

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 (electrodynamic 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.

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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 symptomatic 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).adsf

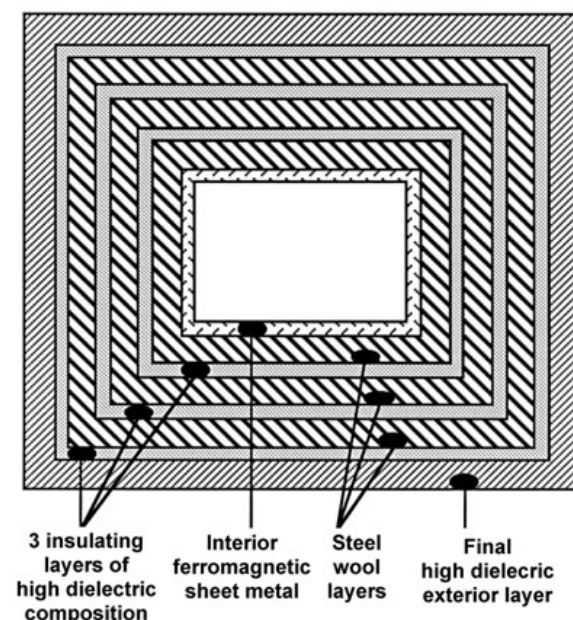


Figure 1: Schematic cross-section of an orgone accumulator, showing its layered construction. The interior layer is ferromagnetic sheet metal, the organic-insulating layers are of high-dielectric materials.



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.

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 *e* 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 scientist 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 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 understood the implications and termed it "a great bomb in physics" or "bombshell for physics". (Reich 1953b)

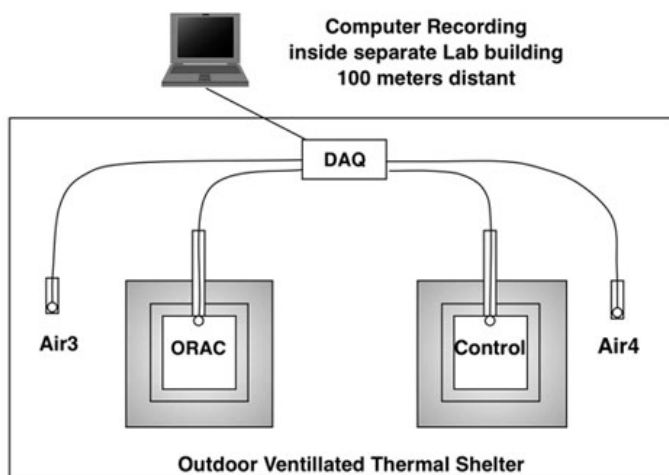


Figure 4: Apparatus for the Reich Thermal Anomaly Experiment (DeMeo 2010a)

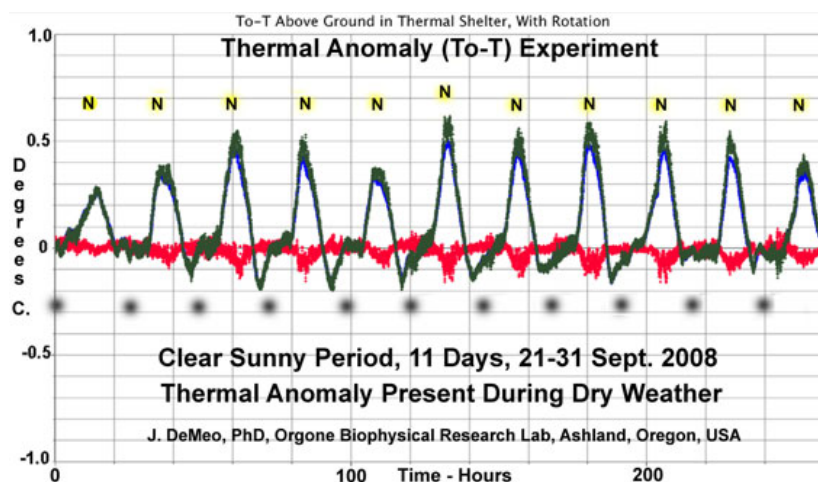


Figure 5: Representative Result from a Replication of the Reich Thermal Anomaly Experiment. (DeMeo 2010a) Red line tracing is the difference between two open-air thermistors suspended near to the two enclosures (orgone accumulator and control) showing minimal differences over the course of the day.

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.

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 poly-ball. 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 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.

