is so extensive I could not hope to even summarize it here, there



Figure 17: Satellite image of the Nile River around Lake Nasser and Aswan High Dam, 10 Oct. 2000. The exceptional rainfalls in the Nile River Basin after c.1994 slowly filled Lake Nasser to capacity, for the first time in its 35-year history. The excess waters were diverted into the Toshka Depression, out in the open Sahara Desert, where four giant overflow lakes were created. (From the MODIS imaging spectroradiometer, NASA.) (Web ref.5)

are two annotated bibliographies which can be referenced (Burns 1994, 1997). The CIFA organization (*Comite International de Recherche et d'Etude de Facteurs de l'Ambiance*) also web-posts materials from European and Russian researchers (Web ref.6). Nearly all of the scholars cited in these bibliographies have identified *fluctuating cyclical patterns* in the behavior of their experiments, reminiscent of Reich's discussions on self-sustaining pulsatory life-energy functions, which show cosmic-sidereal components that independently validate much of what has already been given above. It should be noted, these natural scientists go well beyond mere correlation analysis, and like Reich are presenting experimental results suggestive of the actual *mechanism* and driving force behind these correlations. A very limited review follows.

The Chemical Tests of Giorgio Piccardi

In the 1960s, biochemist Giorgio Piccardi discovered a cosmic, physico-chemical fluctuating phenomenon at work in physical chemistry experiments, especially as regarding phase-change chemistry, all of which revealed cyclical patterns tied to cosmic variables. His findings mirror those of Reich in all but the terms being used, though we have no record that Reich and Piccardi even knew about each other. Piccardi experimentally investigated the larger issue of water-structuring, especially as related to variations in the precipitation rate of standardized preparations of bismuth oxychloride, and regarding the freezing rates of super-cooled water (Piccardi 1962, 1965, 1966, 1968; Piccardi and Cael-Boute 1972). In prefacing his findings, Piccardi routinely noted various industrial processes and chemical experiments which showed anomalous reactions to solar variations and weather changes. He gave a listing of chemical solutions which have proven reactive to unknown subtle energetic param-

eters of the environment – beyond merely mechanical thermal, humidity or barometric indications. Colloidal arsenic trisulphide solutions, calcium phosphate precipitates, polyvinyl pyrrolidone solutions, sodium thiosulphate titrations, the sineresis (water separation) of agar gels, and freezing of super-cool water, all show variations in rates or quantities fluctuating according to external sidereal, solar, lunar and/or meteorological factors (Piccardi 1962).

The *Piccardi effect*, in agreement with Reich's empirical findings on the orgone energy, was more active or powerful at higher altitudes, and possessing of significant solar-terrestrial, biological and meteorological components. The effect was also reflectable by metal shields, and could be amplified within metallic enclosures. In particular, Piccardi's findings showed variations in the freezing of super-cooled water tied to sunspot variations, which helped to understand the mechanism of solar variation upon weather. Piccardi noted clear seasonal-sidereal patterns in the variability of his chemical tests, patterns which matched in both Northern and Southern Hemisphere, and thereby could not be explained by the usual solar-seasonal influences. He argued that space itself was charged with a "something" that could affect the properties of water, and he specifically noted certain times of year when by astrophysical determinations, the Earth would be racing through this background medium of space at higher speeds. Those periods, notably from March through June, yielded up the strongest reactions in his chemical tests, while the period of November through February – when the Earth was moving at a very slow speed in the background of space – showed the lowest rates of chemical reactions. Figure 18 presents a photograph of a model Piccardi constructed (Piccardi 1962) and as I will shortly demonstrate, it is in full

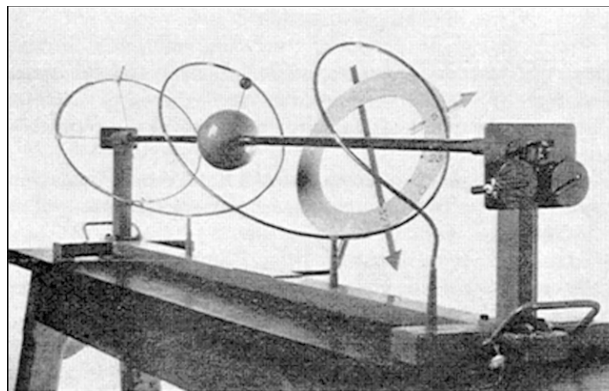


Figure 18: *Piccardi's apparatus showing the heliocoidal motion of the Earth around the Sun, and the variable speeding-up and slowing-down of the Earth's velocity over the course of the year (Piccardi 1962).*

agreement with Reich's cosmic superimposition theory (DeMeo 1951c).

Piccardi's experiments also made full use of special water-structuring device known as a *scale-buoy*. This device consists of a blob of mercury enclosed within a glass bulb, with a partial evacuation of the atmosphere – several examples are shown in Figure 19. When shaken, this bulb will show a subtle blue-green flash of light. According to a literature review assembled by Faigl (1990) the scale-buoy will emit radiofrequencies in the 6-9 Mhz range, with an attendant crumbling erosion of scales. They were used commercially in the first half of the 20th Century to inhibit the formation of boiler scale, or to keep minerals in suspension within water, whose solvent properties were changed by the influences of the scale-buoy. When water is activated by being exposed to the frequency emission discharges of the agitated scale-buoy, it becomes especially "reactive" to external factors as with sunspots and the like. Why this should be so is not yet understood, and certainly requires a concerted experimental effort towards clarification – but the "activation" principle does suggest something along the lines of the myriad effects observed from the orgone accumulator – which via its increased en-

ergy charge-density can affect the UV spectral absorption of water, and also charge up plants to greater growth, inhibit tumor development in mice, and affect the ionization parameters inside high-vacuum tubes and GM counters. In both cases, of Piccardi's scale-buoy and Reich orgone accumulators, the affected object or substance gets a "boost" of some sort which affects a significant change in its basic properties.

Even before Piccardi, Bortels (1956, 1965) maintained the issue of water reactivity was central to the matter of sunspot-weather reactions, and he speculated about the existence of a specific *weather-radiation*, which got close to the ideas of Reich, though he never identified just what kind of radiation was involved. In later years, this same line of thinking re-appears in the work of Baumer, whose work *Sferics: Die Entdeckung der Wetterstrahlung* (Baumer 1987) went so far as to declare the sferics frequencies, between 500 to 50,000 cycles, was the answer to the puzzle. However, his case failed in that no experiments were ever put forward subjecting water or other solutions to artificially-generated frequencies in those sferics ranges. Nobody showed that one could affect clouds or weather by artificial application of sferics frequencies, to my knowledge, and Reich's weather device uses no such transmitting equipment. In this regard, the work of Reich with the orgone ac-



Figure 19: Early Scale-Buoy Devices, as used for boiler de-scaling and several of the Piccardi experiments (Piccardi 1962; Faigl 1990)

cumulator and cloudbuster, while certainly far less orthodox than Baumer's postulate, nonetheless has more experimental proofs to support its foundational claims and theory. Sferics frequencies had been studied in the USA during the 1960s, as a potential method for severe weather forecasting (Church 1993) but the subject was largely abandoned by the early 1970s.

Biological effects of such cosmic fluctuating phenomenon also were identified before Piccardi, in the 1940s work of Takata (1951; Shul'ts 1967) who discovered variations in the flaking numbers of human blood serum, as identified in different laboratories around the world, and correlated to sunspots traversing over the central meridian of the Sun. Related breakthrough studies as those by the clinician William Petersen on *The Patient and the Weather* (1934), or his *Man, Weather, Sun* (1947) provided solid evidence of a powerful biological reactivity to cosmic and meteorological environmental variables such as sunspots and flares, lunar cycles, and nearby thunderstorms or weather fronts. Today, the *Piccardi Group* which once was an integral part of the *International Society for Biometeorology*, is no more. For some years, the *Journal of Interdisciplinary Cycle Research* presented research findings on the subject, but this line of research is today primarily being advanced by scientists working within the European CIFA organization which holds conferences and acts as a common meeting ground for investigations following this line of research (Web ref.6).

Another quite independent line of investigation previously mentioned is represented in the work by Gerald Pollack (2001), regarding the exclusion-zone phenomenon along cellular membranes and gels. Several international conferences devoted to the unusual properties of water have been held (Web ref.7) reporting on diverse phenom-

ena frequently similar to those reported by Piccardi and associates.

