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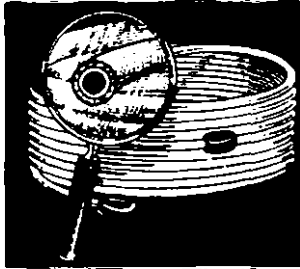
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page 6

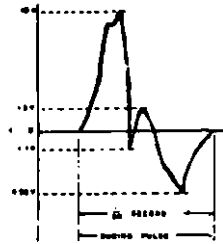
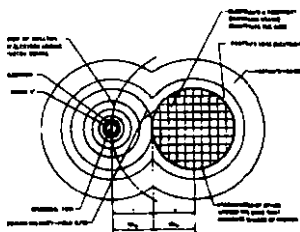


Fig. 5.

page 34



page 49

CONTENTS

FEATURES

AN INTRODUCTION TO THE MYSTERIES OF GROUND RADIO
Gerry Vassilatos 6

MY SISTER NORENE
Tracy Jones 26

OSCILLOCLAST ENERGIES
Thomas Colson 34

CREATION OF ENERGY AND COSMIC MATTER
 FROM THE UNIVERSAL SPACE SUBSTRATUM
Paramahansa Tewari 49

YOUR BODY'S MANY CRIES FOR WATER BY FEYEDOON BATMANGHELIDJ M.D.
Book Review by Trevor James Constable 59

IN MEMORIAM: WILHELM H. LEHR
Gerry Vassilatos 61

COLUMNS

THE BORDERLAND EXPERIMENTER: GROUND ANTENNAS
Gerry Vassilatos and Michael Theroux 21

THE PUNDIT CURMUDGEON:
 PRELIMINARY REACTIONS TO KAALI ET AL
 US PATENTS 5,139,684 AND 5,188,738
E.D. O'Brian 37

DEPARTMENTS

EDITORIAL
Michael Theroux 2

CLIPS, QUOTES, & COMMENTS 3

Editor in Chief

Michael Theroux

Printing

TCI Press, Seekonk, MA

Production Assistants

Patrick Armstrong

Brian Butler

Consulting Editors

Trevor James Constable, Michael Elsey,

Peter Lindemann, Michael Riversong,

Gerry Vassilatos

BORDERLANDS

*A Quarterly Journal
of Borderland Research*

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VIEW FROM THE BORDERLANDS

Editorial

FIRST of all, we need to apologize for the tardiness of this issue. We are now well into 1997 and there are several new projects going on here at BSRF. Many new books and videos are currently in production and several new research projects are under way. As we grow in our efforts to provide readers with the best in the qualitative sciences, we sometimes find ourselves overwhelmed by the quantity of work our small staff takes on. Thank you for your patience.

Several years ago, we came across information suggesting that the ground was alive with energy and information. Soon after, we began a series of experiments to understand this vital earth energy, and to determine how it could be put into practical use. The works of Tesla, Stubblefield, Deickmann, Dolbear, and many other Victorian pioneers were consulted, and several experiments ensued. Although the problem of receiving usable energy from the ground is still elusive, other direct applications such as Radionic tuning, broadcast and shortwave radio reception, and the possibility of earthquake prediction (by the interpretation of low frequency signals from the earth) became apparent. The Earth Tones Project continues, and we have now succeeded in recording the so-called "HUM" phenomenon in real time. Ground energy research is an important science in all of its experimental manifestations, as it fully reveals the biodynamic character of the earth — that the earth is a vitally active organism.

The researches into ground radio were initially sparked by the re-creation of Tesla's work by scientist Eric Dollard. Eric has shifted his focus more recently to earthquake prediction by monitoring ground based signals from an elaborate outdoor laboratory in the high desert. This summer, we hope to report on his new work and capture it on video for our upcoming documentary series entitled, *The Borderland Experimenter* (after the column), which will include several experimental segments on pioneering researchers. The trip to the desert will coincide with our own biodynamic sensing project — to re-create the biological communications experiments of Dr. L. George Lawrence. We trust it will be a fruitful year.

We now have a toll-free phone number to assist customers and subscribers: 1-888-825-BSRF (2773). Office hours are Monday through Friday, 9am to 5pm Pacific Standard Time. If you need assistance on technical matters please use the regular office number: (707)-825-7733. Also, we have now made available all back issues of the Journal 1945 to present. The easiest way to find the subjects you are looking for is to go to our website on the Internet, and type in a search topic. The complete table of contents of every issue back to 1945 will be searched and those issues containing your topic will be retrieved. We hope this will become an invaluable tool for researchers.

A handwritten signature in black ink, appearing to read 'Michael Theroux'. The signature is stylized and somewhat cursive.

**Michael Theroux
Editor**

Clips, Quotes, & Comments

The "Hum"

I thoroughly read the article in *Borderlands* and want you to know that I find the conclusions to be very silly. The Hum is not some mysterious semi-spiritual event and the Hum is clearly not coming from HAARP or the Navy's ELF experiment in Alaska (they are far too weak). But the author never mentions the Top Secret Navy ELF range in Wisconsin and Michigan which received a lot of attention in this part of the world a few years ago when the Navy built it.

We know with certainty that they are using ELF to communicate with our nuclear attack submarine force on a daily basis. This is not a secret. Everybody up north watched them build it and the understanding is that they are using upwards of 10 million watts of RF power at a frequency of 76Hz. That frequency is set forth in the Navy Research Laboratory's web site, although they stop short of mentioning the power. That also happens to be the exact frequency of the "Hum"

I wonder where your author has been for two years to have missed these facts—or is it his intent to create a mystery. That's always more fun than dealing with physical evidence and trying to investigate it. I wonder what he would have found if he had interviewed the people at Univ. of NM who have been researching this and talking to the government. He conveniently omits that too...not nearly mysterious enough.

Anyway, thought I'd give you my ten cents worth. I was really disappointed in the article and how it was written. Silly is the best adjective that comes to mind.

— Jack Falker (jrfalker@millcomm.com)

Gerry replies:

How curious that, despite my retrieval of VLF, ELF, and ULF literature during the last four years, I am now accused of evading scientific issues and being "absent" for the

last two years! Worse yet, I am being called "silly" by someone who seems not to have read a blessed line of my article. Therefore also, nowhere in this response will I refer to you as part of "my readership", since you very obviously did not actually read my article.

Where indeed have you been sir? The *Vril Compendium* Volume 11 (1995) was devoted entirely to Military ELF technology. Perhaps having alone obtained the entire scholarly assortment of engineering articles germane to SANGUINE and SEAFARER does not qualify me to make comment on the HUM phenomenon? Had you taken the time to actually read my commentary and analysis of the Wisconsin-Michigan ELF array, as well as the complete historical bibliography of patents dealing with Subterranean Radio contained therein, you would not have wasted our time expressing your banal disdain. But time reading is time away from the axe-grinding...is it not?

My comment concerning the "physiophonic" nature of the HUM is not a "spiritual" issue at all. I have focussed attention on a strictly physiological phenomenon with which you should be thoroughly familiar, and are very apparently not. An increasing number of persons who, unlike yourself, actually experience HUM phenomena, supply me with far more valuable data. In making your particular comment on things "semi-spiritual", you are revealing a great deal more than your unwillingness to read scholarly reports, a very predictable superficial treatment of written matter. Expressing your personal dislike of biologically related issues reveals an alarming disconnection from natural vitality and reality.

My article reported the discovery that HUM effects are, very evidently, sounds generated within the musculature of the body. More specifically, the vibrations occur in the thoracic cavity, with a radiating pulsation into the auditory canals. The HUM

is thus heard with "ears closed". My article contained all of this information in great detail.

Now to be more direct, I find your criticism decisively flawed on a number of purely scientific bases. First, HAARP is not an ELF project. Second, Project SANGUINE was cancelled in 1976. To be sure, ELF antenna systems have been continually explored throughout the last four decades. Your mention of a 10 Megawatt ELF power source in Michigan is not only frightfully inaccurate, it is very telling. The principle reason for utilizing the ELF range was not merely the great depth of signal penetration, but the low wattage requirements. Galejs and Wait pointed out that 1 watt ELF power is sufficient to circumnavigate the globe. The main point of ELF transmission is not the "peak power" rating of each system, but the minimum power requirement...a fact which you have sadly confused.

Old trans-Atlantic cables have been used to provide submarine "conduction wireless" communications, systems which do not rely on ELF wave radiation. Systems far greater than SEAFARER in Michigan, some exceeding 110 miles in length, have been established and discarded (1962). Project SEAFARER was revived during the Reagan Administration in 1981, and is not (as you say) "top secret". It has had an extremely visible and detailed presence in the scholarly engineering periodicals throughout the years. The operating frequencies of SEAFARER (1987) centering on 76 Hertz, as you so aptly point out. But contrary to your strident assertions, this is not the central tone of the HUM. HUM tones are far deeper in pitch. In fact, the HUM effect varies considerably among locales.

The "rolling" atempic nature of the HUM precludes the possibility of a ELF code-pulse system source. ELF code-pulsed signals would register as very strong pulses in ELF receivers, a sad vacancy in the University of New Mexico database. Finally, military is actively dismantling ELF systems in favor of orbital point-to-point radiant energy communications systems. Wave Radio is a dying technical artform.

Despite the continued removal of these obsolescent systems, I expect the HUM Phenomenon to continue. In point of fact, the HUM was heard centuries before Radio, centuries before ELF was ever conceived. And on one more point I take offense. You

have your right to be disappointed, but I am not "vague". Learn to read deeper. I stated my personal conclusion very clearly: the HUM is a result of biodynamic energy interactions, a topic which requires experimental explorations. Please do some studying and come back for another round.

- Gerry Vassilatos, Staten Island, New York

"HUM" Research

I am a 60 years old retired telecommunications engineer and living in the south part of Sweden. My wife and I became "Hummers" during the fall 1992.

I am also a trained cw-operator (my radioamateur signal is SM7GEI) so it was easy for me to find out (by using my audio generator and compare during "quite nights") that the Hum has an average frequency about 76 Hz and seems to be pulsate quite random.

I have also designed very sensitive equipment so I can watch the Hum on my

oscilloscopes or make tape recordings of it. Seems to have some kind of both amplitude and frequency modulation? Hovers about 70-80 Hz. I have made a lot of experiments during these years to try to find out what is going on. But so far no result.

Wherever my wife and I have been in the south part of Sweden, we have been able to hear it 24 hours a day. So far about 250 kms from our home. In the car or outside in the middle of a "quite" nowhere. During the night in our or at friends home. Of course even during daytime inside our home when no other sounds mask the Hum.

Our Hum is acoustical some strange way. I can damp it more than 90% by using earmuffs (earprotectors). If I adjust the volume from another loud-speaker with a 76 Hz signal - so I have the same hearing sense in our sleeping room - this signal will be much stronger on the oscilloscope than the Hum. Sounds perhaps crazy, but probable depending on that the Hum comes from all directions and "confuses" the transducer.

The signal from the loud-speaker comes from one source and is easy to pick up depending on its normal longitudinal propagation?!. It must be something like this, because the ear (and its "excellent design") picks up the Hum much easier than any type of microphone.

In the program Earth and Sky, Thursday 28 1996, it was reported that the Hum in Taos is close to E-flat (about 76 Hz). The same frequency as I have measured here in Sweden! I hope you do not mind, but are you quite sure that the Hum you hear has the frequency 40-50 Hz?

The submarine transmitters in Wisc. and Mich. are transmitting on 76Hz which equals "my Hum frequency". I find it hard to understand that there is no connection? It can not be a coincidence?

I am of course interested to find out if we have the same Hum all over the world. I have during January this year sent circuit diagrams of my "Hum-receiver" to other Hummers in UK, Australia and Taos N.M.

55M 2017P

TL084

#1 #2 #3

1.8k 2.4k 2.6k 1M

27µF

10k 10k 10k

100µF

0-60dB in 7 steps (setting 30-40dB)

1) 10" speaker (woofer) in 30 l: s cabinet or suitable alternative.

Battery supply ±9V

47µF 47µF 47µF 47µF

All resistors metallic film in Kohm.

C = 0.1µF (selected)

2) To improve S/N ratio. The 55M 2017P has too high noise, independent of the gain. A = 20dB

F = 91dB, F₀ = 76 Hz, Q_t = 7.9, B_w = 9.6 Hz

F₀ = 1 / (2 * π * C * √(R₁ * R₂)) = 76 (≈ E-flat)

F = R₂ / (2 * R₁) = 32.5

B_w = 1 / (π * R₂ * C) = 18.8

Q = π * R₂ * C * F₀ = 4.03

Q_t = 1.96 * Q (for 3 filters)

B_w = 451 * B -11-

1. To oscilloscope or Level meter.

2. To headphone-amplifier or tape-recorder.

Woofer as a transducer gives a sensitive "microphone" without any thermal noise.

The filter has too high Q. But with lower Q, problems with interference from mains (50Hz)

Do you have a better solution? Let me know!