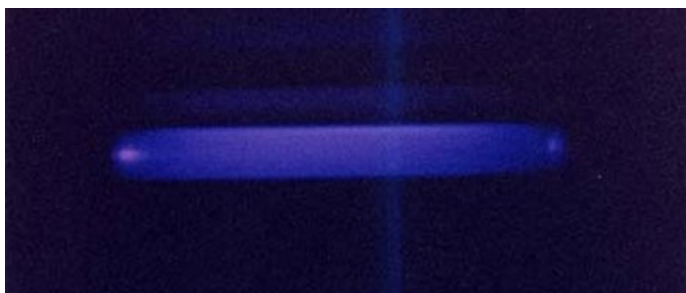


Figure 6: Blue lumination of ~450 nm, from a high-vacuum (0.5 micron) pressure glass tube, charged in a strong orgone accumulator over a year. No electricity was applied. The tube glows only from hand-stroking. (DeMeo 2002a)

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)

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 biophysics since the mid-20th Century (Anderson and Spangler 1973; Emery 1972).

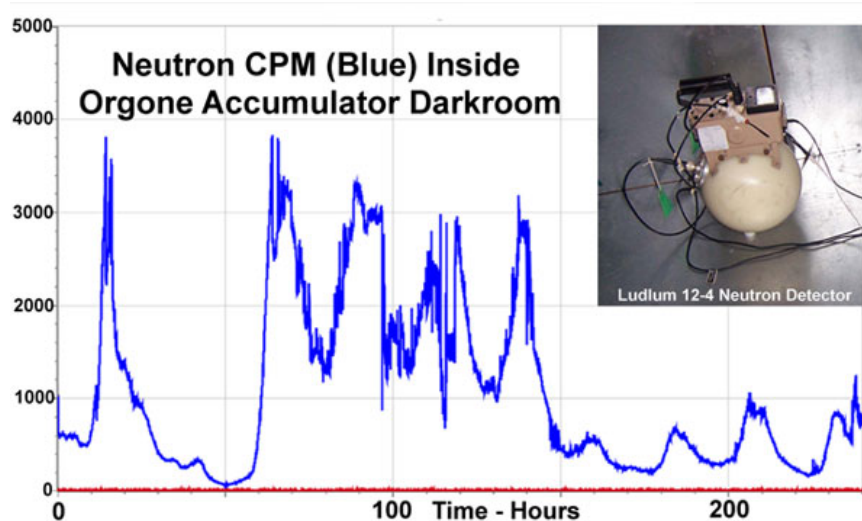


Figure 7: Count rate per minute from an orgone-charged Ludlum 12-4 neutron counter, over 250 hours (10.5 days) from 4-14 February 2007. The peaks, which range up to 4000 cpm, are approximately 24 hours apart, marking the time of solar-noon at the laboratory site. The counter with poly-ball is shown in 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)

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 in the laboratory region of rural Pennsylvania, following a Chinese atomic bomb test in the atmosphere on 26 September of 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).

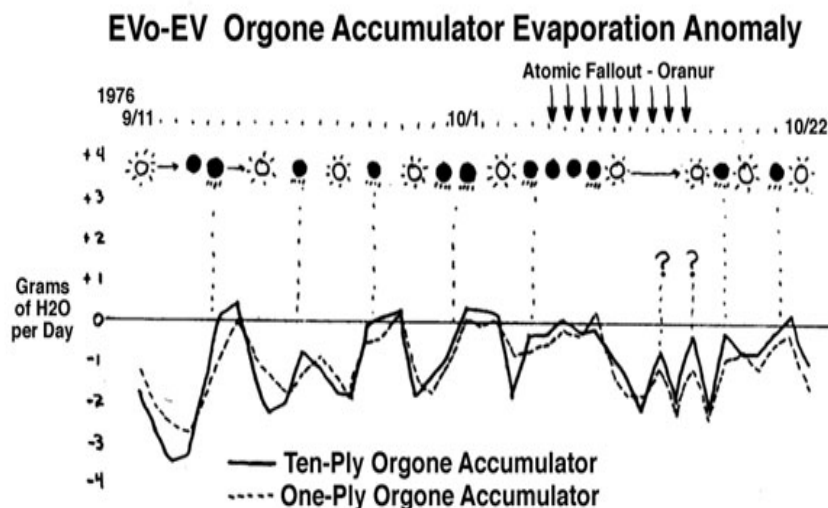


Figure 8: Water Evaporation Suppression Effect of the Orgone Accumulator. Evaporation in the orgone accumulator (EVo) minus evaporation in the control (EV), over 42 days in 1976, at a lab in Eastern Pennsylvania. Evaporation of water is suppressed during sunny days when the accumulator has a stronger 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)

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 snow-melt, 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 groundwater, 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 accumulator appears to be the factor absorbing these UV frequencies.