Frank Brown and External Biological Clocks

Like Reich and Piccardi, biologist Frank Brown independently identified experimentally an unshieldable cosmic *solar-lunar* and *galactic-sidereal* phenomenon capable of affecting the behavior and metabolism of many living creatures (Brown et al. 1970; Brown 1976). Tidal forces of lunar periodicity could be transmitted through building roofs and walls into the indoor aquaria of his laboratory, for one example, where isolated creatures kept under constant temperature, light, humidity and even pressure conditions nevertheless followed the rhythms of lunar or sidereal-day cycles. For example, oysters kept in a controlled-environment aquarium at Brown's laboratory in Wood's Hole, Massachusetts would open and close according to the local lunar-tidal variations at the nearby shoreline, but not according to simple solar circadian day-night variations. When transported to a similar controlled laboratory environment near Chicago, the opening and closing of the oysters re-set to the lunar "tidal force" at the new location and longitude, even though there was no ocean in Chicago to yield up a "tide". Likewise, bean seedling water uptake experiments undertaken over many years showed decidedly clear lunar-cycle reactions – taking up more water during new and full-moon periods – but also showing sidereal-day variations in keeping with larger though more subtle galactic-sidereal variations. Brown showed similar lunar reactions in the behavior of crabs and various mammals (Brown et al. 1970; Brown 1976). None of this could be understood in conventional terms.

Considered to be the world authority on the external biological clock mechanism, this

line of research was never refuted, but basically vanished from study and discussion, and withered on the vine after Brown's retirement and death. Today, nearly all studies on the biological clock speak about unproven but assumed internal DNA "molecular oscillators" as the driving force, and the issues of lunar or sidereal periodicities, which imply unusual new forces in nature, are hardly ever mentioned. One exception is the incorporation of Brown's findings by John Alden Knight, a naturalist who independently discovered a lunar periodicity in wild animal activity (Knight 1975) and whose advice on the best times for hunting and fishing has many enthusiastic supporters.

Bioelectrical Signatures with a Cosmic Component

During the 20th Century, physicians such as Harold Burr (1971) and Bjorn Nordenstrom (1983) argued for a specific *electrodynamic* energy in the body, which they measured independently via bioelectricity and other parameters, decades apart and on different continents. This electro-dynamic energy showed great similarities to the phenomenon worked with independently by Reich, Piccardi and Brown, as well as to discoveries within clinical fields of energy-medicine, such as the *homeopathic energy* phenomenon which grew out of European folk-medicine, and *acupuncture energy* of Chinese medicine. Burr identified bioelectric fields in the millivolt range surrounding seedlings, embryos, nerve fibers, and other biological tissues. He determined there was a strong charge present during growth and healing, as well as identifiable patterns in states of organic illness and degeneration. He also made long-term studies of the variable bioelectric potentials of trees, showing clear correlations to lunar and sunspot cycles. From this he concluded the existence of an *electrodynamical field*, which orches-

trated simultaneous increases or decreases in the net electrical charge of all objects and creatures within a given geographical vicinity and longitude (Burr 1971). Variations in the local electrodynamic field, he argued, gave rise to cyclical variations within both the living and non-living worlds. And these variations were predominantly correlated with lunar-tidal or sunspot cycles, in addition to having a solar day/night variations, and meteorological reactions.

Nordenstrom's work as director of the *Karolinska Radiological Institute* in Copenhagen led him to study the phenomenon of bioelectricity as it relates to the x-ray "ghost" or *phantom* effect, which is an unusual fogging of x-ray films showing either fuzzy blotches or lightning-bolt patterns, in addition to the expected images of bone and tissue. I have already noted how Reich made such x-ray photos of the orgone field of human hands showing an apparently similar anomalous fogging or "ghost-like" effect (Reich 1949c). However, Reich's photos revealed the phenomenon to exist in the open atmosphere between the hands, several inches distant from the tissues.

I have seen this kind of "ghost" pattern as Reich described and photographed, in the older c.1970s type of x-ray machine used for screening of airline carry-on bags. These older machines were constantly turned on such that one could view the bags as they moved slowly under the x-ray beam on a conveyor belt. In these cases, the phenomenon would appear as a kind of darker-colored swirling "smoke" that would wisp in and out of view in the x-ray fluorescent screen. On x-ray film plates, this phenomenon may sometimes appear as Reich recorded it, as a kind of smoke, or it may appear as a fuzzy blob, or like branching tree-limbs or plasma filaments as seen in the various toy *plasma-ball* devices. Sweeney (1983) has published a "swamp static" image of

a similar anomaly. It is considered an annoyance by most radiologists, something to avoid. Others such as Dumitrescu and Kenyon (1983) have expanded upon how these phenomenon can be useful for medical diagnosis, and to be made even more visible and apparent, without the use of x-rays and following more closely along the track of Burr. Korotkov has also progressed along this path, in the development of new electrographic imaging devices for small body surfaces such a fingertips, or for determining the energy-field charge of blood or liquid samples (Korotkov 2002).

Nordenstrom also included this phenomenon into his studies, and found it had correlated bioelectrical components. His studies led to the conclusion there was a larger bioenergetic force at work in the body, one which moved along the acupuncture meridians, which affected water-structure and colloidal chemistry within and between cells, and was a determinant of health and healing. The subtitle of his book declared it explicitly: *Clinical, Experimental and Theoretical Evidence for an Additional Circulatory System* (Nordenstrom 1983) – but a system circulating of what, exactly?

Some may argue, solutions to such mysteries might be found in purely electromagnetic mechanisms, (Presman 1970) or by reference to biophotons, as documented by Popp and associates (Popp and Belousov 2010; MaeWan et al. 1974). These kinds of experiments carry good evidence for the basic existence of an anomalous emission of light and other frequencies from both individual cells and the whole body. However, they also stretch considerably our understanding of both photons and electromagnetic waves, which were postulated over 200 years ago, and were never intended to explain the correlated variations between such diverse biological and chemical phenomena, much less the larger solar, lunar

or meteorological events. Becker made a cogent review and analysis of similar phenomena in his popular work *The Body Electric* (Becker and Selden 1985) where it was openly asked, “*What is an electron?*” In doing so, he came around to the larger questions Reich had originally raised with his orgone energy, and Burr had raised in proposing his electrodynamic field theory, and which Piccardi, Brown, Nordenstrom and others likewise raised. Everyone’s physiology and behavior is affected or even driven by these energetic forces in daily life, and we see the effects in both industrial and organic chemistry. Even our blood shows clear reactions, as with the bioelectric field *zeta-potentials* of red blood cells, which is a prime health determinant (Bauer 1987). Reich’s own blood testing method relied upon a similar parameter of the red blood cell’s energy field (Raphael and MacDonald 1952) and his development of an orgone or life-energy field meter (Reich 1948c) still suggests the world of electronic imaging has much to learn from him in this regard. Raw electrons, photons, or electromagnetic waves or particles seem rather inadequate for understanding such things, which at their fundament require action-at-a-distance reactivity to connect living creatures and raw chemistry into the full fabric of cosmic activity.

While the physicists generally feel they have good answers about basic particles such as electrons and photons, after reviewing the living aspects of these phenomena, such as bioelectricity, x-ray phantoms, the blue fluorescence and such, can we really say the *basic essence* of such a thing is truly known? There’s more along this line of critical thinking.

Lessons from Homeopathy and Acupuncture

The whole field of homeopathic medicine as

developed by Hahnemann and still in widespread use today further leads us to view water as a special substance, one which has the ability to carry both charge and information content, even if the term “information” is still not yet scientifically understood. When water has a toxin placed into it, and is then *succussed*, or strongly shaken such as to impart myriad vortex motions within its volume, it develops a “reactive” physical chemistry, similar to the water-activation which resulted from Piccardi’s use of the scale-buoy device. This shaken vortex-water, we may postulate, acquires properties much like a primitive “immune system”. The activated water literally reacts to whatever minute irritating or toxic chemicals are put into it. The water is not “alive” per se, but either the water, or some life-energetic constituent within the water appears to react much like raw protoplasm to the presence of irritants. And that reaction cannot be diluted out. The reactive principle then persists even when the toxic component is diluted down well below Avogadro’s Number, indicating that not even one molecule of it ought to be remaining.

The experiments of biologist Jacque Benveniste (Davenas et al. 1988) are notable among those who have investigated and supported the *memory of water effect*, as shown in cellular reactions to a water sample into which an antigen has been mixed, but then homeopathically diluted out of existence within that sample. In spite of the alarming hysterical reactions his work provoked within the editorial board at *Nature*, experiments such as these have proven the existence of a *life-like reactive energetic chemistry* in water, even when no “chemistry” per se was present. Clearly this requires something other than conventional wisdom to explain, and I do believe the introduction of Reich’s findings on the orgone energy will aid in this understanding.