Kolmar 96-12-03

Jens Gustafsson

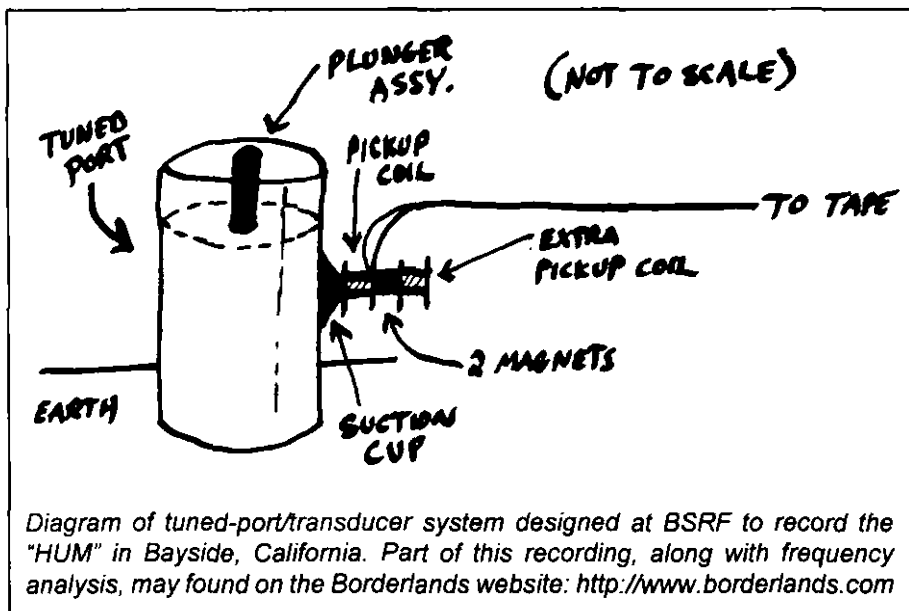
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PELF-receiver OS

Hum-receiver for "quiet nights" in the south part of Sweden. Prod. in Sweden

Rev: X: B

SM7GEI



So it will be interesting to see the result of this. I enclose a circuit diagram of my equipment. I have tried a lot of different transducers, but using a 10" woofer is quite outstanding.

– Lennart Branthle, Kalmar, Sweden

We have been doing similar experiments at BSRF. The "HUM" has actually been recorded locally (Bayside, CA) using a different system which incorporates a tuned bass port and a special transducer. Frequency analysis puts our HUM in about the 20-40 cps range, and we see no 76 Hz at all. Since mid-January, the HUM seems to have disappeared locally, but there have been reports of its ongoing experience in several other locations. Due to these inconsistencies of character (and several others mentioned in Mr. Vassilatos' article) we have to, at this point, assume that the HUM is biodynamic in nature and varies due to interactions with physical and non-physical anomalies specific to the locale. We will continue reporting on this research in future issues of the Journal. – MT

Living Water in America

I enjoyed Dr. Joseph Lancaster's article, in the fourth quarter, 1996, issue of *Borderlands*, on the way in which he is converting sick water into healthy, energetic water. With water stocks being of course constant,

while human numbers increase, pollution is bound to remain a serious problem. Let us hope he can get support from the highest level for his work.

There is one minor quibble I have about the article: Dr. Lancaster writes that 70% of Earth is made up of water. This is not so. He perhaps is referring to the fact that about 70% of the surface of Earth is covered with water, a completely different proposition.

– Don Eldridge, Australia

While we agree that he was probably referring to "surface" waters, there is considerable evidence to indicate that the inside of the earth is teaming with the vital fluid. This "primary" water finds its way to the surface and in many ways replenishes the water sources on the surface. See the book, "New Water for a Thirsty World" (ad on inside cover) for more information. – MT

Keep those letters, photos, and clippings coming! Please write to *Borderlands CQC*, P.O. Box 220, Bayside, California, 95524 USA. Letters may be edited for length and clarity.



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An Introduction to the Mysteries of Ground Radio

by Gerry Vassilatos

GROUND Radio is a subject which has remained on the periphery of engineering discussions for decades. It has maintained its elusive and mysterious poise because of fundamental anomalies observed when its methods are utilized, anomalies which manifest when signals are both transmitted and received directly through the ground. The inability to adequately address the associated anomalies has produced a remarkable impasse among conventional engineers. Many highly qualified such persons are quite sure that the Ground Radio phenomenon is adequately explained through classic theoretical propagation models. Experimental findings however, have brought to our attention several anomalous features of this form of Radio propagation.

Only an extensive and deliberated exploration of Ground Radio will prove our several discoveries in the art. Rudimentary and inexpensive in requirement, experiments with Ground Radio provide an endless source of anomalies. Experimental investigations of these methods may begin with as little equipment as a shortwave receiver, a copper pipe, and a length of wire. The rest remains in the strangely lost art of interpretation. The accurate interpretation of the findings derived through such experimentation requires familiarity with the pertinent bibliography. We hope that the reader is encouraged to duplicate and surpass these methods, as those who do so will not be without their due reward. The discovery of new and unfamiliar phenomena can be yours...when you take the first step.

TELLURIC CURRENTS

The metaphysical earth currents were both observed and described in great detail by Fr. Athanasius Kircher. His writings preserve an ancient knowledge which concerned itself wholly with the vitality of the earth. The metaphysical telluric currents were known to permeate the world, the energies which mediating vitality.

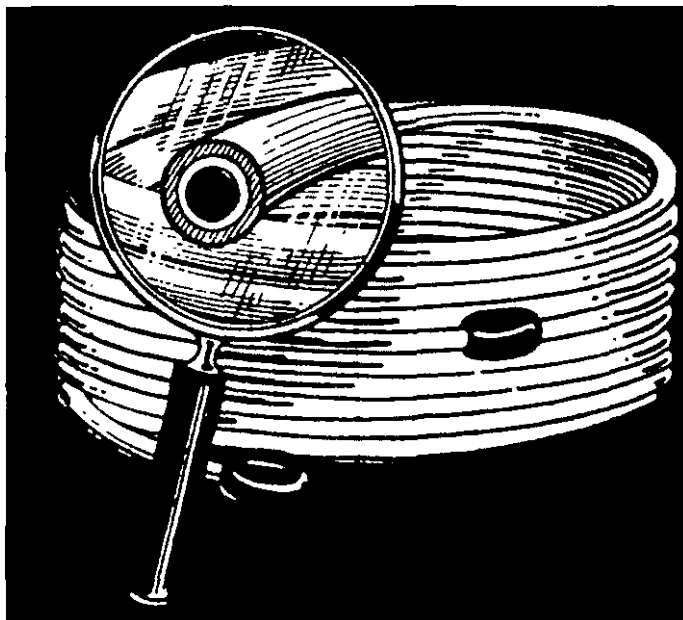
Maps of telluric currents were the prized possessions of geomancers, permitting the knowledge of vitality control on earth. It is said that wars were fought by the selective elimination or exaltation of specific veinworks in the telluric circulatory system. The science of Geomancy thus formed the mysterious historical backdrop against which a wide variety of natural observations were subsequently made.

With time, the experiential appreciation for the metaphysical earth energies was systematically lost. The more qualified scientific observers replaced their sensitive experience of telluric energies with a merely superficial observation of geoelectric currents. This

schism has provoked the controversial thesis upon which our present discussion is therefore based. While some will be defiantly confident that experiential telluric energies are resolved into geoelectrical currents, we remain just as adamant in our absolute conviction that the experiential telluric energies precede and define the observed geoelectric patterns. This schism has not, and will never be resolved. So long as there are those who insist on observing the superficialities of natural phenomenon, completely obsessed with the kinematics of otherwise experience-filled phenomena, there will be a scientific conflict.

The filtration of highly selected portions of natural phenomena characterizes contemporary quantitative science. Until the scientific community becomes willing to admit the greater part of their experience, all considerations of natural phenomena will remain for them a blank wall of intensities and numerical values. Ancient Science connected its pursuits with an experience, one gained through direct physiological contact with the telluric currents themselves. It is in the active contact with these ground-derived currents alone that we recognize the true and fundamental continuum in which our world is set, an expansive experience by which we access and learn the ancient arcanum.

The discovery that various signal species could be both transmit-



ted and received directly through grounded terminals, forms the fascinating subject matter of a largely forgotten historical record. In this regards, we find a technical bibliography replete with remarkable instances of early successful experimentation in the art of drawing power and signals directly from the ground. Completely ignoring the fact that a large bibliography of anomalies had been compiled by research predecessors, engineers of the time developed communications systems which relied entirely on electrical currents. As a carrier of code and voice, electricity was "reliable". But with increasing engineering emphasis on electricity and electrical technology, the subject of geomantic energies was driven into forgetfulness. Thereafter, those who confused geomantic energy with electrostatic effects were the cause of the numerous controversies by which Late Victorian Science is characterized; endless confusions in terms and identifications.

When the subject of long-distance communications was compelled to shift thematic emphasis away from the vitalistic foundations, it lost touch with an energy which did not cease exerting strong influences on the developing electrical technology of the time period. Only a few, now legendary researchers, continued the geomantic tradition. From the very first moment in which ground connections were established in a telegraphic signalling line, inventors and operators of electrical systems noticed anomalous energetic behaviors in the ground. The very first attempts at long distance telegraphy involved the burial of highly insulated double lines (Morse and Vail). Upon first closure of the telegraph key, the signalling components became so thoroughly suffused with charge that the exchange of signals became an impossibility.

In truth, the art of wired and wireless communication began in a reawakened appreciation of geomancy and geomantic energies. This remarkable reminder came about with the replacement of the original 2-wire telegraph line (Reusser, 1794) by the 1-wire method (Aldini, 1803), the latter requiring far less wire and several ground plate terminations. The telegraph stations of Morse used grounded plates, a means by which engineers imagined the "necessary return current...through the ground". Wired code on a single overhead wire was thus "matched" by an opposed ground return of charge, a condition which fulfilled the prevalent model of electrical closure.

GEOMANTIC INCURSIVES

As none of these researchers actually measured the elusive "ground current", many engaged an imaginative freeplay in the artistic description of the same. Several patent drawings reveal a curiously geomantic flair, the meandering "return currents" flowing over land and stream to their terminals. Here we find remarkable evidence that these inventors were in fact engaging in a form of geomantic vision, describing an entirely different and more agile energy species than electrical current (Farmer, Ader, Frow). Toward the peak successful operation of telegraph and telephone systems, the proper placement of terminal plates was an absolute requirement. As this art demanded special ability, the first telegraph linesmen used the methods familiar to dowsers. The very placement of ground plates, poles, and junction boxes was, for these linesmen, completely predicated on the strong presence of upwelling energies from the earth. Empirical evidence proved these methods superior to "resistance surveying" in the placement of station plates and other components.

Telegraph lines so constructed were possessed of a noumenous and suffusive quality. Natural geomancers had provided the means. Here was evidence that another energetic stratum was governing the development and limiting the establishment of long-distance electrical communications systems. The subjective experience of linesmen was ample indication that such a mysterious energy stratum was indeed present and active. Thus, the invasive energy demonstrated its ability to enforce certain restrictions on the establishment and operation of Telegraphy and Telephonic systems. The communications technology, which engineers imagined to be completely independent of natural agency, was being subverted by an everpresent geomantic influence.

Besides the obvious geomantic incursions, those which influenced the decisions of workmen and designers, the energetic presence made itself known in several other ways. Power literally appeared "from the ground" in many stations, a condition which Alfred Vail reported (1839). He found it necessary to progressively remove batteries from the first long-distance telegraph line, reporting this remarkable manifestation of energy to his elder partner, Samuel Morse. Lines operated on an energy which exceeded the battery supply, and ground-connective communications systems were especially prone to bizarre energy manifestations.

Hoping to save the finance of excessive wire line, many telegraph systems implemented the discovery that code could easily "pass through water". To this end, engineers experimented with the use of widely separated groundplates, a means which proved strangely successful. Experiments with ground-conduction established telegraphic contact through an isthmus (Morse, 1842), through streams (Vail, 1843), wide rivers (Lindsay, 1843), canals (Highton, 1852), across a bay (Meucci, 1846), through the earth (Stubblefield, 1872), and between distant islands (Preece, 1880). An accidental discovery proved that one longline system continued operating with great strength of signal, despite the fact that the line had been literally broken in several places. The realization that code signals could actually enter and traverse the ground for several hundred yards, and then reenter a grounded line, triggered a new revolution.

Thereafter, combined wired and wireless links formed the greater portion of telegraph exchanges across the miles of North American countryside. Ground plates launched code signals into predetermined land tracts and waterways, signals being conveyed along specific subterranean routes. Signals passed "into and through the ground" to each next ground plate of a series. When reentering the next groundplate, signals continued through the overhead lines to their appointed destinations. Stations received very strong signals in this method, signals with great clarity and force. Here were the early beginnings of the conduction wireless methods, and relied on the mysterious nature of ground conduction and ground energy for their successful operation.