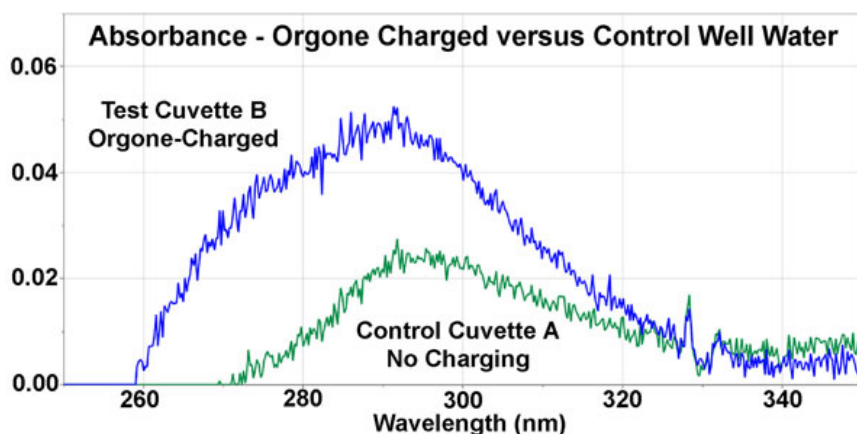


Figure 9: UV absorption of a well-water sample is influenced by charging inside an orgone accumulator. In this case, the slow loss of UV absorption over several months was slowed retarded by orgone-charging of the Cuvette B sample. Prior to charging, Cuvette B consistently showed a lower absorption than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

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 ($p < 0.0001$).

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).



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)

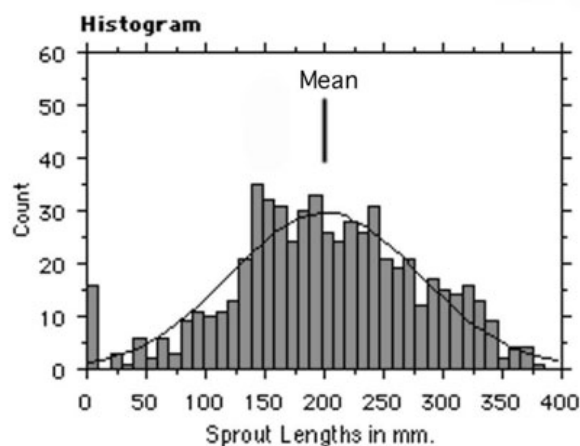
Laboratory Animal Experiments with the Reich Accumulator

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 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

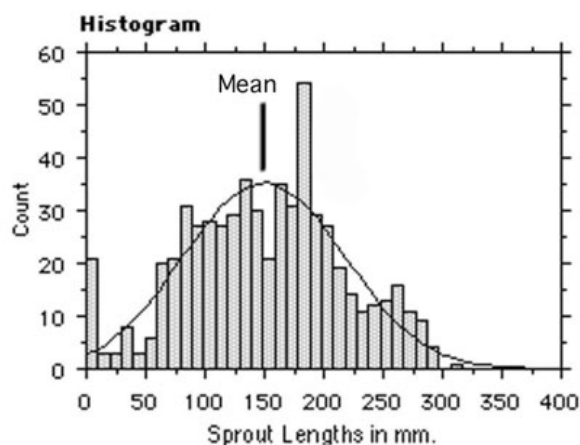
Regarding human subjects, there are two double-blind controlled studies which have been undertaken to evaluate the orgone accumulator over a dummy-box or sham device. Both of these showed very clear effects from the accumulator, verifying Reich's original claims for a mild parasympathetic stimulus, with attending slight increases in body core temperature, and moderations of blood pressure, pulse rate, and other physiological measures. The study by Muschenich 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.

**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)

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) 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.



Figure 12: Clodbuster Antenna used by the author in field trials in the Kansas, American Southeast and Southwest experiments described here.

Replications of Reich’s Findings II: The Water-Grounded Clodbuster Antenna

Reich’s specialized water-grounded weather-antenna, the clodbuster 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 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.