Here, I would argue the same life-energy functions are at work in both the human immune system and in homeopathic “activated water” preparations. And, in all likelihood, this is derived from a more common set of energetic principles pre-existing life, something which exists in water all by itself, and which can later be subsequently found in the living creatures made predominantly from water. Homeopathy produces a decidedly non-chemical reaction in the living system. It is suggestive of the very same kind of “transmission of qualities” affecting phase-changes one finds in the Piccardi activated water chemical tests, which show reactions within water solutions to sunspots and solar flares, even while the energy variations as they come to us from 93 million miles distance, are so miniscule as to have lost the capacity to affect chemical bonds or molecular rotational structures. Looking for a chemical-molecular mechanism therefore would appear fruitless. And yet, the effects are real enough. We must look outside of classical physical chemistry for the mechanism. They demand some kind of non-chemical matrix or energetic substrate by which water structuring is accomplished, something which resides *within the water*, or something that *comes into the water* in variable quantities or with qualitative differences, but which is not merely the raw water molecules, nor any simple conglomeration of them.

We may also favorably compare European homeopathy to Chinese acupuncture in this regard, that both have a good record of successful applications, even while both have central questions waiting to be answered in terms of their exact physical mechanisms. But traditional Chinese medicine also includes the concept of a bio-energy, called *Chi* or *Qi*, and I have given above several examples of clinical acupuncture experiments suggesting the orgone accumulator effect, when properly channeled into tiny

conduits, can even without physical contact trigger reactions in people identical to acupuncture needles inserted at the same points. This implies not only that the orgone energy of Reich is agreeable with core aspects of the Chinese system of acupuncture, but also that they are both eliciting their biological effects via mechanisms which work at a deeper level than biochemistry.

Viktor Schauberger and the Living Water Postulate

Intuitive naturalist Viktor Schauberger (Schauberger 1998; Coates 2002) argued for a specific quality of alive or *living water*, and made practical applications of this in European forestry and hydrology during the first half of the 20th Century. Schauberger argued that water’s natural motion was a vortex curve or spiral, and that certain physical properties and life-giving qualities of water could be enhanced or diminished based only upon the form of its movement. He applied this principle in Austrian forests, finding he could float larger logs down a given plume-works merely by causing the water to flow in a spiral-wave motion. This principle, so he argued, changed the structure and density of the water allowing an increase in its buoyancy. He applied this principle also to restore the meandering within streams which had previously been “straightened out” by ditching or canalization, to restore water quality and oxygenation which thereafter benefited fish and other wildlife. The spiral motion of streams, he argued, increased the density and capacity of water to move its sediment load, and this also re-invigorated the water with oxygen and other life-giving qualities. Spiral motion could also speed the motion of water through pipes, he argued, as compared to straight-line flow. While lacking in formal education, and somewhat mystical in terminology, Schauberger independently developed methods which could significantly

change the properties of water in large volumes, as they flowed in natural streams.

Healing Mineral Water Hot Springs and Natural Lakes

In a related theme, virtually all of ancient history is peppered with references to natural mineral hot-springs as places of healing and recuperation, and the waters in such special places were typically revered and considered quite special. (DeMeo 2010c). The Romans, Britons and others built large spas around them, to contain and gather up the waters into deeper pools. Cities and towns across Europe were frequently located at these special places. Lourdes in France is one such well-known mineral hot-springs, and for which many observations of near-miracle cures have been claimed. Typically, such waters have a bluish glow, a point which may hold significance for their healing possibilities, beyond the mere presence of high oxygenation. While some unknown part of the healing effects of such “holy waters” could be a purely psychosomatic effect, they appear sufficiently well-documented to be applied clinically in many places today.

In modern-day Europe, the tradition of building health-recuperation spas at natural mineral hot springs is most widely developed. There are hundreds of such well-established healing baths in Germany alone, called *Heilbäder*, with physicians in attendance to help people who have come to find a nature-cure, all under auspices of the official health-care system. German physicians may actually prescribe a visit to such a hot springs mineral water health resort, and have it paid for by the German health-care system. There are multiple recognized categories of healing baths: the *Mineralheilbad*, the *Moorheilbad*, the *Seeheilbad*, the *Soleheilbad*, and those for *Radon-Balneologie* – the application of natural radon

gas as found in the waters (DeMeo 2010c). This latter application of radon-gas waters for healing constitutes a kind of “homeopathic dose” of natural radiation, possibly through the effects of *hormesis* as identified by classical radiation biophysics, which has a whole-body stimulus. (Luckey 1991; Sanders 2009).

This tradition of the healing waters was also well-developed in the Americas, and used widely by Native Americans and early colonials alike. Unfortunately in the early 20th Century, the use of mineral hot-springs for health and healing was attacked by mainstream medicine via their allies in the US Food and Drug Administration, in what became a literal open warfare by organized allopathic medicine against natural healing methods. (Walker 1993; DeMeo 1993a). Health benefits were typically reported and advertised by these healing-water spas, notably for arthritis and rheumatism. Such waters were also frequently bottled up for drinking, with advertised health-benefits. President Franklin D. Roosevelt, for example, frequented the healing waters of Warm Springs, Georgia, which continues to be used as a therapeutic center for polio hydrotherapy. It survived, however, only because Roosevelt bought the place and created an institute to guarantee its survival. Today, most of these same mineral hot-springs still exist, but the old health spas build on them have frequently vanished. Some also are now located within National Parks, but their older emphasis as places of healing is rarely so openly advertised.

We may inquire with fresh eyes, just what is it that made these waters so special and healing in their qualities? The standard consideration of enriched minerals and hot water baths creating soothing relaxation certainly is at work. But is that all?

Reich argued that water could be charged

with blue-luminating orgone energy, and some plant-growth experiments also show water charged inside an orgone accumulator is sufficient to develop an increase in growth of plants (Espanca 1981-1986). As previously discussed, accumulator-charged water also has a greater UV absorption. The accumulator itself shows myriad anomalies including effects upon biology and electrical charge parameters. It's healing effects upon laboratory animals and people is very much like that of the blue-glowing mineral-springs, suggesting a similar energetic mechanism. The Schauberger theory of living waters similarly argued for special physical qualities in water due to natural motional components which then allowed its charging up or activation, with blue-glowing properties. Piccardi used the scale-buoy devices to activate water, which also produced a bluish discharge into the water to achieve that function. Lourdes, and many other mineral hot-spring healing waters are frequently described as *blue waters* or *blue-glowing* in nature. All of this leans towards support of Reich's larger theory of a physical *background cosmic medium* which, under conditions of excitation would glow blue, and could also charge up water.

Regarding this blue color, many of the blue luminating hot-springs are shallow, no more than a few meters in depth, and yet they have a decidedly strong blue luminosity in their central core depths. One can see this most profoundly in the Yellowstone Park *Morning Glory Pool* which is only a few meters across, and perhaps two meters at its deepest and most visible dark-blue core parts. Figure 21 is a photo I took of this remarkable pool in Summer 2000, using an ordinary film camera with Ektachrome slide film, ASA 400, and without any filters or subsequent digital enhancements. The National Park Service posted other even more deeply bluish-glowing images of this shallow hot water pool to their website (Web ref.8).