It was clear to linesmen and operators that the signal energy could not possibly be maintained over such long ground and water conduction paths without amplification. Some external agency was somehow augmenting and modifying the applied signal impulses. The anomalous functioning of these largescale regional signalling systems proved again that the geomantic agency was literally wending its way through the line networks. Not every such line operated in this manner, the geomantic currents selecting very specific paths for its operation. This topographic selectivity hailed

attention back to the maps once treasured by geomancers. The augmentation of applied electrical energy was obvious. These specially placed telegraph and telephone lines operated for years without batteries at all. Station operators took this phenomenon for granted. Despite the "long dead and corroded Edison Cells", telegraph station operators continued the powerful exchange of "fat blue and sparking" signals for decades (Lehr).

Other researchers corroborated the fact that usable amounts of current could actually be derived from the ground, currents whose powerful displays permitted the elimination of battery cups and generators. The failure of all reductive electrical models to satisfactorily address these energetic characteristics became especially evident with the development of the "earth batteries", an outgrowth of these telegraphic observations (Bain, 1849). These simple material composites, made to be buried in earth, produced currents not explained through electrolytic action. Small buried earth batteries developed sufficient power to charge storage batteries. They were also employed to provide telegraphic (Bryan, Cerpoux, Dieckmann, Jacques, Bear), and later telephonic systems (Stubblefield, Strong, Brown, Tomkins, Lockwood) with uninterrupted operating power. Neither decomposing nor failing with months of buried use, the mysterious earth batteries contain an essential mystery which electrodynamic models cannot adequately explain.

Those who doubt these facts may attempt the simplest of experiments. Place two identical copper rods into the ground however distant your skepticism demands. The ground can be dry. Connect a galvanometer to each rod by means of thin wire. An anomalous positive reading results. This simple fact illustrates the concepts taught by Nathan Stubblefield, who stated that earth batteries do not generate electricity: they intercept and receive ground flowing telluric currents. If you wish to find strong telluric currents by this means, place one of your two ground rods into a tree root. The galvanometer should be wired close to this base. The other rod is wired and can be placed in sequentially different spots. Readings can literally "pin" the meter, holding it there for weeks.

Telluric incursions continued to "interrupt" all electrical communications methods which employed the ground as a medium of exchange. These incursions revealed aspects of the geomantic nature as each new technology was connected to the ground. The mere appearance of additional power was greatly outperformed when, just prior to the advent of Telephony, a shortlived revolution

swept the Telegraphic World. Certain telegraph companies replaced all of their electromagnetic systems with the Chemical, or "Automatic Telegraph" of Alexander Bain (1849). The Chemical Telegraph regime utilized the electrosensitivity of special chemical papers to register incoming signals. Code impulses made their dark blue marks on the rolling strip of sensitive paper, the task of decoding having thus been made "automatic". Because of the low power requirements typical to their method, the Automatic Telegraph lines were successfully operated across much greater distances than their electromagnetic counterparts.

From the very first, some such Chemical Telegraph systems operated on ground power alone. Not only did these systems produce strong signal markings in complete absence of batteries, but partly coherent signals spontaneously appeared in absence of operators as well! The mystifying appearance of fragmentary sentences and geometric patterns

was continually observed in idle Chemical Telegraph receivers, a phenomenon which has been discussed in a former treatise (Vril Compendium Vol. 3). Perceptive investigators clearly perceived that incursions of geomantic energy were dynamically modifying and augmenting every ground application of electrical energy. Such anomalous energy manifestations, which often revealed a perplexing time-periodicity, found no plausible explanation among the theoreticians.

With the introduction of Telephony, the use of simple buried terminal plates was soon replaced by a great number of special articulate ground components. Again requiring geomantic sensitivity for their proper ground placement and orientation, these remarkable interleaved and multivented forms literally launched and received signals along selec-

tive topographic directions (Taylor and Muirhead, Lugo, Smith). Besides those anomalous power observations in telegraphic and telephonic systems, anomalous observations were noted with the development of wireless communications. The relevant bibliography is filled with instances of geomantic power incursions in wireless systems. These incursions, clearly understood by early wireless pioneers as effects of the earth connection, made their impact on the engineering community.

GROUNDWAVE RADIO

The late part of the Nineteenth Century was a rich and productive time for the empirical researchers, those who explored the deep



mysteries of ground conduction radio. Such investigation produced a new world of possibilities in the Wireless Arts. Experimenters found distinctive differences when varieties of geometric shapes were simply buried, a series of discoveries having no satisfactory conventional explanation. A great many highly specialized ground "antennas" were developed and patented during this time period, a technology which provoked both disbelief and criticism on numerous counts.

The very first vocal radio broadcast was engaged by Nathan B. Stubblefield (1872). Mr. Stubblefield employed special "earth cells" and long iron rods to transmit strong vocal signals "with great clarity". These signals traversed a mile or more of ground, a coordinated conduction wireless system providing telephone service for a hardworking farm community. The Stubblefield Radio Method represents an essential technological mystery. His "earth cells" never wore out, never produced heat in their telephonic components, and provided "signal ready" power at any given instant of the day. Being neither activated or assisted by additional battery power, the system was fully operational around the clock.

Later critics attempted the reduction of the Stubblefield Radio System to mere "subsoil conduction" mode of transmission, but remain completely unable to reproduce the performance to this day. Mr. Stubblefield repeatedly stated confidence in the fact that his Radio System was performing an act of modulation, not a transmission of signal power. The preexisting "electrical waves in the earth", he firmly stated, were the real energy carriers for his Wireless Telephone Exchange. The special "earth cells" were connective terminals, not power antennas; a means by which direct connection with the geomantic energy stratum was obtained.

In an entirely different regime of exploration, a regime having nothing whatsoever to do with waveradio energies, Dr. Nikola Tesla directed the construction of a massive radiating structure on the northshore of Long Island. His previous years of experience taught him the secrets concerning radiant energy and its effective propagation through the air and space (1892 to 1900). Understanding the means by which radiant energy may be more effectively beamed down through the ground, Dr. Tesla established the magnificent Wardencllyffe Station (1901). Tesla intended Wardencllyffe to be the first of a series, stations for the subterranean beam transmission of radiant energy. Propagation of very large diameter radiant energy beams had been found more

effective for given power purposes, when conducted through solid rock. Tesla found that the earth was transparent to these penetrating straightline beams, and planned the use of deeply imbedded ground terminals in order to direct and launch his special radiant energy.

Dr. Tesla took special pains to establish the extensive underground conducting system in order "to get a grip of the earth". This most complex construction operation, necessarily executed long before the great tower was erected, took place below the Power Broadcast Station. Tesla stated that this was the most difficult part of his construction operation at Wardencllyffe, the drilling of long iron pipes having first been driven down to more than 300 feet into the foundation rock. At a depth of 120 feet, Tesla excavated several radiating shafts, long hallways whose internal walls were covered



with pitch and surrounded with iron pipeworks. These shafts extended outward at this horizontal depth for several hundred feet in all directions, a formidable ground projector. Beneath the central chambers of this Magnifying Transmitter, the deeply embedded terminals actually formed the primary beaming structure; a bizarre conception which was literally rediscovered in legal documents provided by Mr. Leland Anderson, and has since been experimentally verified by Eric Dollard.

Fr. Josef Murgas (1906) produced a remarkable series of articulated monopole terminals. These coaxial coil monopoles were deeply drilled pipes, filled with mineral oil and activated by radioimpulses. With these designs, Fr. Murgas exchanged extremely powerful and static-free signals to great distances with very little applied power. The later proliferation of ground aerial designs included double grounded arches (Tesla, Collins, Ducretet, Musits, Pickard), underwater and underground coils

(Jones), underground loops (Beakes), "bent-L" inversions (Appleby, Knoll), and underground channel-loops (Hanson). Of these buried ground systems, none were as prolific as those developed by James Harris Rogers (1913). Most properly categorized as buried dipoles, Rogers antennas rested across the subsurface horizon of the ground, and were relatively easy to establish.

Desirous of creating VLF and ELF transmission sites for ocean-going surface and submerged fleet vessels, ground antenna designers attracted the attentions of the NRL and other military research laboratories. In the effort to establish failsafe communications between command centers and distant fleet, ground surface, or

submerged forces, military engineers explored both Rogers buried antennas and Murgas drilled monopoles. To the thrift-minded military engineers, the buried Rogers Antennas were more accessible than the more effective and world permeating Murgas designs. Placed into long plowed furrows, the various Rogers antennas provided clarified signals. Compared with the large overhead aerials of other designers, Rogers buried antennas performed in a remarkably constant and dependable manner. Producing strong signals, of both greatly depressed static and equivalent reduced distortion levels, the Rogers designs were prized by Naval Radio engineers.

Rogers buried antennas were buried dipoles, a method application to an old design. Because the Rogers Antenna series were buried dipoles, their performance theoretically completely depended upon their compass orientations. The polarization of transmitted or received signals necessitated that Rogers Antennas be properly placed in the ground with respect to compass bearings, a restriction nonexistent with the superior Murgas Monopoles. But Rogers Antennas were admirably suited to the developing Naval Radio hardware. Driven by sinewave generators, rather than Teslian aether pulses, the Rogers designs operated in the Hertzian wave mode adequately enough to win military support. Few military experts bothered to recall that these designs were all purloined from

directly from the Tesla patents, a fact which the genteel Tesla never bothered to cite.

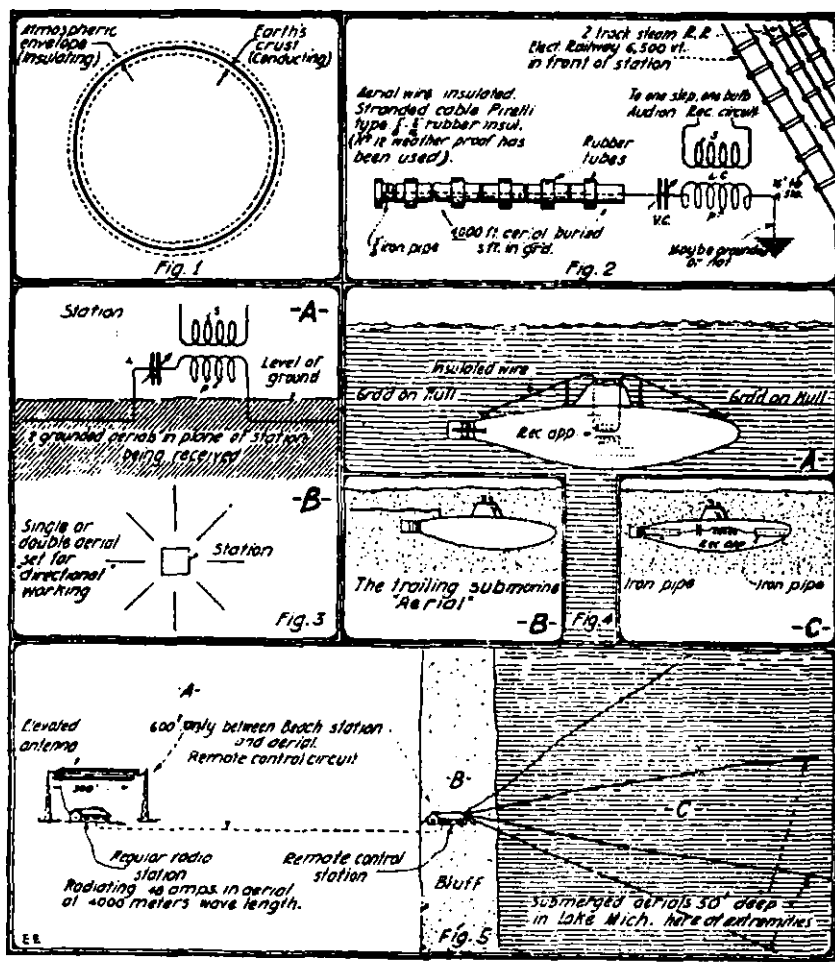
Periodically classified and declassified, the Rogers designs and their modifications have formed the core of the military VLF and ELF communications arsenal. But most of the researchers instinctively sought out those monopoles which Fr. Murgas developed, and which the military had overlooked. Throughout the early part of the Twentieth Century, a great variety of ground antennas made their sudden appearance in the commercial radio market. Experimenters everywhere were discovering that different shapes and materials were capable of providing extraordinarily strong radio transmissions and receptions when simply buried.

GROUND TERMINALS

Attempts of devising newer and more effective ground antenna designs provoked several intriguing explorations. The most amazing discoveries included those made with relatively small buried metal forms. Radio rules changed completely when buried antenna were employed, the complete elimination of Hertzian dimension restrictions being the first observation. Unlike their aerial counterparts, buried terminals were not bound by those exacting requirements of wavelength. One did not require lateral dimensions equal to the normal shortwave aerial yardage, the first feature recognized by radio amateurs.