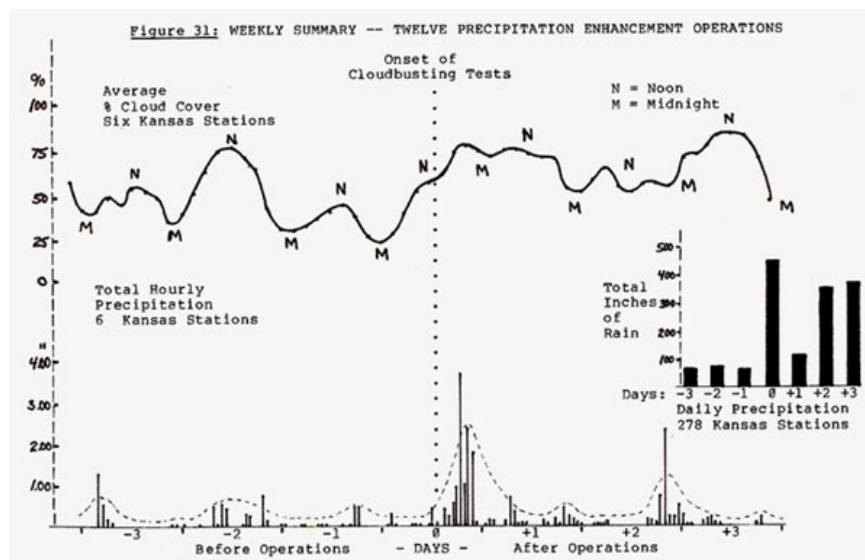


Figure 13: Effects from 12 Clodbuster Tests on the Weather over the State of Kansas. Upper and lower graphics are percent cloud cover and hourly precipitation from six Kansas stations. Inset graph is daily precipitation from 278 Kansas stations. (DeMeo 1979a)

DeMeo’s Field Experiments in the USA

My own experimental field evaluations of the clodbuster have yielded significant positive results in support of Reich. A 1979 study of the clodbuster 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 clodbuster 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 clodbuster antenna

was put into operation.

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.

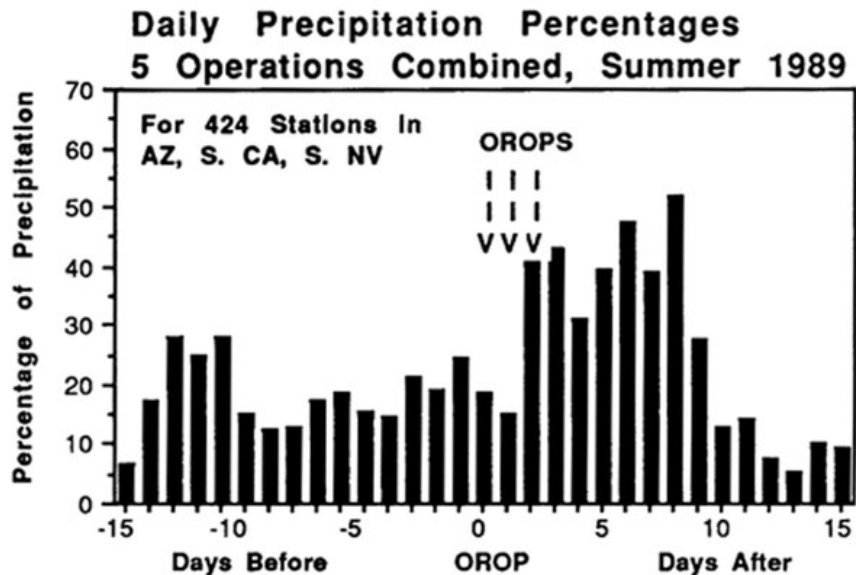


Figure 14: Averaged Daily Precipitation Percentages for the five 1989 American Southwest Cloudbusting Operations Combined. Starting shortly after the onset of the field operations (arrows starting at day zero) a significant increase in precipitation begins about 48 hours later, persisting for approximately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

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 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*.