Mechanistic explanations are most frequently given for the blue-glowing waters of such mineral hot springs, such as they contain large numbers of thermophilic bacteria which are blue glowing by some photoluminescence phenomenon. But as noted above, these hot springs do not intrinsically glow blue at night, and nobody at Yellowstone, to my knowledge, has either witnessed or advocated the same kind of luminous bacterium as one sees in some oceans, where

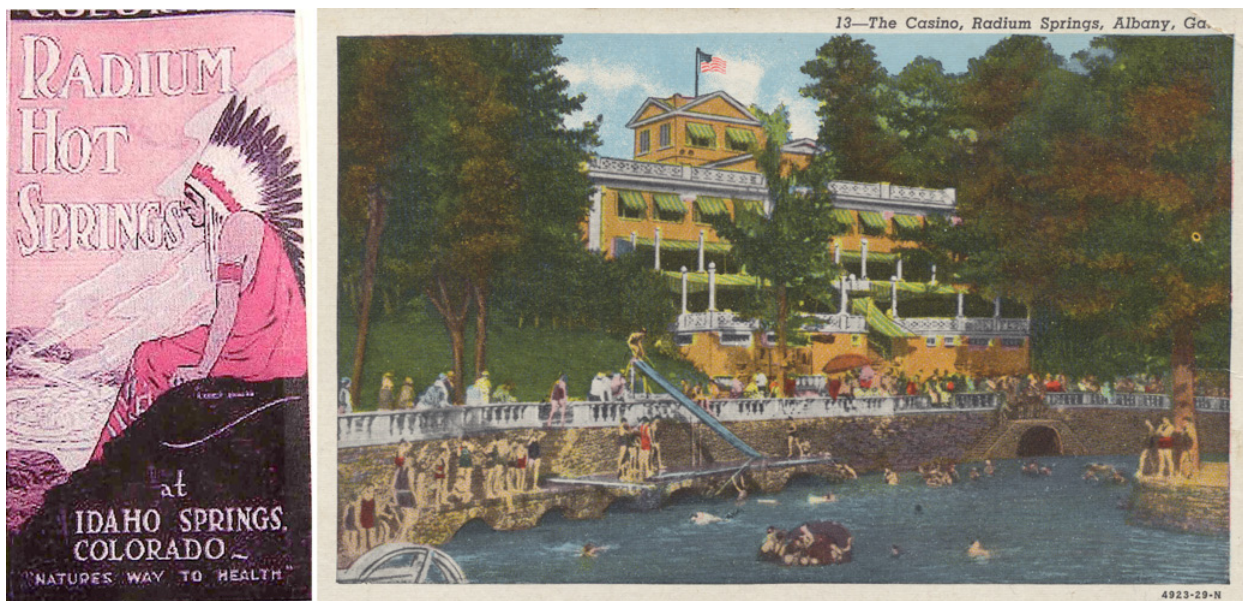


Figure 20: Typical Advertisements for Hormetic “Radium” Healing Water Hot Springs, c.1930.

mere agitation by swimming or surf will set them to glow. Also, should these waters be filled with microbes sufficiently abundant for their material bodies to give a bluish color to the water, then the same water should appear turbid blue, rather than as one sees: transparent and blue. The bluishness of the waters, therefore, appears more as something invisible which has come *into the water*, something which more strongly than usual subtracts out the reds and yellows, or something which has changed its physical structure or properties whereby natural direct or diffuse sunlight falling upon it creates a *blue fluorescence or luminosity* which can be seen, but which is not an expression of merely Rayleigh scattering, nor of any microbial abundance or “contaminant”. This “something” in the water also imparts healing qualities in many cases, as well as all the other factors previously discussed.

Other examples are found in shallow glacial melt-water pools of about the same depth, only a few meters, which also have a strong blue luminosity, something which also can be seen in hollow cavities within the glaciers or fresh mountain snow-falls (Web ref.13). Figures 22 and 23 show another example, of the exceptionally blue waters of the Crater Lake National Park in central Oregon. The photographs this time are from an ordinary 4 MP digital camera, without processing or enhancement. The color reproductions are exactly as they appear to the naked eye. One of the Crater Lake photos literally appears as if someone had poured an intense blue dye into the water – and yet, it is crystal clear in appearance, and very transparent.

As noted the water is not literally “glowing” blue in these cases, but instead generates a bluish *lumination* or even *fluorescence* under the stimulus of natural sunlight. Like Reich’s orgone-charged vacuum tubes which glowed with less electricity than normal, or as with my own which glowed only

with millivolts when hand-stroked, we may postulate that it takes less excitation to elicit the bluish luminosity within a very “alive”, activated or charged water sample, than in an ordinary uncharged and un-activated water sample, as we are more accustomed to seeing in so many polluted water sources. That is partly why these blue-glowing waters are so unusual, and stir us emotionally with their magnificent radiance, precisely because so much of the water around the world has lost this capacity to fluoresce or luminate, suffering a deterioration of its life-giving energetics.

At Crater Lake, the National Park Rangers are coached to tell people the “lake captures the blue color of the sky”, even when in many cases the sky is far less blue, or even grayish by comparison. A similar situation exists at Lake Tahoe in California, and I have seen this exceptionally blue luminosity in the Mediterranean sea of the Greek Islands. Taken together, these examples suggest we are observing a fluorescence-type of phenomenon which only occurs in waters of exceptionally high quality and structure, something which is separate from the wa-

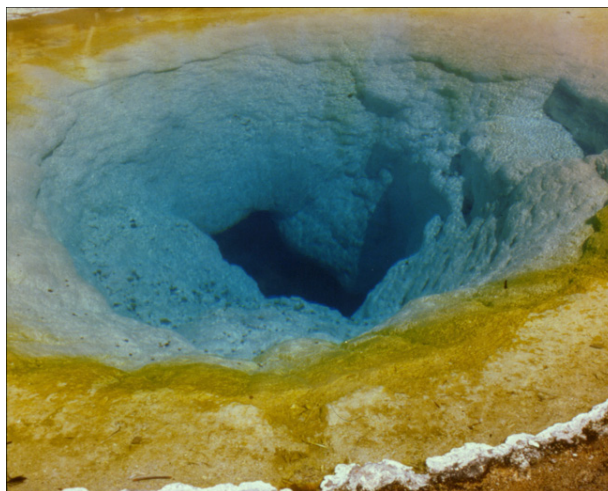


Figure 21: The “Morning Glory Pool” at Yellowstone Park. It is about six meters across and no more than two meters deep in the central core. The water has a distinct blue luminosity, easily photographed (at times when tourists have not dumped garbage into it). This appears as a property of the water itself, determined readily by walking around the pool and viewing at different angles.



Figures 22 (top) and 23: *Blue Glowing Waters of Crater Lake, Oregon.* Photographs made by the author in 2005, with a Kodak 4 MP digital camera and no filters or subsequent color adjustments. The images reproduce what you see with the eye.

ter, which *moves into* the water, charging it up. If sufficiently strong, the water then develops a highly structured form, with all the wonderful properties identified above, plus a very unusual *luminous fluorescence* in reaction to the full spectrum of solar excitation (which is diminished also with cloud-cover). Rayleigh light-scattering theory does not appear sufficient to explain the full range of effects.

Anomalous Blue Glowing Forest Atmospheres

This factor of *luminous fluorescence* as Reich observed and called *orgonotic lumination*, also has parallels in forestry. The

song *America The Beautiful* commemorates the “purple mountains majesty”, a phenomenon which Native Americans, explorers, naturalists and poets have noted for hundreds of years. I’ve seen it myself at different times during hikes in the Appalachian and Rocky Mountains. Professional nature photographers have made perhaps the most clear record of it, and with careful searching one can often find tourist postcards showing very impressive blue-glowing mountain atmospheres in natural forest regions. In Figure 24, I reproduce one of the most spectacular of these photos I’ve ever encountered, from a tourist promotional poster for northern Greece (Web ref.9). Through use of local translators, the photographer was contacted and informed us he had used Ektachrome slide film without any kind of filtering or post-development “tricks”. The photo reproduced precisely what he had seen with his eyes. I inquired further with local people, and was told this was a frequently observed phenomenon at that particular location, which at that time c.1995, was very isolated, unpolluted, and with the natural forests intact. One informant told me, when visiting that region with his family on vacation, that his grandmother (who was losing her memory and eyesight) came out of the hotel wearing her swimsuit, asking how she could walk up to that blue glowing area and go for a swim. She had mistaken the intense blue-glowing forest region for the blue ocean of the Mediterranean, which also has a similar intense blue color in many parts of Greece.

The intensity of this blue atmospheric luminosity might suggest some kind of smoke, fog or pollutant, but not one of my informants reacted well to that suggestion, saying this was a common phenomenon and one never smelled smoke at those times, nor suffered from obstructed visibility because of it. Like the blue-glowing waters of Yellowstone Morning Glory Pool, or Crater



Figure 24: Blue Glowing Forest Atmosphere in Northern Greece. (Web ref.9)

Lake, this intense blue atmosphere photographed in a remote mountain valley is exceptionally transparent and not due to an obscuring haze or aerosol, as one might expect with turpene particulates or fog water droplets. Sometimes one can see valley fogs which are semi-transparent and truly hazy, but in my experience they only yield a white or grayish color, without the intense blue luminosity as one sees here in Figure 24.