It was indeed during this time period that the customary use of old iron radiators and large metal bedsprings, scrap metal surplus, became an experimental vogue with radio amateurs. These buried, highly articulated iron forms, provided powerful evidence that the ground antenna principle actually worked. In the classic models, the burial of any aerial structure represented immersion in a conductive medium. The burial of conductors in the ground was viewed as reduction to a uniform, neutral electrical gradient. This condition sufficiently neutralized all of the geometric differences within an isoelectric horizon. Electrodynamics theory stated that any buried metal composite, however "variegated" or "articulated" in form, would simply behave as a "lumped" resistance.

While the use of variegated antennas posed no threat to the existing paradigm, academicians considered the concept of buried variegated antennas a theoretical impossibility. Indeed, those who examined ground aerial patents found completely problematic the notion that highly variegated geometric structures could demonstrate differing degrees of transmissive or receptive advantage. Electrical engineers insisted that the net surface areas of these buried "articulate" forms alone determined their resultant excessive performance. In this consideration, material composition did not matter. Conductivity was the prime factor. Differing only in their various surface areas, the only theoretical differences among buried geometries, in addition to those of mere surface area, were thought to be factors of electrolytic corrosion. The



Various Arrangements of the Rogers Ground Aerial System, Including the Submarine "Under-water" Antenna.

more pitted the ground contact surface, the more likely a buried object would become better conductive to signals. The microsufficial increase of surface contact through corrosive pitting was called to explain the "additional gain".

Since the electrical merits of buried materials were supposedly the simple result of surface area and the effectively moved electrical volume, the result of this inherent surface area, no special discovery was acknowledged among the authorities. But empirical determinations proved that different geometric shapes and (more unbelievably) different material composites, actually did effect an enhanced "launching" of radiosignals far in excess of their calculated surface area. Solid plates of calculated equivalent surface did not perform as magnificently as the buried radiators or bedsprings.

he articulated exposure for potential conduction increasing to or from the surrounding ground.

But empirical research consistently overturned each of the theoretical contentions, proving by incontestable demonstration the superior signalling characteristics of articulate ground terminals. Anomalous signal strengths were both transmitted from and received through ground transmitting systems far in excess of intensities or topographic distances declared possible by theory. This was particularly true when the ground transmitting antennas were powered by spark-generated, asymmetric impulse currents. Signals were somehow being "collimated and constricted" within the ground proper. This constrictive action did not explain all of the observed signal intensities. Evidence had again suggested that the ground was "leaking" a non-electrical component up into both the electrical systems and their emerging signals.

In fact, several widely advertised and highly successful designs included the "Yale Ground Hog", the "Subtenna", the "Aerolimator", and the "Subaerial". These few representatives demonstrated the superiority of ground antennas, a validity which literally emptied the stock rooms of each ground antenna distributor. Dr. F. L. Satterlee, an X-Ray specialist, developed several "tuned ground" radio receivers. Implemented by The Moon Radio Company, these radiosets placed their performance boasts on a remarkable "antenna-free" operation. The principle advantage of these ground antennas was their static-eliminating nature. The ease of their installation and maintenance combined great signalling efficiency. Several of the commercial units needed only to be connected with a cold water pipe, their powerful and "static-free" reception being unequalled by the more conventional "aerial receivers". Additionally, waveradio receivers produced by The Moon Radio Company operated during normally impossible meteorological and geophysical conditions; a condition well described

Amazing New Ground Antenna



Gets Far-away Stations Loud and Clear Regardless of Static Conditions

Radio Engineers and hundreds of users report that Aer-O-Limator, the sensational new Ground Antenna, gets better long distance reception, almost unbelievable freedom from static and outside noises, far greater selectivity and marvelously clear and sweet tone quality.

Says "Cuts Out Static"

R. Curtis of Ill., says, "There's no such thing as static trouble since I got my Aer-O-Limator. I get stations I never got before - so loud and clear I would almost swear they were in the next room." In addition you are free from troublesome overhead aerials that everyone now knows are static-gatherers. Aer-O-Limator (Ground Antenna) is simple and easy to install. Takes but a few minutes.

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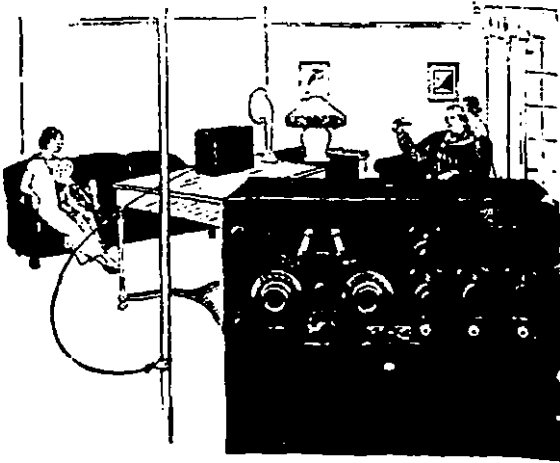
Name:
Address:
City:
State:

by Nikola Tesla. A great many inventors continued producing truly amazing diversity in the "ground antenna" format. Throughout this time of amazing and anomalous discoveries, the empirical method led the way.

NATURAL AMPLIFIER

It had been clearly observed by a number of experimenters that the environment exerted strong and dynamic action on transmitter signals. It was long known that this mysterious energy species could actively charge ground-connected radio systems in absence of applied power, the early experiments of Loomis having established this principle (1862). This agency was very obviously possessed of an inherently superior articulate nature, being able to distinguish and energize buried material composites and varied geometric forms. In addition, the energetic ground agency seemed able to selectively seek out, constrict into, and intensify the incoming signal power of distant stations. There were obviously other influences which determined the nature of ground-traversing signals.

Experimenters realized that these effects differed with both the methods used in obtaining the spark energy, the manner in which disturbances were launched into the environment, the grounds into which signals were launched, and the specific directions along which they were launched. The spark applications of small experi-



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—RADIO—

mental radiotransmitters produced signals of unexpected large volume at great distances, empirical evidence of an unexplained signal "amplifier" in the natural environment (Appleton and Barnett). VLF amplification effects had been empirically recognized among radio engineers on both sides of the Atlantic. In fact, the very first historical Transatlantic Signals of Marconi were problematic from every engineering standpoint. The calculated losses, theoretically expected of these signals, were far too great to account for his first claimed successes (1901). This was a fact which provoked many to doubt and criticize Marconi's claims in the venture. Later repeatable demonstrations of the VLF amplification effect evoked few suggested explanations from the engineering community.

The concept that signals could acquire additional energy from an unacknowledged geomantic source was not readily received by the academic community. Some experimenters initiated dialogue on the possible gain of signals which had traversed the geomagnetic field (Prentice). These gains were not the simple result of "standing waves", nor the result of Hall Effect intensifications provoked by launching signals across the geomagnetic field. The perplexing effect was noted across the entire radiofrequency spectrum, from VLF radiotelegraphic to shortwave radiotelephone services. Unlike the identical phenomena which took place in wired telegraph and telephone lines, these effects were taking place in complete absence of wire. But what dynamic agency was literally magnifying each relatively small initial signal?

With the installation of multiple Marconi Transatlantic Stations, it quickly became known that transoceanic VLF magnification phenomena were only obtained when signals were launched along highly specific "launch paths". Conformity with these "launch paths" produced undistorted signals of unexpected great power and presence. VLF signals which were not applied to the special launchpaths, were simply lost in transit. The Marconi World Radio Circuit relied these very obvious environmental controls, but it was quite impossible for engineers to follow the exact pathways of these suboceanic signals. It was first thought that the phenomenon had much to do with the submarine ground itself. By assuming the existence of special highly conductive marine geostrata, it was imagined that a simple geological survey could codify the selection of Marconi Station sites.

But no such geological formula or pattern was ever found, to the great consternation of engineers and theoreticians alike. Directed along identical suboceanic geostrata, the very same VLF signals encountered unexpected and unexplained high signal resistivity; a frightful realization for those whose labor was expended in the building of several Marconi Stations. What was the strange "absorptive potential" by which a launched signal could simply be drawn across a specific launchpath? If not in the material strata of submarine geology, where then was this mysterious "absorptive potential" contained?

Several sites were quietly abandoned by the Marconi Company, the matter being privately considered for very obvious business reasons. The prospect of statistical failure in the "scientific" selection of VLF launchpaths displeased Marconi greatly. The use of dowsing methods would be very "bad for business" if the fact became known to the scientific community at large. These factors eventually drove Marconi deeper into a study of shortwave aerial phenomena. Other radio station engineers found it necessary to select station sites

through "alternative" or "geomantic" means. This renewed awareness of geomantic energy, as well as the role of special points and pathways in effecting long distance communications, provoked a hostile and derisive reaction among conventional engineers.

SHORTWAVES

The advent of shortwave radio systems however, produced intriguing anomalies, which found neither immediate theoretical models nor solutions. Unable to account for the divergent signal strengths noted between separate aerial or ground contacts, fact-finding empirical research was again engaged. The models which theoreticians developed postulated that a loosely linked "skywave" and "groundwave" were responsible for the anomalous reception effects. In this analysis of waveradio transmitters, a conduction wavesignal "through the ground" was selectively either neutralized or intensified by an aerial signal "through the sky" (Breit and Tuve).

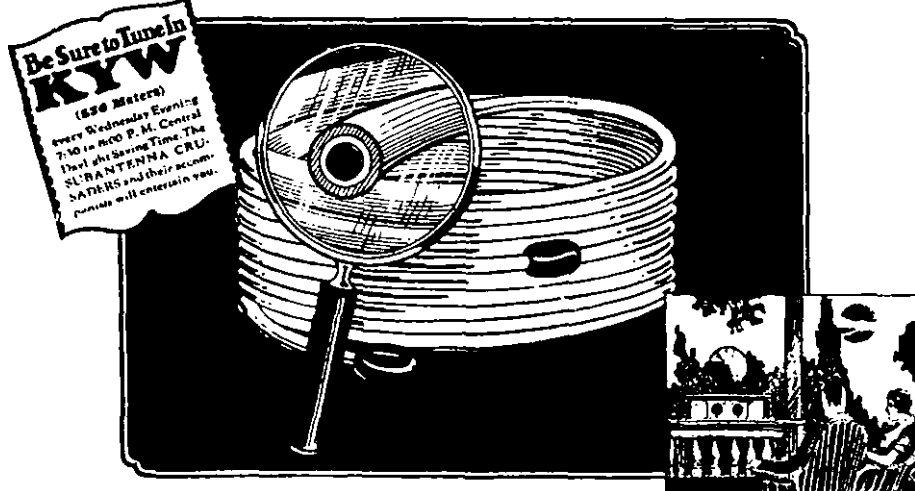
With the newly discovered ionized atmospheric layer neatly providing "skipping" reflectivity for transmissions, the model was complete. Accordingly, the proper phasing of skipped skywaves and groundwaves produced resultant signals of unusual strength. Improper phasing produced received signals were weak or even absent. It was then easy to comprehend the varying nature of shortwave signals whenever encountered. One could find reasonable explanation for variable signal strengths throughout the day, month, and year. "Skipping" skywaves met with continuous groundwaves to produce all of the observed signal receptions. Phase shifting explained all of these variations. Or did it?

The use of very long, close-ground antennas was early implemented by those who sought the development of special aerial-ground hybrid antennas. The "double ground" aerial employed an elevated line with grounded ends. This format was limited by its orientation requirements, often acting as an excellent directional detector of distant stations. Extremely low aeriels were developed and used in 1911 (Kiebitz), often extending to nearly 1000 feet in length and being poised to within a yard of ground level. In 1918, a similar system (A. Hall) placed 2700 feet of insulated cable along the ground surface, and claimed excellent reception characteristics.

The famed "Beverage Antenna" (patent 1,381,089), was the result of experiments with several thousand straight feet of wiring on

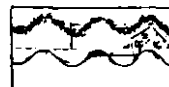
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Gets Distant Stations Clear and Loud-- Summer and Winter--Right thru Static



NOW—you can get "distance" in summertime. Loud, clean, clear distance, sweet and true in tone—almost like local. The marvelous new device illustrated above makes this possible. STATIC is no longer a nuisance.

Engineers have long known that the ratio of static strength to signal strength IN THE AIR, favored Static, but that in the GROUND, the ratio of static strength to signal strength favored the music you wish to hear. They knew that if some device could be perfected whereby broadcast waves could be taken out of the GROUND instead of from the air, that all-year-round distant reception would become a reality. SUBANTENNA is the answer. It completely does away with the old style aerial—their aerial; it picks up clear, filtered waves from the ground—it delivers a strong signal; waves so powerful that the tiny amount of weak ground static they carry is drowned out. The performance of SUBANTENNA is nothing short of marvelous. It will amaze you—just as it has amazed laboratories and thousands of critical fans.

User Says "Static Is No More"
"I have removed the Subantenna. My grandson installed it. STATIC IS NO MORE. Am well satisfied. I can tune in stations I never could hear out of the air even though I had a long aerial."—A. E. P., Kam.

User Says "Greater Distance"
"To show you that I received a program from Station PWX in Havana, Cuba, I enclose herewith a verification card from that station. On January 28th, I received a program on my set broadcasted from Havana, Cuba, South America at 10:15 in the evening. Many other long-distance stations have been heard on my set after installing the Subantenna. I never could receive such distance on my outside antenna."—W. C. F., Chicago, Ill.