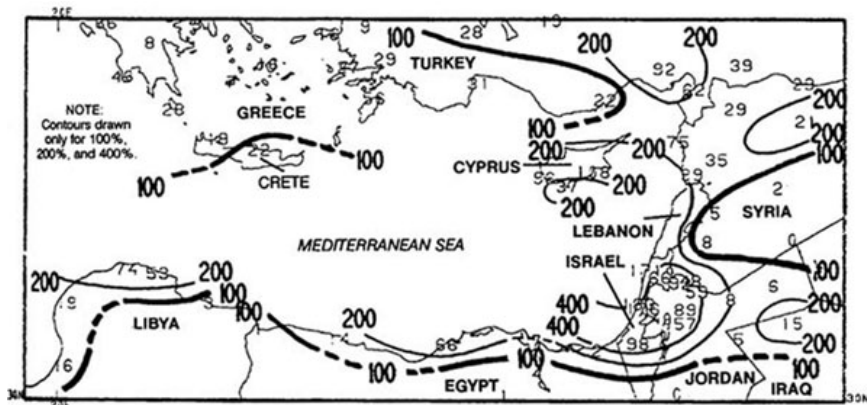


Figure 15: Israel Cloudbusting Operation, Early Results: Percentage of Normal Precipitation Map, Eastern Mediterranean, Nov. 27 to Dec. 7, 1991. Isolines showing rainfall contours for the first major storm to enter Israel in many years. This exceptionally heavy rainfall episode began only 10 days after 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)

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 dedicated 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 cloudbuster 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.

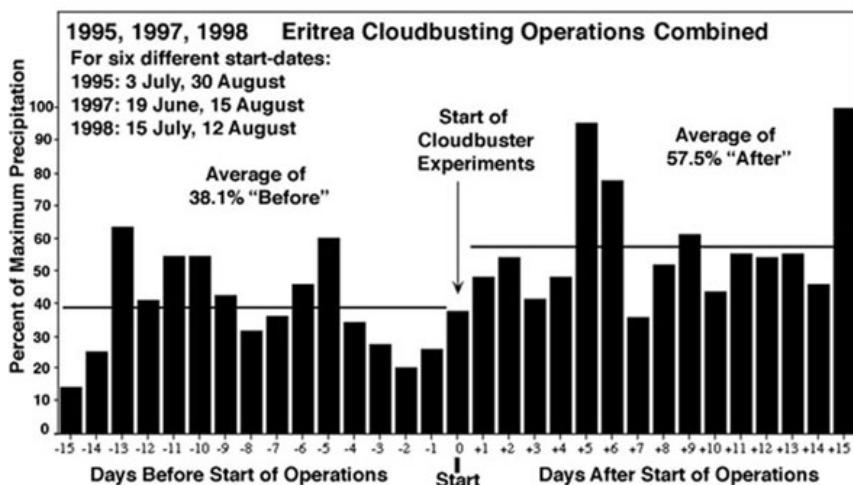


Figure 16: Daily Precipitation Percentages for 15 days before and after the start of six different Phases of cloudbusting operations in Eritrea. The percent-of-maximum rainfall during the "after" period constitutes >150% of the percent-of-maximum during the "before" period, for a statistically-significant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

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.

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).



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)

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

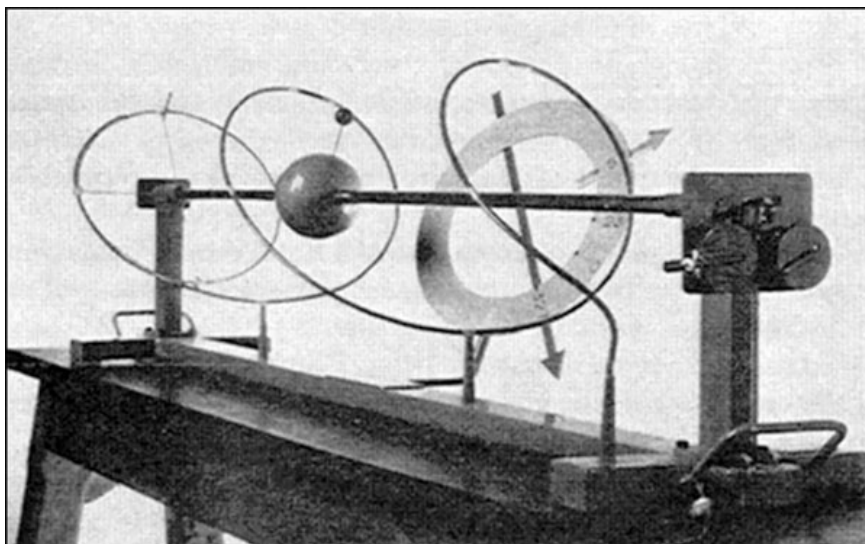


Figure 18: Piccardi's apparatus showing the helicoidal motion of the Earth around the Sun, and the variable speeding-up and slowing-down of the Earth's velocity over the course of the year (Piccardi 1962).

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 energy 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.



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

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 accumulator 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 phenomena 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 *electro-dynamic* 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 *electrodynamic field*, which orchestrated 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 as 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 *succused*, 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 Jacques 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.

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