Another anecdote comes from park rangers in the Blue-Ridge Mountains during the 1980s, who made the observation that a powerful episode of forest-death hit the region one year after the bluish color vanished from their forest range. (DeMeo 1989b) This suggests, like in the healing hot springs waters, the subtle blue color of the forest range was intrinsic to the health of the trees. While the theory of turpene chemical emissions from healthy forests has limited merit, (Kozolowski and Pallardy 1997) and one can typically smell this in a healthy pine forest, I have grown increasingly skeptical of the idea that these chemicals alone create a claimed photochemical “smog-like” reaction supposedly necessary for luminous blue-atmosphere appearances. Some of the claims along these lines were extrapolated from observations near to wood-pulping mills, where large amounts of turpenes mixed with steam and other hydrocarbon pollutants discharged into the air. (Strömvall and Petersson 1993) Other more empirical mechanisms have been proposed such

as natural moisture transpiration or even the electrical fields at the tips of pine needles, which by itself may produce a blue glow visible at night. (Fish 1972) In any case, it would appear virtually all the various orthodox theories fail to fully explain this particular Greek mountain photograph, and it is not the only one of its kind. I have photos of other luminous blue atmospheres from forests where there are no pines, or where the glowing component is isolated to above the tree-line, characterized by rock and snowpack. These most intense examples suggest a very real anomaly, and scientific understandings are not advanced if every time such a thing is observed or photographed, it is immediately dismissed *ad hoc*, by reference to more agreeable mechanistic theories which have little or no worked-through empirical evidence for their own support. These blue anomalies are real – they should be studied *in vivo*.

Admiral Fitzroy’s Stormglass

On the issue of an environmental phenomenon which can activate water, to energize it and increase its structural properties, we may also cite known and proven anomalies which periodically generate life-like structures within non-living solutions. In the early 1800s, small sealed tubes containing various mineral solutions plus camphor were sold on London Bridge as devices for forecasting the weather. Called *weather glasses* or *camphor glasses*, these were studied and perfected in recipe by Admiral Robert Fitzroy, whose name is today often attached to them (Fitzroy 1863). While their utility as a precision weather instrument is debatable, my own casual observations suggest they do react to the proximity of regional storm fronts, but not to local and moderate temperature changes. The sealed tubes contained a concentrated solution of water, ethanol, camphor, potassium nitrate and ammonium chloride. They

generally remain clear in solution over long periods, except when weather undergoes a major change and their apparent reactivity is increased, after which crystals of various amounts and structure grow upwards inside the sealed glass tube. These frequently have an amazing resemblance to organic structures, such as delicately-curved and exquisite feathers, or rough tree-branches. Figure 25 gives several examples. Admiral Robert Fitzroy later became known to history as the drafter of early weather maps, and notably as the Captain of the *Beagle*, the ship that took Charles Darwin on his famous voyage of discovery. Fitzroy's stormglass became an item of antique or novelty interest, sold in weather-instrument catalogs to hobbyists. However, the stormglass marks the approximate beginnings of a line of scientific investigation on subtle weather influences upon chemistry.

One finds mention of similar water-chemical solutions yielding up organic-appearing macro-structures in works such as LeBon's *Evolution of Forces* (1908) which for one example recounted the work of a M. Stéphane Leduc, along with a photographic plate that is reproduced in Figure 26, demonstrating "mimicry of plant forms by metallic salts". We must ask, what is it within the water and certain inorganic chemicals which leads them towards such "mimicry"?

The tradition of the vitalists, who argued for a more cosmic or creative life-energetic phenomenon, passed out of favor by the early 1900s with the ascendancy of biochemistry and eventually the findings of genetic and DNA research. The most ambitious efforts marking the high point of the vitalists appeared in works such as *On Growth and Form* by D'Arcy Thompson (1942), or *The Curves of Life* by Theodore Cook (1914). These works detailed the wide range of phenomena within non-living nature, in terms of shapes, forms and mathematical struc-



Figure 25: Feather-like or Fern-like Forms, developing within a Fitzroy Stormglass solution at the author's laboratory, just before stormy weather. Note the amorphous precipitate at the bottom, out of which the more organized and life-like structures emerge, without any clear correlation to temperature.

ture, which showed agreeable comparison to the world of the living. These examples ranged from the more obvious and simple comparisons, such as the coral-like structure of some aragonite (calcium carbonate) minerals, to the Fibonacci series of mathematical ratios as seen in the spiral-form development of many living structures. Some of these ratios are also repeated – more or less – in the larger spiral-forms of hurricanes, planetary orbital spacings, galactic shapes and the like. While some of this most certainly falls into the category of poetic license, or philosophy, it nevertheless was and remains today a body of empirical evidence indicating still unresolved issues in the natural sciences.

These studies with such great emphasis upon spiral-forms in nature again remind us of Reich's larger cosmological theory of *cosmic superimposition* (Reich 1951c) wherein he connected the spiral form of organic structures like sea-shells with larger

cosmic spirals such as hurricanes, the spiral-paths of planets moving around suns through the heavens, and galactic spirals, to the spiral-form motion of the cosmic life energy, his orgone.

We may also cite some of Reich's early biophysical experiments in microscopy, on the *origins of life* question. Reich found that compounds composed of inorganic minerals and chemicals, or of earth soils, when subjected to high temperature and pressure sterilization, and then freezing, would develop forms and structures which any well-trained microbiologist might swear were living – though in the example I give here, they were not motile or alive, merely showing the forms and structures of life. His bion experiments (Reich 1938) which revealed a microbial form transitional between the non-living and living, and also his Experiment 20, are cases in point (Reich 1945; Grad 1955). Below in Figure 27 are three photo-micrographs of Reich's *life-like but*

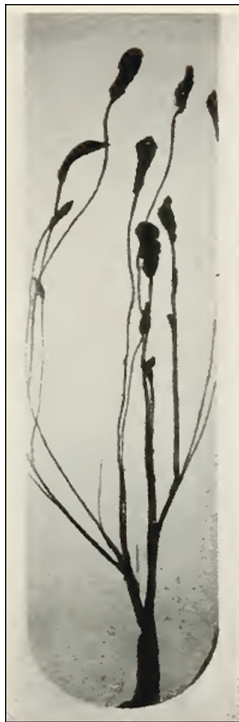


Figure 26: *Non-living Plant-like Form, created from copper sulfate granules immersed into an aqueous solution of potassium ferrocyanide and NaCl. From Leduc, in LeBon (1908)*

non-living forms, made during replication studies at my laboratory, and which were presented in 2000 to the *Second International Conference on Pleomorphism* (DeMeo 2000, 2002d).

It is also important to note, Reich's bion experiments directly led to the discovery of the orgone phenomenon, firstly identified as a blue-glowing radiation emitted from bions created through incandescent heating of beach sand and other inorganic materials. Some of those preparations eventually did become *motile and capable of growth*. (Reich 1938). Reich and his associate Prof. duTeil presented their findings on the bions to the *French Academy of Science* back in 1937, but events preceding WW-II and a fascist newspaper smear campaign basically hounded Reich out of Europe by 1939 (Sharaf 1983). Space unfortunately does not allow elaboration here.

Along this track, of unresolved issues related to water and the background medium in which it is immersed, we may also mention how, over the last 100 years, there have been repeated reports of strange lightning and color-burst phenomena occurring at the tops of large thunderstorms. The atmospheric scientists ignored such anecdotal reports until modern times when the lights were finally photographed. The photos reveal plasmatic shapes and forms appearing in brief flashes of colored light, which move upwards from thunderstorms into the lower stratosphere. They are today called *jets* and *sprites* (Lyons et al. 2003) confirming the early eye-witness reports. Some of them are reddish in color, others bluish. Nobody yet fully understands their function or significance. Their discovery was fully accidental. But it bears mentioning here, if only to remind us to be humble before nature.