User Says "Gets More Stations"
"I get plenty of stations with my Subantenna, on the loud speaker that I have never been able to reach with my outside aerial. It also cuts down interference in the maximum, cuts static out too—not just partly out—but all out."—H. S. M., N. Car.

User Says "Cuts Out Interference"
"Have had Subantenna some months and it beats any antenna I have ever had by forty miles. Have a five tube set and get New York City, Atlantic City, Atlanta, New Orleans, Fort Worth, Denver perfectly clear, and not to an elevated tower with much interference. Cuts it all out."—C. H. Y., Chicago.

User Says "More Volume"
"We have been receiving stations that formerly did not register on the outside antenna. A marked increase in volume on stations over 800 kilocycles has been noted."—Capt. F. W. P., Md.

Eliminates Lightning Risk
Not only does SUBANTENNA make possible loud, clear D.K. in summer—but only does the remarkable invention better the selectivity of any set—but it also completely eliminates the lightning hazard. With SUBANTENNA one can go right on listening in dur-

ing the most severe electrical storm without noise, fear of attracting lightning or damaging the set.

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Make This Convincing Test
Install SUBANTENNA. Leave your old aerial up. Select a bad night when DX is almost impossible with the ordinary aerial. Make a comparison station for station, comparing first your aerial, then SUBANTENNA. If, from stations that are just a mass of jumbled noise with the old aerial, you don't get reception that stays loud in summertime and clearly the instant you switch to SUBANTENNA, the test won't cost you even a single penny. Obtain a SUBANTENNA from your dealer or send coupon at once for complete explanation of SUBANTENNA and for particulars of GUARANTEE and FREE TRIAL OFFER. Send COUPON NOW!

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Tell me all about SUBANTENNA, your unconditional, unconditional guarantee and your FREE TRIAL OFFER.

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tall insulating posts, a design which attracted the fortune-aimed attentions of RCA. Wishing to break the existing market on special beam aeriels, this design formed the means by which Marconi monopolies on the "bent-L" aeriels were broken. The receptive clarity of this design increased with proximity to ground. RCA could not infringe on the Rogers designs, or those of others, whose buried ground antennas produced better signal strength.

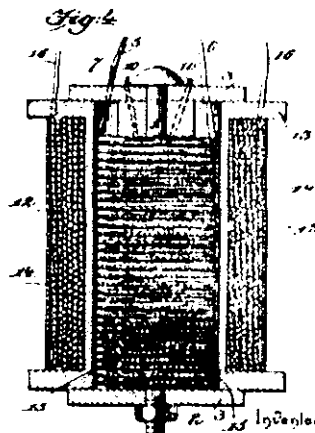
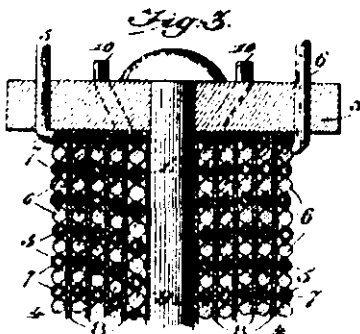
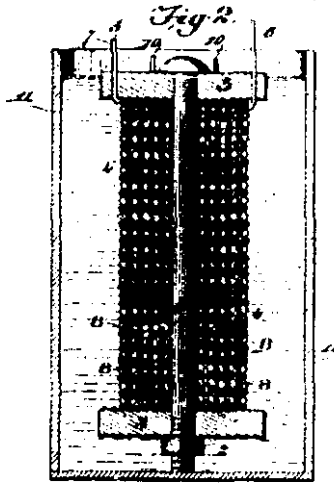
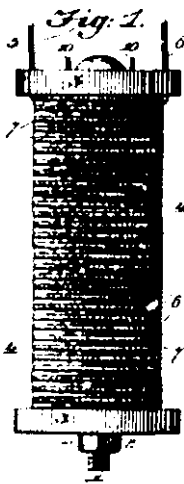
These horizon-hugging aeriels provoked controversy because of their supposed necessary "management" of a mixed sky and ground wave complex. Experiment proved that increasing elevations of the Beverage Antenna resulted in a pure and noisy skywave signal, with

(No Model.)

N. B. STUBBLEFIELD.
ELECTRICAL BATTERY.

No. 600,457.

Patented Mar. 8, 1898.



Witnesses

H. S. Dieterich
J. P. Schmitt

By *H. S. Dieterich*
Attorneys.

Nathan B. Stubblefield

Caenover

the greatest signal intensities being derived with the line placed as close to ground surface as possible. In some cases, these ground-parallel aerials were poised on insulators 12 foot or less for best effect. Being the design which represents the theoretical midpoint, between the buried Rogers dipole and the Marconi "bent-L", the Beverage Antenna reveals that ground currents and ground signals are indeed distinct in origin and species. These results helped to convince many that the proposed "nearzone-farzone" radio principles were absolutely mistaken. In fact, a special theory was developed to "explain" the superior operation of the Beverage Aerial. [All of these patents and articles are found in Vril Compendium Volumes 9 and 10].

A great many popular radio magazine articles were devoted to the unusual reception of signals through the ground alone (Volume 8, Vril Compendium). To the amateur experimenters of the time, it

was all too apparent that the theoretical assessments lacked reality. Those who studied radio propagation phenomena for military applications could not account for the fact that far too powerful ground signals continued with increasing range from their sourcepoint. By comparison, their aerial signal counterparts were far too weakened by the journey. Experimenters found that the "skywave-groundwave" model did not explain the continued magnification of signals "received through the ground". When compared to signals "received through the air", the ground signals were persistently more powerful, and far less eroded by static.

Of the many energetic interactions occurring in and among spark discharges, Hertz chose but two for analysis (1887). Convention has agreeably restricted its considerations to the same, affirming that only two fields of influence make themselves manifest at close distances from a spark. The induction field, and the "radiowave field". Induction field effects rapidly fall away with the inverse square of distance from a spark center. The "true radio energy" is that wave energy which loses intensity with the inverse distance from a spark center. This difference of intensity with distance from the spark center defines the radiofield. Radio texts described the "nearzone" (induction field) and the "farzone" (radiofield). Patent examiners used this model to eliminate all but the Marconi claims for wireless transmission of signals, a tragic reduction. Far more important demonstrations proved the superiority of geomantic radio principles. Certain highly qualified experimenters disagreed with the simplistic Hertzian view, and contradicted the views of a growing mainstream (Stubblefield, Tesla, Massey, Moray).

Some thought that the induction field was the source of the unusual ground signals, the electrostatic influence which induced electron oscillations in the rock immediately beneath transmitter towers. Much improved ground configurations were thought to provide additional power to these relatively weak induction oscillations. Large area copper screens or

grids were pre-buried long before transmitting towers or aerials were erected. These conductive screens extended outward from the central transmitting axis for several hundred yards in some instances. Thus directly applied, ground currents were given enormous impulse, a possible reason for the strong and predominating reception of local stations in neighborhood receivers. Theoretically, these induction sources were incapable of propagating beyond one quarter of a wavelength from their tower centers. Deep VLF ground currents of 10 kilocycles were therefore not to be received beyond 15 kilometers from their source. The transmission of 3 megacycle signals would, according to these expectations, produce ground currents undetected beyond 250 feet from their source.

These "nearzone-farzone" models did not explain the true signal strength received through ground antennas. Why for example, could VLF signals be received from distances much further than

10,000 miles from their aerial gantries? Why were shortwave signals routinely received from distances surpassing 15,000 miles? Nevertheless, the ground antenna made such signal reception possible. One may yet demonstrate these dynamics with rudimentary ground rod antennas, a technique which will shortly be described. The "nearzone-farzone" model does not explain why VLF signals are only received along specific constrictive paths, a mystery which deepens when it is realized that such conductive ground paths are never found along strictly geodesic sections. Field distribution experiments show the meandering nature of VLF signals across regions of ground, a fact which correlates their much-amplified propagation with geomantic current paths.

There were, in addition, several remarkable reversals of these same theoretical expectations. Why, across certain locales, was it impossible to receive the powerful shortwave transmissions of a station some several hundred yards away in plain sight? "Radio blindspots" could not be explained on the basis of earth conductivity or geophysical characteristics alone. These glaring propagation discrepancies posed neither problem nor threat to the empirical researchers, who formulated their own naturally accurate models. The anomalous "blindspots" and "freak transmissions" which the routinely observed, were exceptions to the theoretical models. Such notable and unexplainable instances, while continuing to plague the modelmakers, provoked far too little academic interest (Hollingworth, Quack).

This experimental example offered a most startling clue to the mode of transmission actually responsible for the operation of buried antenna designs. The "skywave-groundwave" model presupposes that a singular radiosource will produce a singular radiating wave, half of the wave propagating through an aerial route, the other half being immersed in ground. Passage through the atmospheric route gathers static signatures and other distortions which are supposedly induced throughout the wavefront. This aerial noise is transferred and distributed throughout the advancing wavefront. Being absolutely tied to its aerial portion, the ground wave of any signal must therefore contain each acquired noise signature. The same holds true when the ground signal acquires static and distortions along its earthen propagation path. Then, the aerial portion receives new static signatures as a coequal distribution from the ground up. But all too many occasions prove the absolute contradiction of this model, and ground antennas provided the incontrovertible evidence.

Buried terminals gave the clearest proof that aerial signals and ground signals were of completely different origin, those of the ground having the most obvious source in a powerful autodynamic matrix. Aerial waves were so obviously dissolved and "digested" in transit from their distant sources, while ground currents often demonstrated anomalous intensification in transit. It was furthermore quite obvious that electrical currents were not responsible for the ground currents beyond the theoretical quarterwave limits. Signals received through the ground were clarified and strong, even when aerial sampling proved that there should be only a static "hiss". Experiments have shown that the sometimes "wavering" behavior of ground received signals are the result of completely different origins, a dynamic response to completely distinct causes.

Added articulate dimensions made their appearance in a regime of improved ground antennas. Some designs employed chemical

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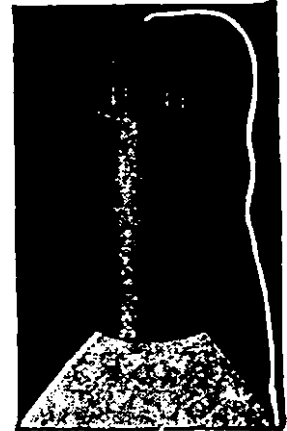
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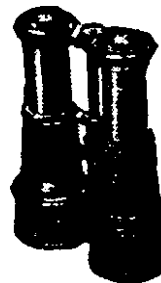
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saturations to produce greatly clarified and intensified signals. The revolutionary approach began as a chemical treatment to existing ground terminals, a treatment giving superior empirical results. Chemically treated terminals brought a complete eradication of static. The chemical of choice for these "treatments" was copper sulfate, the watery solution being liberally poured upon the buried terminal until the soil became a slurry. Allowed to dry out, these terminals displayed their enormously improved outputs. In other such experimental arrangements, copper sulfate solution was placed in a large porous cup. Contact was made with the solution with a metal rod. This design completely eliminated common static and other crackling noises, a significant improvement which also provided new insight into the nature of ground signals themselves.

The performances of chemically treated ground antennas was not well comprehended, it being simply assumed that the earth-permeating solutions projected a conductive horizon beyond the antenna itself. Poured into the ground and allowed to dry in situ, such solutions were thought to extend a wonderfully articulate matrix of "fingerlets" beyond the metallic antenna framework. Crystalline, complex, and replete with dendritic projections, such arrangements became 'woven into the earth'. How did such an underground crystalline complex manage to multiply signal conductivity, while depressing all of the expected levels of static? Ensheathing the metallic framework, the crystallized solution represented a non-conductive envelope. How conductive was the crystallized "matrix" at all? Electrically unresponsive in its dried crystalline form, any such copper sulfate sheath should have blocked the entrance of all purely electrical currents. What carrier was then delivering its obviously improved signals?

This case study was completely corroborated in the simpler instance of an insulator-ensheathed copper rod, where clarified signals of great strength continued to be received in obvious absence of the electrical carriers (Lehr, Theroux). Examples such as these actually challenge common notions concerning the nature of ground signals, obviously not the result of electrical waves at all. When compared with the accompanying aerial signals, a contradiction in theoretical prediction was obtained. Aerial signals would prove to be replete with static signatures. Were the skywave and groundwave each coequals, linked energetic expulsions from a common source, then each should have delivered the identical static events. But the addition of chemical solutions to the ground amplified and clarified the incoming signals, proving that ground signals are of an entirely different class and species of signal...having nothing to do with their aerial mirror-partners. How then did the addition of an electrically non-conductive crystalline matrix actually produce better reception through the ground antenna?

BIODYNAMIC INTERACTION

The exchange between electrical signals and geomantic currents produced remarkable transformations, energy exchanges yet requiring exhaustive study. The manner in which articulate messages actively relate with their electrical carriers is improperly understood. In the biodynamic model, intelligent expressions constrict toward the center core of their carrier streams, becoming a tight thready current. The electrical carrier streams themselves expand away from this central thready core, losing integrity with distance. It was well known that certain geomantically densified regions were

notorious eradicators of electrical signals, the legendary "blindspots" which characterized certain subequatorial districts. In these biologically active zones, where jungle growth was most highly accelerated, radio signals encountered impossible distortions and indefinable interruptive influences.

The significant distinctions of ground-derived currents from electrostatic or electrical currents required analytical methods not willingly engaged by the convention. Nevertheless, the incursions of unknown or forgotten energy strata refused to disappear. These manifestations, which became complicated with electrical applications, made their presence continually known. These pure geomantic currents possessed distinctly biological attributes of catabolic growth. Geomantic energy perpetually overpowered and dissolved every electrical application into the ground (catabolic reaction), while automagnifying its own potential (growth behavior) against the invasive electricity (immune response). In this process, communications signals were very apparently amplified. The bizarre amplifications most occurred when signals traversed regions of high geomantic current densities. This is why so many experimenters observed the topographically determined signal magnifications across specific locales.

In 1904, one experimenter rediscovered that the bioactivity of thriving trees can provide an astounding source of radiosignals, a method referred to as "floraphony". When connected to specific spots on tree trunks, the use of a simple nail probe resulted in the anomalous powerful reception of radiosignals from 18,000 miles distance (Squier). Indeed, the interactive relationship between electrical and geomantic energies has remained singularly mysterious. For those who do not comprehend the fundamental differences and distinctions between the energies involved, only the futile shuffling and reshuffling of the "four forces" remains: an academic card game which, very unfortunately, will never produce a completely satisfying explanation. The associated list of anomalies continues to assert its presence, one which manages to topple the house of cards with every new deal.

The general social lack of sensitivity to bioenergies has contributed to the malaise of the scientific research community, a malaise which motivated Eighteenth Century experimenters to forsake their roots in Vitalism. The unfortunate consequent fixation on the discovery of currents and energetic influences, abnormal to the bionatural environment, has enslaved civilized humanity to an inferior technology, a degenerate mindstate, and a completely irrelevant world model. The interaction between geomantic and electrostatic current is the result of antagonism between two completely opposed species. Geomantic currents are far more powerful in their technological potentials, an energetic foundation which sensitives have long anticipated. The accumulation of phenomena, by which geomantic energies are transformed into the utilitarian needs of our world, are all that is lacking in this regard.

By far not confined to qualitative methods, geomantic energy was quantitatively found to be possessed of biological characteristics not normally attributed to either electrostatic fields or electrical currents. From archane times, geomantic currents were known to flow through the ground in meandering pathways. The geomantic matching of large VLF aeriels became common practice for the launching of signals along the mysterious magnifying paths, paths which meandered and "wandered" across continental topogra-

phies. The veinlike "woivres", formerly identified and mapped by medieval geomancers, were associated with uncertain geophysical associations (Charpentier).

Direct connection with aerial, elemental, and ground-sourced energies produced a wide range of otherwise unexplained effects. These effects were repeatedly reproduced in apparatus requiring only monopolar ground terminals and variable tuning capacitors. The discoveries made by the Chemical Telegraph proved that the ground emergent energy actively organizes the chaos of sensitive emulsions into distinct patterns. These mystifying patterns and hunting fragmentary messages, revealed the literal "dark structure" of the ground, a structure which completely dominated every ground-launched electrical signal. The geomantic structure ruled and governed every wired, ground-wired, or radio signal which electrotechnology had applied to the ground. Signals were shunted, interrupted, magnified, reduced, constricted, redirected, divided, and recombined as each encountered the geomantic structure. The distinctly biological nature of the geomantic structure was thus clearly revealed. *It is the same structure which ancient geomancers saw in the pure mode, a radiant and multicrystalline form which permeates and sustains the geological matter of earth. Fluidic streams form the facets of this black radiant structure, the "geomantic" currents of which we have spoken.*

Explorations of the pure geomantic energies required very simple equipment. Researchers found it possible to extract enormously potent geomantic currents. Employing little more than a grounded rod or plate, and in the complete absence of additional (electrical) energy, geomantic energy was drawn up to the surface and selectively entuned. The grounded instruments used in these wonderful explorations were the simple and familiar diagnostic tools of the telegraphic and telephonic engineers: Wheatstone Bridges, decade resistors, and variable capacitance batteries. The strange and cyclic activation of chemical telegraphs was tested and proven, the results mystifying. When these components were connected to one or more buried plates, the apparatus became strangely charged with a neutral energy. The Patent Archive is pleasantly "interrupted" with the occasional exceptions provided by these research purists, who insisted that geomantic potentials were far more potent and capable than electrical energy.

Those ground-oriented systems, which derive their operative energy directly from articulate environment, have experimentally proven their worth. Reproductions of a great many such devices has produced the surprising success by which we have experienced a personal *Scientific Renaissance*. Geomantic energy is capable of marking sensitive chemical papers and plates (Bain, Edison), of stimulating auric emissions from elements and chemicals (Reichenbach), of marking photographic plates (Dobler), of stimulating plant growth (White), of vivifying otherwise incapacitated patients (Abrams), of impressing and modifying sensitive crystallization processes (Kolisko), is able to seek and reveal deeply buried ore bodies (Drown, Rogers), and is capable of more astounding displays. Its preeminent potentials dwarf those achieved through the use of electrical charge.

Demonstrating a distinct bioaffinity, geomantic currents evidence selective preference for biological matter and for bioorganisms (White, Abrams, Lakhovsky). Possessing articulate "behavior", whose definition exceeds that crude behavior of electrical currents,

geomantic currents are able to selectively seek and locate specific widely distributed tuning targets with complete precision. Non-inertial, and characterized by innate properties which may only be termed "biological", geomantic currents represent an energetic stratum at the most fundamental level. The world foundation. Was it any wonder that ground antennas performed in excess of all the electrodynamic predictions?

RADIONIC GROUND ENTUNEMENT

Discovered during the years when the communications sciences of Telegraphy, Telephony, Conduction Wireless, and Aerial Wireless were being developed, the isolation and implementation of Geomantic Energy has founded the core of a new Science. Having thoroughly accepted the objective existence of Geomantic Currents, the Radionists extended the known list of attributes and potentials germane to these energetic species. Radionists developed instruments, methods, and technologies beyond the expected conventional limits.

Their diagnostic instruments become recognized as "tuners" or "filters" of the geomantic currents. With refined entunement components, the effects became more pronounced and defined. The now familiar use of resistance or capacitance bridges in Radionic Technology has not been significantly changed since the days of telegraph line diagnostic instruments. Considered to be "electrically dead" by other academes, and therefore supposedly incapable of dynamic activity, the diagnostic apparatus of Radionists were derided by those who refused the acceptance of vitalistic energy on conditions of personal prejudice alone. But the natural phenomenon defied the edicts of those who refused to know. Radionically entuned radio receivers became enormously powerful sites into which impossibly distant signals of exceedingly weak intensities simply pour. To experience the numerous phenomena typical for reception through ground antennas is to experience the technically "impossible".

Utilized in a great variety of investigative purposes, the acquisition of geomantic energies was fortunately chronicled in a great number of patents and articles. Radionists discovered that Geomantic energy is neutral, being possessed of an ability to modify and organize chemically chaotic systems (Littlefield, Morley-Martin, Kolisko). Pure geomantic energy articulates and transforms mineral solutions into prebiological organizations (Crosse, Bastian, Reich). The characteristic which draws geomantic currents into bioorganisms has been explored for use as a therapeutic stimulant (White, Drown). Greatly increased vitality is the result of exposures to these ground derived currents, an echoing reminder of truths early discovered by Mesmer and Galvani.

Ground derived energies were used in demonstration of agricultural stimulation (White, Lakhovsky), sensitive medical diagnosis (White, Abrams, Hieronymus), medical therapies (White, Mellon, Drown), anatomical scanning (Drown, DelaWarr), wireless biological communications (Abrams, Hieronymus, Drown), chemical reactivity (Kolisko), power acquisition (Stubblefield, Strong, Brown, Tomkins, Lockwood, Prentice), meteorological modification (Baigorri), remote sensing and surveying (Beasse, Glazewski, Billington, Ash, Rogers, Moray, Maby, Drown), and mineral prospecting (Beasse, Rogers, Drown). Despite these profound discoveries, the widescale acceptance of geomantic energy or geomantic phe-

nomena was methodically shunned and eliminated from the academic dogma.

Despite the vindictive treatment, that displayed in the purgative fury of several national agencies, the legendary Radionists developed a wondrous new technology which yet holds the future survival of humanity. This superlative Radionic Technology, capable of stimulating and engaging the very deepest of human potentials, has neither been glimpsed or considered since Medieval times. In the secrets of Radionic Science are the means by which the very deepest dreams and desires of humanity find technological expression. Implementing pure geomantic energies, Radionic Instrumentalities operate at the very level from which dreams and desires emerge.

With the energies obtained up from the ground, we have discovered a sequence of distinct, irreducible, and articulate attributes, to which both our thoughts and efforts have been continually directed. The all too numerous experiments which Borderland Sciences researchers have conducted remain forever framed in this biodynamic perspective. With each attempt at duplicating the supposed fraudulent claims of our qualitatively inclined predecessors, we continue to rediscover spectacular anomalies. Providing us with a continual stream of scientific epiphanies, we have enjoyed remarkable success. Moving in and among such strange scientific topics, you may also venture among deep roadways untravelled by most. In truth, these deepest of studies prove the existence of a superlative visionary world-reality, one whose thralldom society must again admit.

Coupled with the most elementary of ground antennas, any ordinary shortwave receiver becomes a powerful diagnostic tool. With very simple equipment, one obtains a glowing window on the innermost world processes whose biodynamic activities rule our very being. The diagnostic use of ground radio antennas, has permitted the acquisition of wonderful and mind-elevating secrets. One continually learns the lost details inherent in our throbbing world. The geomantic structure, whose pulsing streams and ebbing tides govern our consciousness, is suddenly revealed through the turn of a radio dial. Unreconciled audio "observations" provide compelling evidence that ours is a world alive, whose meandering flowlines display both emotive reactions and intelligent behavior. Careful interpretation of ground radio phenomena has permitted us to add new details to the evergrowing biodynamic world thesis.

Indeed, with every experiment we have performed, there is a vast and oceanic flood of new facts and equally new associations. It is with these revelations we find ourselves wonderfully occupied. Now comprising a formidable and growing treasury, we recognize that the duplication of such past methodologies well serves our willingness to seek. Ground-connected shortwave receivers are radionic interaction chambers, where pure geomantic power meets with electricity. Employing the receiver components as surreptitious radionic instruments, we have found an astounding sequence of corroborative facts in a singular theme. □

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GERRY VASSILATOS began writing for Borderlands magazine several years ago. He is the producer of the *Ray of Discovery* video documentary series, *Aura Motors*, *Earth Tones* (with Michael Theroux), and is also the author of the *Vril Compendium* (a borderland research encyclopedia which now totals 11 volumes). Recent works include *Secrets of Cold War Technology - Project HAARP and Beyond*, and the new reference work, *Declassified Patents of the Cold War and SDI*. As an avid experimenter, patent researcher, and radio historian, Mr. Vassilatatos has contributed to several advancements in a wide variety of fields of borderland research. Forthcoming books include the biography series entitled, *Lost Science*, and *The Mystery of the Hum*.

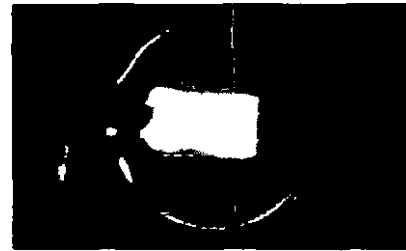


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THE BORDERLAND EXPERIMENTER

EXPERIMENT: GROUND ANTENNAS

BY GERRY VASSILATOS & MICHAEL THEROUX

THE EXPERIMENTS WHICH WILL HERE BE DESCRIBED ARE NOT IN THEMSELVES DANGEROUS. THERE IS DANGER FOR THOSE WHO DO NOT TAKE ORDINARY PRECAUTIONS WHEN USING AC POWERED RADIOS. ANY WORK PERFORMED ON SUCH RADIOS DEMANDS DISCONNECTION FROM THE MAINS DURING ALL PREPARATORY PHASES OF THESE EXPERIMENTS. NEVER CONNECT WIRES TO ANY RADIO WHICH HAS BEEN LEFT OPERATING. HAZARDOUS SHOCK CAN RESULT. DO NOT UNDER ANY CIRCUMSTANCES PERFORM THESE EXPERIMENTS DURING A STORM! GROUND ANTENNAS ARE DIRECT CONNECTIONS TO EARTH. WE SUGGEST YOU TAKE PRECAUTION BY OBTAINING AN INEXPENSIVE LIGHTNING ARRESTER FROM LOCAL RADIO MARKETS.