Cosmic Ether of Space, Revisited

To close this paper, there are newer research investigations which have documented the cosmic *ether of space* and a variable light-speed. This ether phenomenon has not only been detected, repeatedly so, but we also know today how the ether-theory was only

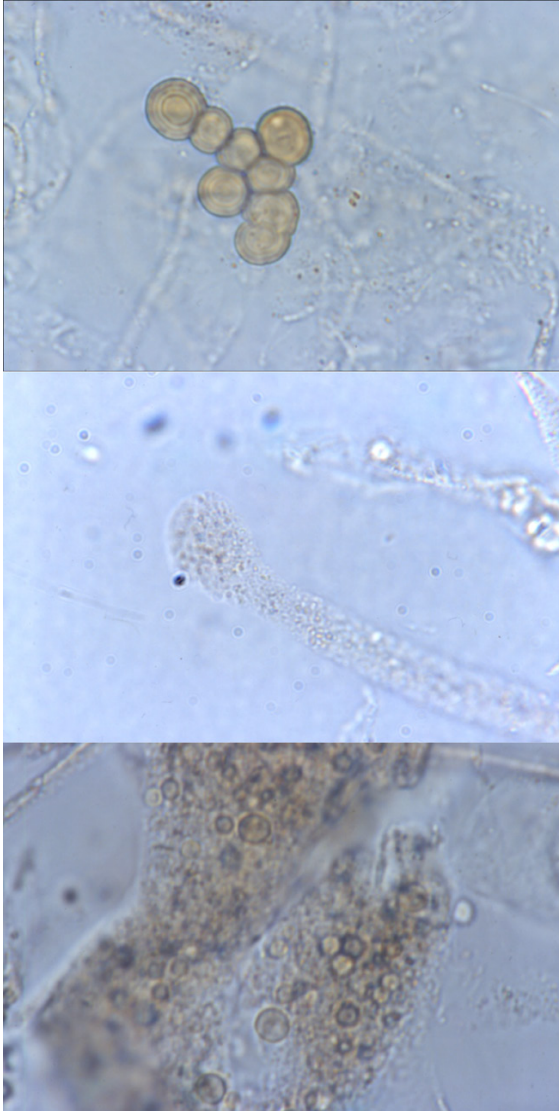


Figure 27: Non-living but life-like structural forms at 400x magnification, created in the author's laboratory replication of Reich's Experiment 20. A small quantity of earth and moss was boiled in well-water, decanted and coarse filtered, vacuum micro-filtered to below 0.2 micron, portioned into test tubes, autoclaved at 130 °C and 20 pounds pressure for 45 minutes, then frozen for two months, and finally thawed and observed. All three images come from the same tube-sample. (DeMeo 2000, 2002d)

defeated in the latter part of the 20th Century through a combination of hostile neglect and political obfuscation within the sciences. For example, the physicist Dayton Miller (1933) who eventually constructed the largest ever Michelson-type light-beam interferometer, made investigations of the ether-drift question starting in 1906 and running nearly continuously through the late 1920s. Most notable were his critical experiments atop Mt. Wilson, at 2100 meter elevation, undertaken over four seasonal epochs in 1925-1926. Those experiments positively demonstrated a variable speed of light, with a preferred axis-of-drift through the cosmic ether at around 10 km/sec (Miller 1933; DeMeo 2011). Miller documented not only sidereal-day and seasonal variations in the velocity of ether wind, but plotted the galactic axial coordinates of earth's net motion through the ether. Figures 28 and 29 show Miller's massive light-beam interferometer, and one of his more important data graphics. (Miller 1928, 1931) When his data is organized by sidereal time, a sinusoidal pattern with galactic vector is apparent within it. When organized by civil-time on the 24-hour clock, no such pattern or cosmic component is apparent.

Throughout the 1920s and early 1930s, Miller's work attracted both scientific and popular press attention as having refuted Einstein. (Web ref.11) Einstein was aware of the threat to his theories even before the full results of Miller's Mt. Wilson experiments had been published, admitting on many occasions that, if Miller was correct, then his theory of relativity had to be wrong.

"If the results of Miller's experiments should indeed be confirmed, the relativity theory could not be upheld. Because in that case, the experiments would question, that with reference to the coordinate system of a suitable state of move-

ment (earth), the vacuum speed of light was dependent upon direction. Thus the principle of the constancy of the speed of light would have been proven wrong, which constitutes one of the two cornerstones of the theory.” – Albert Einstein (1926)

After Miller, additional experiments replicating the MM experiment, but with clear positive results, were undertaken with interferometers positioned at higher altitudes by Michelson, with assistance from Pease-Pearson (Michelson et al. 1929), and later by Kennedy and Thorndike (1932). However, both Pease-Pearson and Kennedy-Thorndike were strong advocates of Einstein’s relativity and hostile to the ether theory. They both detected an ether-drift of between 20-24 km/sec, close to the same velocity as that reported earlier by Miller, but they interpreted it negatively according to the assumption of a static and immobile non-

material ether, which anticipated an effect of around 300 km/sec. This rejection of the smaller result as inconsequential – which it was not – left the Einstein theory of relativity unchallenged, and the whole subject of cosmic ether died with Michelson’s death in 1931, and Miller’s death in 1941. They had never been successfully refuted, but their important ideas and findings merely left to wilt on the vine. (DeMeo 2011).

New experiments on the cosmic ether have been undertaken and published in the last several decades, confirming the Miller result. Specifically, Munera, (2002) and Munera et al. (2006), Cahill (2006, 2007), and Galaev (2001, 2002) all undertook new ether-drift experiments, using novel designs of interferometry and modern equipment. They all confirmed a very similar ether-drift effect as Miller determined, including similar velocities, sidereal-day patterns and axes of cosmic ether drift. Allais (1997) found an additional non-random

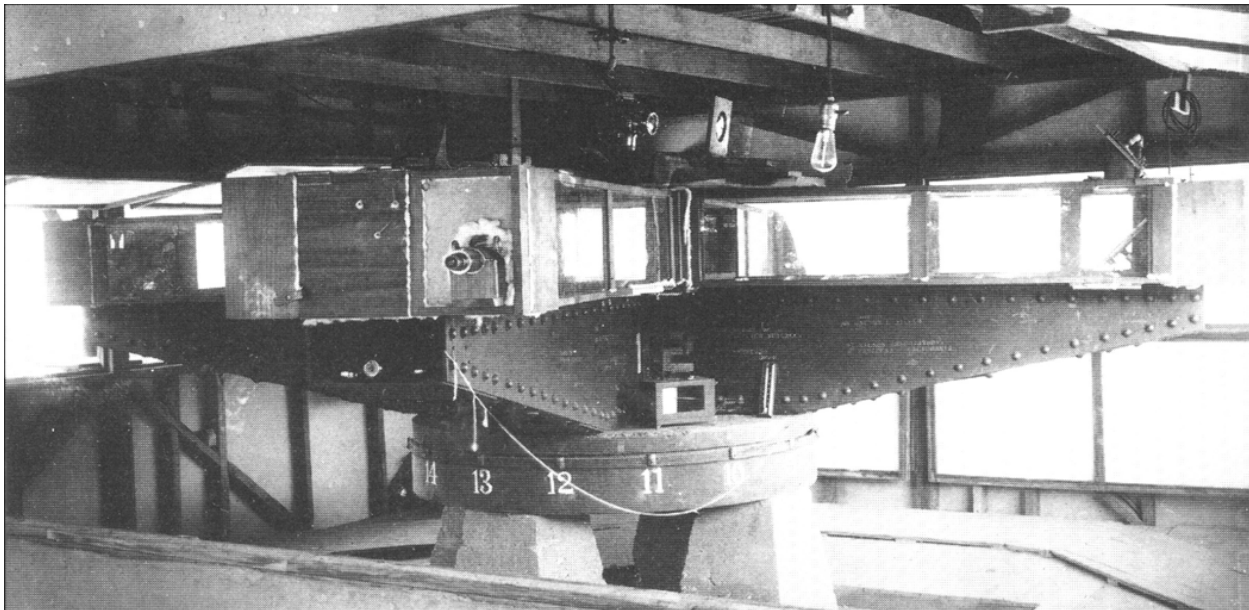


Figure 28: Dayton Miller’s Interferometer as used in the critical Mt. Wilson experiments of 1925-26. It was the largest light-beam interferometer ever constructed, with a light-path of 64 meters. For more than a decade, he made over 12,000 individual evaluation-turns of the instrument, detecting a clear variation in the speed of light. By comparison, the original Michelson-Morley experiment used an interferometer of 22 meters light-path, making only 36 evaluation turns of their instrument. Nevertheless, they also got a slight positive effect, too small to justify the static ether of Newton, but significant enough they noted in their 1887 paper the necessity to continue work on the subject. That task fell to Miller (Miller 1928, 1933; DeMeo 2011).