THE historical essay on Ground Antennas is only a preliminary bibliography, a foundation upon which to place our empirical confidence. It is through the agency of just such articles and patents that an archaic world model finds its most complete explanation. The inherent wonder of signals detected by ground-connected shortwave receivers is their ability to receive signals with greater strength and clarity than conventional aerials, and to reveal the bioactivity of subterranean propagation. Beyond their use as audio "capture systems", such shortwave receivers display other more intriguing characteristics which lead our attentions up toward a technology of the sublime. With the shortwave receiver as a radionic tuning instrument, an interface which captures and converts geomantic dynamics into audio signals, we have made several astounding observations.

Recall that when shortwave radio receivers were employed as peculiar detectors of geomantic energy, additional unexpected phenomena began to flood the relevant literature. Close inspection reveals that both "ground radio" and "ground antennas" are the components of Radionic phenomena, and are completely dependent on Radionic principles for their astounding and otherwise anomalous performance. Explorations of the interactions between radiosignals and geomantic energies require very simple equipment. Geomantic energy is biodynamic, and actively modifies and augments radiosignal carriers. This presentation will focus primarily on the more qualitative aspects obtained through the use of ground-buried aerial designs, although it will certainly follow that stringent quantitative measurements will be both secured and reported.

This basic preliminary experiment with the simplest ground aerial teaches the biological growth characteristic of signals received through the ground. Indeed, the implementation of a simple ground

pipe in place of an aerial, also converts the shortwave receiver into a diagnostic tool. We may, by merely sweeping the receiver dial, probe and "view" the biodynamic conditions prevalent in the ground. Despite the great variety of ground aerial designs, we observe a consistent signature of the ground densified biodynamic energies.

EXPERIMENT WITH A COPPER GROUND PIPE

(G. Vassilatatos)

Please observe the precautionary notes placed at the beginning of this article! When you have, try a simple experiment for yourself. Obtain a short (2 feet) section of copper pipe from any hardware store. Make a small cut into the top of this with a hacksaw. The cut is made so that you may twist into it a secure wire lead. Although the placement of the pipe is most important for many radionic experiments, you will not be required to select the most potent spot. While there are those whose qualitative sensitivities permit such a direct location of highly "active" ground locations, there are more quantitative methods to assist in this necessary survey. If you wish to conduct your experiments outdoors, you will need appropriate portable radios and the like. In this case, you will more readily discover the phenomena which we will mention. Plants are great indicators for determining the right placement of ground antennas and earth batteries — as they are also great indicators of subsurface mineral content.

If you wish to establish the very best point, find a place where dark green vegetation thrives. Empirical explorations will serve you best. While desertified plots of earth generally reveal the absence of easily accessible ground currents, you will discover an amazing phenomenon in such a location. Wait until the ground is soft. I usually wait until after a good rainfall before driving my experimental antennas down, having selected a very verdant garden strip just below my office window. You will need an available window, if you wish to maintain the arrangement with the radio indoors. Wire will be run from your receiver to the ground antenna, so it is imperative that your window coincide with the ground point which you have selected.

Wear gloves when performing this portion of the experiment. Using a small sledge, carefully drive in a 2 foot long copper pipe. The pipe you choose can be much longer according to your local needs. I left a 4 inch section above ground for the hookup. Obtain a sufficient length of coaxial cable (RG 58 works fine) to establish a lead between the pipe and your radio receiver. If long enough, an old straight electric guitar cable will do. I clipped off both phono plugs and used the center conductor for my experiments. Neatly trim away the outer shielding with rubber tape. First connect the center lead directly to the "aerial" terminal of your receiver. If your

receiver has only an external antenna, connect the ground lead directly to this antenna. Now carefully drop this wire from your window to the ground antenna. Close the window to hold the line, and go outside to establish your connection.

OBSERVATION 1

The line will instantly be flooded with ground currents, very high potentials which will not cause "shock", but which may over-excite your system. Take care not to handle these lines for too long a time without rubber gloves. The line from ground may appear "dead" to all appearance, but it is a source of powerful vitalistic effects which can cause fatigue and other congestive sensations. Once attached to your receiver, leave the wire alone. The ground currents may be applied to any kind of receiver. I successfully received television signals with a ground antenna, obtaining surprisingly clarified signals on most of the shorter wave channels (7 through UHF) without any other aerial. Ground antennas are very useful for those who live in mountain-bound locations, where television reception is distorted or even absent.

I first connected the lead wire from ground to a small shortwave receiver, a Hammerlund 38-S, which was acquired at an amateur radio sale. The simple ground pipe brought in a surprising wealth of very strong signals. When you first hear these signals for yourself, you must take time to realize that the original radio theory "prohibited" all such possibility. Straight connection to ground was theoretically considered an impossibility, being the "neutralization" of signals received through the aerial wave route. It was precisely because of these observations that the original theoretical model, which spoke only of "radio skywaves", was first modified to accommodate the obvious ground wave activity. Once dogmatically fixed, radio theory required continual "a posteriori" modifications: modifications from the empirical world. Now you will begin to observe and appreciate numerous empirical effects which are yet considered "impossible". With your small system, you will literally peer into the subterranean world, where bioactivities are in persistent dynamic exchange.

OBSERVATION 2

The first such effect has to do with the "response" characteristics of ground currents. Tune to one of your stronger stations. While listening, momentarily disconnect the ground wire. Notice the sudden drop in volume and signal integrity. How long did this volume diminution occur? Now reconnect the lead, while paying close attention to the sound quality over time. How long did the signal require in order to reach its original volume? I have repeatedly observed that the disconnection volume drop is rather instantaneous. But the reconnection volume requires a much longer time, some 40 seconds in certain cases. The slow restoration effect sometimes occurs in a discontinuous fashion, first rising slowly (20 seconds), and then very suddenly (3 seconds). The volume increase in this manner can be both unexpected and surprising, often reaching volume levels which actually exceed their original states.

You will find that every local change in proximity to the circuitry of your simple system will provoke the "restoration response". Signals seem to lag each change which has been applied to the system. The adjustment of the ground antenna will provoke the response, a slow rise in volume occurring perhaps in 35 seconds

after an adjustment has been made. As with the response of living things, the ground receiving receiver behaves as a quasi-biological entity; a poignant and astonishing glimpse of Biodynamic behavior. Bio-organisms do not behave in the manner of digital switches. But once signals have been impacted by any electrical expression, ground received signals will execute an exaggerated restoration. This exaggerated response will be observed with every local electrical disturbance. The mere activation of an appliance or lamp will evoke the rapid diminution of any signal. But the restoration phase can gradually increase in volume until it overwhelms the listener, reaching excessive volumes. This response is more than "withdrawal and restoration". Its effects can persist long after the impact has occurred. Proper placement of the ground antenna absolutely determines this magnification effect, an observation made throughout the last Century.

Provided the ground "antenna" has been accurately placed in an "active spot", the effect most notably occurs with any electrostatic discharge. The first response is for the signal to "shrink", or "withdraw". The ground signal gradually reemerges in strength, but continues expanding beyond its normal volume, "flaring" into distorted brilliance before settling down to its normal volume. This amplification effect is not to be confused with the commonly observed shortwave "fading" effect, and is the direct result of disturbances which have occurred in proximity to the system. These brilliant audio "flares" can persist for upwards of ten seconds after the disturbance has passed, followed by a very gradual decrease in volume to the original signal strength. The flaring response was artificially arranged and used in a great number of post-Victorian devices.

This biodynamic response was used to magnify vital energies, and was evoked by Turn of the Century systems through the use of pulsed electrical disturbances. The highly intensified quasi-electrical potentials, subsequently obtained, were used to cure illness and light lamps. In other appropriate instruments, such resultant currents were used to fulfill a variety of other experimental functions. With the requisite proper location of the ground terminal, the effect was deliberately applied to the ground currents themselves (Tesla) and to human patients (Abrams). While the results were often spectacular to the senses, the latent effects were seldom addressed.

We concur with those select Radionists, who condemned the electrostimulation of ground and vital currents as an inferior methodology. Such methods may provide intriguing solutions to the need for electrical power, but as that is a degenerate technology in its own right, we have sought other means by which to fulfill the utilitarian needs of humanity. The electrostimulation methods provoke natural rage on an unappreciated scale, with effects not recognized by all but the most astute observers. It is a means of which we also highly disapprove. There are indeed better and more naturally acceptable means by which to evoke the growth and magnification response in ground currents. One may romance the favors of Nature without the methods which deliberately enrage her furious wrath.

OBSERVATION 3

There are other effects one notices, especially when tuning faint stations with ground antennas. It seems that tuned stations actually become stronger in the act of being heard, a bizarre effect requiring fine order readjustments. Indeed, continued reception of faint

stations evidence definite auto-magnification effects. Obtained only through the use of analogue (variable capacity) tuning systems, the tuning process seemingly magnifies the strength of any faintly received signal. One may thus begin with a signal "granule", and end with a booming volume. Such entuned signal growth only occurs with continued attentive reception, a remarkable phenomenon in which receivers literally draw and automagnify signals on demand of the listening site. This strange connective "supply-response" function does not occur without human agency however. In absence of the human "recipient", no such amplification occurs, a curiosity which will find numerous skeptics and critics. But try the experiment for yourself.

Tune a weak station and leave the room. The signal fades away. Walk in again and quickly tune the signal. Walk away once more. The signal fades. Once more, tune the signal and walk back from the receiver. With very minor waverings, the signal strength will remain unchanged...until you walk directly before the receiver. Stay this time. Tune the signal and wait. You will literally hear the signal gradually rising in volume. The faint signal will gradually, almost perceptibly, grow in strength for you as you remain in the room. Now tune the signal carefully, rocking the dial to the left or right of center. Each readjustment raises the signal strength, until the volume is strong. Periodic minor adjustments will reveal a remarkable volume magnification, one which can reach enormous and fixed volume levels. This observation takes time and patience. With such patience, one can thus literally obtain a "signal bonfire" from a "signal spark". We have observed a signal increase while attentions are being focussed on the signal, with a subsequent complete fade back to faintness after the recipients have been removed.

Why can you tune such a weak station, periodically making "fine adjustments", and obtain a signal magnification? Tuning a weak signal through a ground antenna, and then observing the manner in which that signal actually "grows" in strength for a human recipient, is a demonstration of radionic significance. The same has been observed when radionic currents are selected through tuning instruments, and allowed to stimulate a biomonitored plant. The results are always the same, plant responses indicating the gradual increase of radionic current strength. Unlike aerial currents, ground signals are more intensely radionic in nature. They actively seek to infuse appropriate bio-organismic "capacities". Ground currents enter the receiver and are there entuned. The receiving circuit projects an infusive and thready auric radiance which floods the listening space until its natural saturation has been reached.

Those who are in the listening space add an additional absorptivity, a capacity to allow a continued projection of auric emanations. This continued projectivity into proximal recipients produces several characteristic attributes. Recipients who possess an innate desire, an emotional response for the signals, produce sudden surges in the reception strength. When attention is strongly focussed on some faint signal, then it will grow. The ground emerging signals will therefore intensify for you and those with you in a room, pouring into the listening space and being thus articulated among human "capacities". As radio signals are loaded with the articulation of human attention, the signal will grow more rapidly. It has recently been observed that the very same signal, when later left unattended, will fade back into the crashing background. Desirous attempts made to relocate and raise the same signal are not unsuccessful. The

absence of appropriate numbers in the human recipients will modify the rapidity of signal growth. The humanly guided tuning process which engages such signals actually entunes the recipients in a radionic manner.

The refinement and entunement of such signals are very obviously a radionic phenomenon of the deepest significance. Entuned magnification effects are therefore radionic entunement effects, the magnification of human articulations by human recipients. Neither electrical nor radio currents possess the articulate nature capable of exhibiting such a detailed biodynamic function. We have previously demonstrated this phenomenon with biomonitored plants, an effect which experimenters may easily reproduce. The implications of this strange effect are enormous for the theoretician. They compel the examination of every notion of radiosignal causality. The only researcher who has treated this effect is Eric Dollard, whose excellent work describes "energy reciprocity" between Tesla impulse transmitters and receivers.

The fact that signals may be drawn from ground on human demand, and automagnified by human presence, should provoke heated debate. How can one explain the veritable control of a distant transmitter by a small receiver? In a biodynamic sense, we are not required to address distant transmitters, since ground currents automagnify with regularity. The additional energy which feeds radionically entuned and capacity-demanded ground signals is sourced within the great subterranean depths.

OBSERVATION 4

You will notice that, soon after you have first introduced the pipe into the ground, your first received stations will begin to "grow" in strength. This effect will continue for days, growing in increments of strength and clarity. Fixed volumes begin to reach levelled states in 2 or 3 days, a growth process uncommon with aerial signals. But beyond the signal growth of the strong stations, one begins observing the gradual increase in station numbers with time. Your initially strong stations, those which grew in the course of 3 days, will now become interspersed by a great population of faint signals. This "background" population will then increase in magnitude and clarity until your sweep dial is filled with an immense "crackling". By day 4 or 5 with this arrangement, my sweep dial was literally covered with the continual "crackle" of new signals.