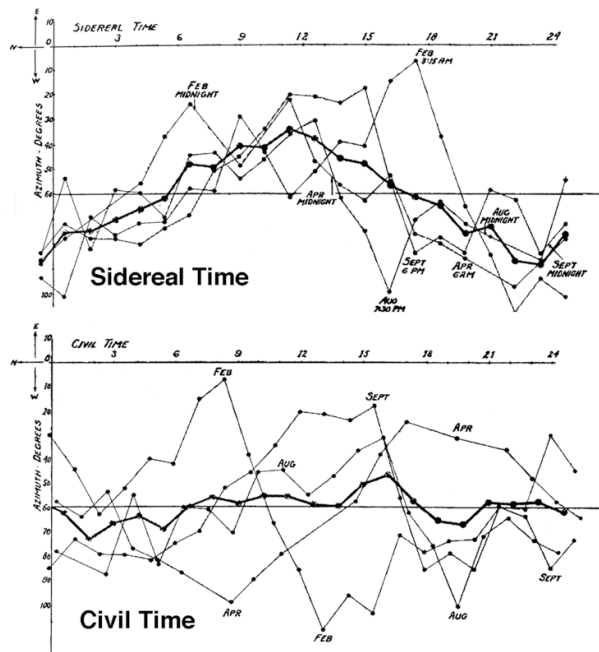


Figure 29: Miller's Azimuth Data from four seasonal epochs of work at Mt. Wilson. When organized by Civil Time (bottom graph) no clear pattern emerges, as one might expect if the instrument had been unduly influenced by solar heating or other diurnal factors. When organized by Sidereal Time, however, a pattern pointing to cosmic coordinates emerged (upper graph). (Miller 1928)

pattern within Miller's original data. DeMeo (2011) also addressed and refuted the study of Shankland et al. (1955) which proclaimed, but did not prove, flaws in Miller's work.

These many independent experiments prove the existence of a dynamic and tangible cosmic ether, moving faster at higher altitudes, and slowed or reflected by dense materials such as metals or stone. As such, while there is no evidence for the immobile and "static ether" of Newtonian absolute space, there is good evidence for a tangible and earth-entrained dynamic ether. (DeMeo 2004). Space prohibits detailed discussion on this interesting scientific controversy, which appears directly relevant to modern findings on the postulated *neutrino sea* (Dudley 1975, 1976; Ruderfer 1972) and *dark matter wind*. (Bernabei 2007, 2010; Bernabei et al. 2000; Web ref.12) But a few

related and most critical facts command our attention.

The DAMA project of Rita Bernabei has, over 14 years of work, detected a clear dark matter signature in the findings of weakly interacting massive particles ("wimps") associated with cosmic parameters. The findings of the DAMA team have been controversial, however, because the data indicates a clear sidereal-seasonal pattern in the residual detections, suggesting a dark-matter wind, or wimp-wind (Bernabei 2007, 2010; Bernabei et al. 2000; Web ref.12). This is shown in Figure 30.

Of critical importance and relevance to the discussion here is the following fact: The velocity-variations of the Bernabei dark-matter-wind or wimp-wind are congruent and agreeable with both standard astronomy regarding the spiral-form motion of the Earth-Sun system, and with the findings of Miller. Both the Bernabei team's residual data variations, and Miller's ether-drift (or ether-wind) variations, independently proved the Earth moves at maximum velocity and through a maximum distance of space in June, and at minimum velocity and distance in December. Figures 31 and 32 show this graphically.

The Earth's axis of net motion is not exactly down the center-line of the spiral, which as noted by both Reich and Piccardi in the mid-20th Century, gives rise to clear velocity variations over the course of a year. These are of great significance if space has energy or even the most minute of substance to it. The "X" near to Vega in Figure 31 marks the northern axis of ether-drift as determined from Miller's ether-drift experiments. Figure 32 gives the velocity determinations from Miller's ether-drift experiments over four seasonal epochs of experiments at Mt. Wilson. These motional diagrams are all agreeable with standard astronomical de-

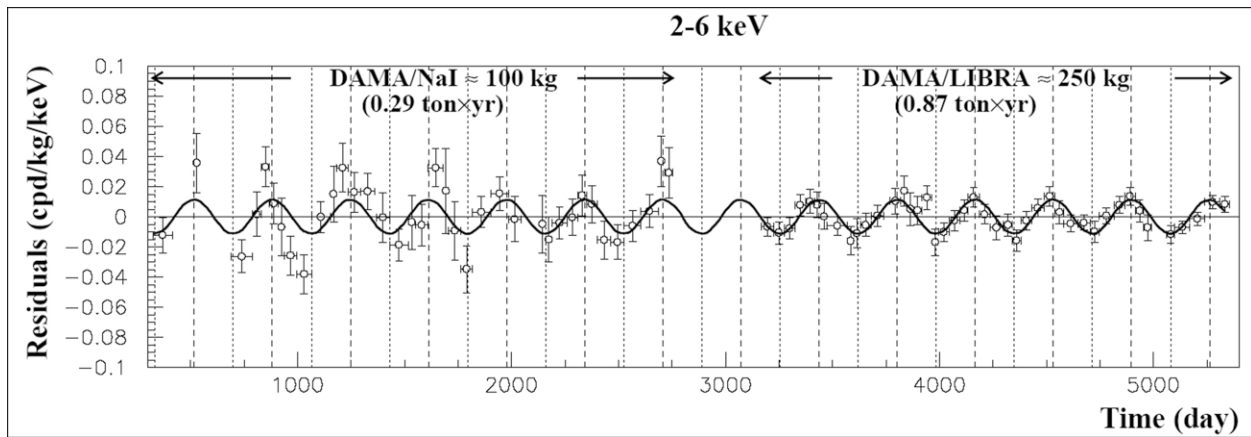
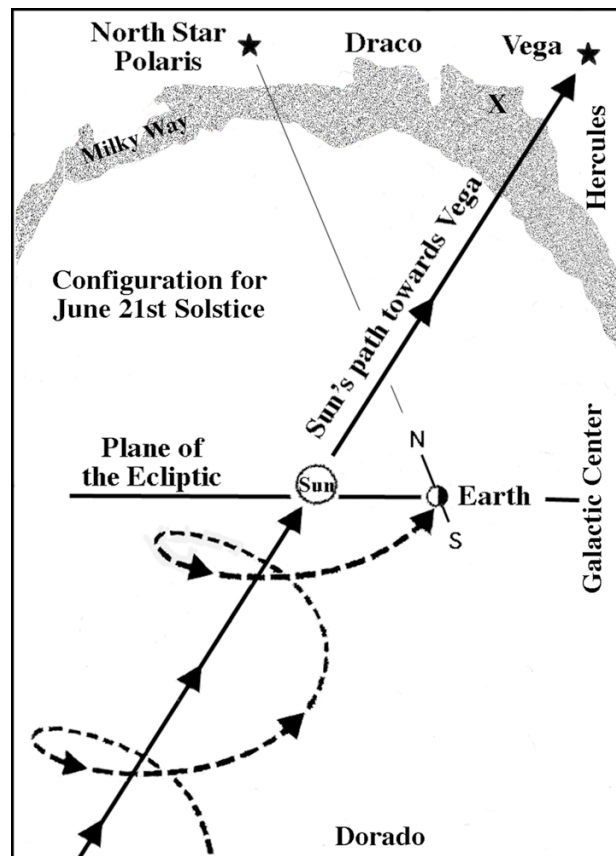


Figure 30: Seasonal Variations in Dark Matter Wind “Wimp” Residuals over approximately 14 years, from the Bernabei DAMA Group working under the Gran Sasso mountain in Northern Italy. The measured wimp-maxima for each yearly cycle occurs in June, at the time of greatest Earth velocity, with mid-December marking the minima (from Bernabei 2010, Web ref.12).

terminations of 2 June as the velocity maxima, and 2 December as the velocity minima.

The cosmological motions depicted in my two Figures, derived from classical astronomy and validated independently by the net motional determinations of Miller and Bernabei, are also agreeable with Reich’s spiral-motional cosmic superimposition theory, with Piccardi’s determinations of seasonal variations in his chemical tests (eg., Figure 17, Piccardi’s spiral-form model), and with Brown’s sidereal-day and seasonal variations in the behaviors of various organisms monitored under controlled laboratory conditions. All of them identified, independently and without apparent knowledge of the other’s work, similar sidereal-day and/or seasonal axis-of-greatest-magnitude effects in their various experiments. How can this be understood, unless it is the product of a single cosmic energetic parameter through which the Earth is interacting at seasonally-variable speeds, and which also has optical, ionizational, chemical and biological influences? In short, there appears to be a common, singular phenomenon, expressing motional components as determined in the *ether-drift* and *dark-matter-wind* experiments, but with *living-water* and *life-energetic* components.



Figures 31: The Spiral Form Path of the Earth-Sun system through the Galaxy, showing its directional axis and variations in speed over the course of the year. (DeMeo 2004)

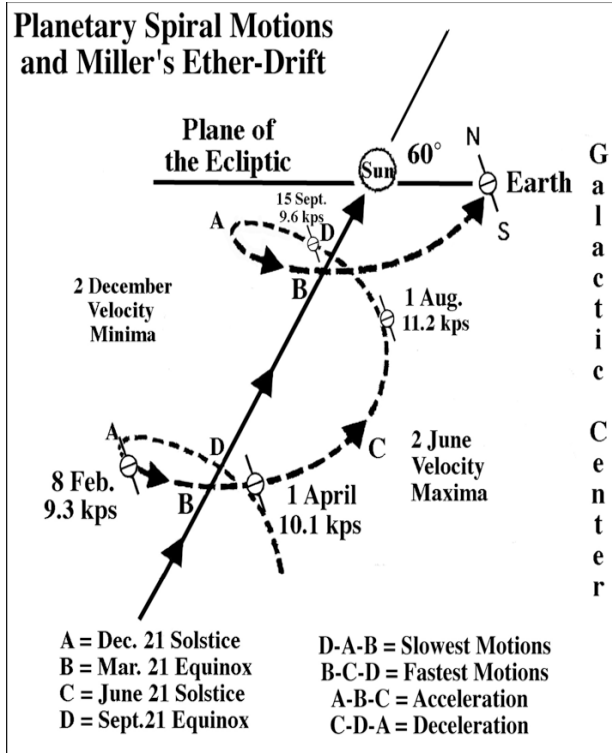


Figure 32: The Spiral Form Path of the Earth-Sun system through the Galaxy, showing its directional axis and variations in speed over the course of the year. (DeMeo 2004)

The fact that this same phenomenon has a blue glowing color in states of high excitation is an additional line of commonality, speaking in great favor of Reich's theory. We appear to be dealing here with the age-old example of a dozen blind and deaf scientists in a room with an elephant, each of whom has grasped a different part of the beast, and is describing it in very different terms. But in reality, it is one and the same thing.

We could fill many additional pages with similar notable correlations, from various disciplines, but space does not allow it. However, let us take a last look at one notable, large and final point of evidence, on the properties of *galactic halos*, recalling how this is considered to be a direct expression of the cosmic interstellar medium. Figure 33 shows one of many typical photos of the blue halo surrounding the Andromeda Galaxy, as photographed repeatedly by astron-

omers over many decades. While called an expression of dark matter by contemporary astrophysics, the luminous galactic haloes are not "dark" at all. The color is an intensive blue, similar to but weaker than what is observed in deep clear lakes of good quality water, or in luminous high-mountain and forest-region atmospheres, or as seen in Reich's luminating high-vacuum tubes – they all blossom into a state of luminous fluorescence when excited by natural sunlight or star light.

Are they all different expressions of one and the same phenomenon?

Conclusions

From a foundation of considerable empirical evidence, I have briefly outlined Reich's original postulate for an ether-like, life-energetic blue-glowing phenomenon which is a force in nature all unto itself, a direct expression of a biologically, chemically and electrically-active *life-energy*, which can be seen, photographed, and, on the Earth's surface, felt and accumulated in special container-traps he termed orgone energy accumulators, which build it to higher concentrations. And as Reich noted, once gathered inside his accumulator devices, this cosmic force can be studied. It can affect ionization vacuum tubes and send GM counters singing to high counts, without any radioactive materials. It can generate a higher charge-density which causes water to increase its absorption in the ultraviolet range, and delay the discharge-time of charged electroscopes. It can be used to boost the growth of plants, to slow the growth of tumors in cancer mice, and even to heal people of some health conditions. It is not some mere side-expression of a different underlying force which cannot itself be seen or measured. It is "the force" of interest all by itself. It is the stuff which imparts a blue glow into natural hot spring waters, which



Figure 33: Galactic Halo Surrounding M31, the Andromeda Galaxy. Another blue-glowing “anomaly”? An expression of enigmatic “dark matter” which otherwise cannot be seen? Or one face of a universal, measurable, quasi-electric life-energetic force in nature, all unto itself, with myriad visible blue-fluorescing expressions? (Web ref.14)

are objectively documented world-wide, and which ordinary people remark about as having soothing and healing qualities. It is documented in the blue glow sometimes seen and photographed in the atmosphere of unpolluted and healthy forest-mountain regions. People are spontaneously attracted to this phenomenon, in some kind of biological attraction and resonance, feeling it to be important, beautiful, and helpful to their well-being. The highly charged water in the living organism is attracted to these wonderful blue-glowing phenomena.

All these diverse phenomena appear to be the same force in nature, similar also to that which, as we have seen in the functioning of Reich’s other invention, the cloudbuster, can be triggered to pulsate and bring rains – much as solar variation and lunar cycles also affect the weather, and living creatures, and vacuum potentials, and water properties. Much remains to be clarified and understood in this regard, so we must tread carefully. But the basic parameters of a unitary cosmic force affecting life, water, and the non-living world, are reasonably well clarified in the works I have surveyed.

I should also ask for the following right, as Reich did (but which was not granted to him): “*The right to be wrong without being hung by the neck for it.*”

Classical science has searched for this cosmic medium, this creative principle in nature over eons, and one finds the same basic questions asked by Galileo, Newton, Einstein and others still being asked today. Is it possible, the unifying, unitary phenomenon which could provide better answers has been staring at us, right in the face all along? And that over decades, we have persecuted and pilloried nearly every natural scientist and physician who has dared to investigate the matter? I submit, this also is the case.

A review has also been made of diverse findings in biology, chemistry, meteorology and astrophysics, primarily dating back to the start of the 20th Century, which are firstly agreeable with Reich’s findings and theory, and secondly offer fresh perspectives and “new” empirical data by which modern problems in the natural sciences might be advanced, notably as regarding the anomalous properties of water. Numerous independent lines of investigation appear to support the idea that space is charged with a cosmic energy which not only affects the structure and behavior of water, but which can also interact with other materials, such as metal plate and high-dielectric insulators, or with metal pipe antennas immersed into structured water, to affect electrical charge parameters in both electroscopes and clouds at a distance. New phenomenon are documented which are not predicted by orthodox theory. The various findings reviewed hold a great significance for biology and other disciplines, given that all of life grew and evolved under the influences of this same background ocean of cosmic energy, which not only can affect the technical instruments of natural science, but also the physical chemistry of water, and conse-

quently the structure, form and behavior, as well as the health and well-being of living creatures. A fresh look at these older findings of the 20th Century are, therefore, both warranted and necessary.

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4. An internet search of Wilhelm Reich's name in association with "body oriented psychotherapy" or "orgone therapy" will bring up thousands of links, nearly all of which mention Reich favorably, though often confusedly.

5. See the overflow lakes via Google Earth, at Lat. 23.236 N., Long 30.9334 E. Scan out to an altitude of around 100 km for the best view.

6. CIFA website:

http://www.cifa-icef.org/sci_prob.html

7. Conference on the Physics, Chemistry and Biology of Water, 2006 and continuing annually.

<http://www.watercon.org>

8. The NPS website:

<http://www.nps.gov/archive/yell/tours/oldfaithful/mrnggly.htm>

A larger version of my photo from 2000 is here:

<http://www.orgonelab.org/graphics/WaterArticle/MorningGloryA.jpg>

Here is another from a now-defunct NPS webpage made in c.2006:

<http://www.orgonelab.org/graphics/WaterArticle/MorningGloryB.jpg>

9. Photograph of the 'Valia Calda' in the Pindos mountains, by G. Tzatzanis c.1992. Details were communicated by translator T. Hassapi. A copy of the full tourist poster, made by the Grevena Prefecture's Forest Administration, is posted here:

<http://www.orgonelab.org/graphics/WaterArticle/GreekMountain.jpg>

10.

<http://www.orgonelab.org/DeMeoBionsColor.pdf>

[2002]

11. On-line list of historical ether-drift publications:
<http://www.orgonelab.org/energyinspace.htm>
[2010]

12. Rita Bernabei presentations on Dark Matter
Wind:
<http://people.roma2.infn.it/~dama/web/home.html>
[2011]

13. Various photos of blue-glowing or fluorescing
glacier ponds and ice are on internet, including
many which fully defy the usual “light scattering”
explanations. For example:

<http://www.lostmanproject.com/posts/a-glacial-retreat>
<http://www.terrageria.com/parks/np-image.glba36899.html>
<http://www.terrageria.com/parks/np-image.glba21114.html>
<http://www.orgonelab.org/graphics/WaterArticle/GlacierKnikAlaska3.jpg>

14. For a stunning image of Andromeda, M31, show-
ing blue-glowing “stuff” floating around its axis of ro-
tation, with nearby regions still remaining jet-black
by comparison, download one of the higher-density
images from the Kitt Peak Observatory, here:

http://www.noao.edu/image_gallery/html/imo685.html