Sweeping the dial will thus continually bring in tiny signal "granules" between the stronger signals, those which normally mask these almost imperceptible stations. The gradual appearance of new stations, and the gradual "arrival" of a great many minor signals, begins manifesting with time. The buried pipe becomes a "receptive site", into which the upwelling currents actively pour. These effects were rediscovered when buried metals began producing their characteristic "tone signatures". A singularly fascinating study, we found that each buried metal literally became "saturated" with ground currents. This saturation process also required a gradual period of time (*Earth Tones* audio tape, BSRF).

Because of the slow growth process, where stations grow in both strength and number with time, one must eventually secure a larger "capacity" receiver. One learns that shortwave radionic applications need specific and well designed receivers — of the vacuum tube type or germanium transistor variety. Many of the newer digital models are insufficient. Through a gradual familiarity with numerous models,

each experimenter will settle upon the use of one or two particular favorites. Mr. William Lehr rebuilt a Zenith Trans-Oceanic for me. It is a receiver which I cherish, not only because of its wonderful "warm" tone and excellent operation with the ground antenna, but because he rebuilt it for me personally. The popular set is equipped with small screw terminals, one for the normal onboard telescoping antenna, and the other for a ground wire. I disengaged the onboard telescoping antenna, connecting its internal lead wire instead to the ground screw. The ground antenna was then connected to the aerial screw.

In this reversal, the receiver recognizes the ground antenna as the "aerial", while the collapsible onboard antenna is recognized as the "ground". This "inversion" of radio inputs more effectively works the shortwave capacity in absorbing ground emerging signals, the collapsible aerial becoming a miniature "counterpoise" ground. A great many separate phenomena are noted with this arrangement, one pioneered by Nikola Tesla and (most recently) explored in greatest depth by Mr. Eric Dollard. Touching the telescoping "ground" causes the complete eradication of signal strengths across the dial, the withdrawal of this touch causing the characteristic slow return to original volume. One discovers now the necessity of adjusting the telescopic "ground" with each tuned station, a means by which increased "room capacity" is achieved. The telescopic "ground" facilitates an increased connectivity within the volume of space surrounding the receiver.

OBSERVATION 5

With persistent saturation, your ground pipe antenna will continue producing a surprising proliferation of signals. In this growing manner, signals kept appearing from greater and greater distances. Understand that the reception of foreign signals through the ground matrix is completely different from that which presupposes the downward "skybeaming" of signals. With ground reception there is no "skipping". Ground reception is the result of direct contact conduction. Signals have to travel from their sources to you...in straight lines! You may therefore understand that the most weak and distant stations, those innumerable transmitters which lie in the "geography between" yourself and certain strong foreign stations, will begin to make their appearance. A slow growth period will prove this effect to you.

But the loss of signal population, when the pipe is retracted for a few minutes, cannot be comprehended unless we further examine the "signal accretion" phenomenon. The acquisition of new stations into a ground antenna occurs throughout the day, regardless of the weather or time. The Radionists who studied these phenomena recognized that ground emerging signals actively seek out both ground-proximal metals as well as those which are actually buried. Ground currents can rise to the surface when metal probes are simply aimed toward the ground. It has been observed that the mere positioning of a blunt-ended cable over ground is sufficient to cause an upward flow of ground currents, a reception of signals being obtained (Theroux).

The process is one by which ground currents literally "attach" themselves to the downward pointing conductor, entwining and fixating themselves through time. If this is true for conductors which merely point into earth, the same is especially true of metalloforms which have been buried. The upwelling emergence of ground

currents is the result of the pipe itself, a response to a metal body which has been buried near the surface. The ground antenna behaves as a very definitive metallic "attractor". Driven down into a few feet of earth, metal structures literally attract ground currents from their deeply consigned pathways upward. The process of attraction and accretion requires time. This explains why signal strengths begin to grow when buried terminals are first buried, continuing until the pipe and receiver have reached their capacity to absorb.

The withdrawal of signals, after the pipe has been momentarily disturbed, is problematic from every electrical point of view. What principle can be cited in explanation of this remarkable signal disappearing act? What causes the signals to "shrink away" from the ground terminal when its growing potential has been disturbed for a few moments of inspection? This "disengagement phenomenon", the striking disappearance of signals, compels the recognition of an "irritability" factor when dealing with ground currents. Irritability is a biological characteristic not present in electrical currents. What have these signals to do with biological activities? Wishing to address those skeptics who cannot accept this energetic growth characteristic in grounded terminals, I pulled up the pipe to better inspect its surface. Fully expecting to find the metal "pitted" in thousands of tiny corrosion points, the probable points in which the innumerable signals appeared, I was not a small bit shocked to find the pipe in excellent condition. There was not a bit of visible corrosion, certainly no pitting or scarring in the otherwise brilliant sheen which it had when I pounded it down into the earth. But the mystery did not stop there.

I placed the pipe back into a new location, adjacent to its original ground chamber. Thus driven down to the exact depth as it had been before, I went inside to listen once again. All but the strongest signals had disappeared. Obviously, the multiplication of signals is not the result of corrosion, not the result of continued ground "electrolysis". While "pitting" the pipe exterior with innumerable exposures will increase the effective conductive surface of any pipe to an amazing degree, such corrosion will play little part in the actual increase of signal receptivity. In fact, neither ground antennas nor earth batteries corrode; a perplexing fact which we have rediscovered long after Nathan Stubblefield made its first mentioned.

OBSERVATION 6

Deep fades are never heard with ground antennas, but one does observe sudden "sweeps" which indicate strange and instantaneous ground disturbances. These do not disturb station reception, certainly not distorting or destabilizing the actual signals being received. Using ground antennas, only a very slow wavering is sometimes observed. These exceedingly slow waverings occur with no clocklike regularity, suggesting that true biological pulsations are being observed. Such exhibitions were once referred to me by Dan Winter as the deep earth "tides", meaning by this that the biodynamic currents clearly engage in native pulsations. Since we have never glimpsed those currents of enormous vital potential, those "dragons" which normally reside deep in the heart of earth. These currents are definitely modified by influences in outer space, rising toward the surface during certain seasons, and diving back down to their mysterious haunts once again.

During sun-transitional hours, ground received SW signals do

not appear to be "geodesically" selected. In other words, one does not receive a complete "global sweep" of signals, from nation to nation. The "sweep" may display continuity across a large region of ground, a cluster of neighboring nations being heard in sequence, but each region is not received with continuity. One discovers that whole regions of the earth suddenly emerge from the SW background and literally predominate the reception field.

Selectivity of signals through the ground occurs as if whole regions of the world have been "switched" on and off—independent of station schedules. Directly and most strongly related to lunar phase, one observes the sudden emergence of whole regional group signals which take preeminence over all others. One can tell the portion of a lunar month by these strange regional "fluorescences", an amazingly repetitive pattern. In Staten Island, ground radiosignals follow a mysterious pattern of arrivals. Modulated by the moon, signals from Canada (New), Northern Europe (First Quarter), South America (Full), the Mediterranean (Last Quarter) will predominate across the available broadcast bands.

EXPERIMENT WITH THE "SUBANTENNA" COIL (M. Theroux)

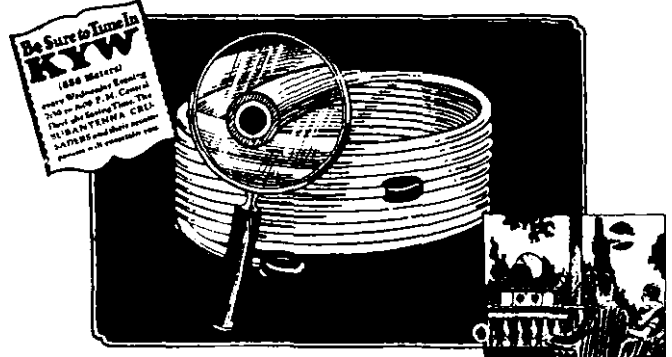
The "Subantenna" coil will require a bit more work on the part of the experimenter to construct, but is a worthy undertaking as we can see from the ad that this design was a commercial success. It has also proven itself over and above simple grounded rods, to be a highly sensitive receiver when properly placed in the ground. Its construction is actually quite simple. You will need roughly 30 feet of RG 58 coaxial cable, one roll of black electrical tape, one alligator clip, a pair of scissors, and a pair of wire strippers. The "Subantenna" coil, when finished will be about 4-5 inches tall and 6 inches in diameter. Start by cutting the wire into two sections — one 16 feet long for the coil — the remaining 14 feet will be used for connection to your radio. Begin winding the first turn of the coil (using the 16 ft. section) so that it is exactly 6 inches in diameter. No coil form is necessary with this method — as you add each successive turn, you will be taping the turns together in three evenly separated places. Add another turn and tape. By the time you are finished, you will have about ten full turns. Cover the bottom bare end of the coax wire with tape. You should have about 6 inches of free wire at the top of your coil. Strip away about 1 inch from this end exposing the middle conductor wire. This solid wire is the "connection point" for the lead wire to your external antenna jack on your shortwave or AM radio. Cut away the excess shielding so that it is flush with the insulation. You are now ready to bury the "Subantenna" coil. Choose a spot of soft ground free from hazard, and bury the coil (be sure your "connection point" is sticking above ground or you'll be digging it up again). Fasten the alligator clip to one end of the remaining 14 ft. piece of coax, clipping this onto the exposed middle conductor of the coil. You can now run this wire to your radio, fastening it to the external antenna terminal. If there is a specific jack for the external antenna, you may need to match it with the proper plug.

OBSERVATIONS

Initially, one will notice a substantial increase in reception. The most intriguing aspect of the Subantenna, or any grounded aerial, is its ability to cause signals to grow in intensity over a period of a time. After a few days one will be able to hear signals with increased

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clarity and depth. One of the most important features of this ground antenna is its static free reception. You will note that the conductor in the coil is insulated from the actual earth itself — conductivity plays no role in the function of this design. While the Subantenna coil filters static and brings in signals with extreme distinctness, there are drawbacks. One may notice after the coil has had sufficient time to become saturated with ground currents, reception of signals becomes so powerful that stations normally considered far enough apart, will "bleed over" onto one another. I have experienced five distinct stations hundreds of miles apart, pouring through the radio on one frequency at the same time. This can be a problem with weaker local stations being absorbed by more powerful distant stations, but generally the 50,000 watt AM stations ring through clearly. Only on given nights does this bleed over occur.

The warmth, clarity, response, and strength of such grounded radio systems are testimony enough. Coupled with the empirical reports and logs previously mentioned, plenty of proof is provided that, in many instances (especially concerning eidetic content), ground radio is a superior form of reception over Hertzian receivers. Curiously enough, we have seen many return to their antennas after having experienced radio through the ground. While no explanation is given, we assume they may need to hold on to the belief that radio only flies on waves through the air — all the while listening to the crackle, hiss, and fade of their favorite station. □

My Sister Norene

by Tracy Jones

Sometimes compassion, love, and advice are all a person can offer.

Dear Sister,

I don't have a cure for you, but I wish I did. However, I've witnessed and read things I know to be true. You might try these and see if they help.

Above all you must have positive thoughts, thoughts that everything is going to be all right. You must maintain a cheerful disposition. The way I see it, why not? You can be remorseful and sad, but that requires the same time as being happy and thankful for those things that bring you joy and give you a chance to immerse yourself in their delight. You have a wonderful husband, two great children, two delightful grandchildren, and many like me who love you.

Your thoughts and actions are very important. I believe your mind controls your body and not the other way around. There are cultures wherein the old, feeling it's time to depart, lie down and think themselves to death. And there are cases of doctors who gave up on patients with terminal diseases, and these patients shut themselves off from people with negative attitudes, canceled their news subscriptions, and ignored the rest of TV to watch nothing but TV and video comedies. They recovered and the doctors had no explanation.

Who knows? Maybe you're a likely candidate and should try this approach. It takes the same time to worry and picture bad thoughts as it does to watch comedy and think about the comical situations characters get themselves into. Myself, I watch "Dave's World," "Home Improvement," "Frasier," old reruns of "Cheers" and a few others. "Dave's World" reminds me of when we were kids in Miami with people coming and going unannounced all the time. For lots of movie laughter, you must see *Grumpier Old Men*.

I've discovered from my own experience ulcers will give you a lower backache and switching to a diet of root vegetables and poached fish, while avoiding citric acids, milk products, fried and fatty foods, and anything that causes indigestion or heartburn will do more to alleviate the backache, if not completely cure the ulcer, than all the pain or anti-acid pills on the market. Indigestion and heartburn are signals that my body doesn't need whatever causes them, usually something I like. I abide by the principle that your body is a product of what you eat. Junk in equals unhealthy results. It's in our later years that the forgotten, uneaten vegetables and fruits come back to haunt us. Of course, the vegetables and fruits should've been organically grown without the use of chemical fertilizers and pesticides, or you'd be in no better shape.

I've also read you can completely eliminate diseases, forget your vitamin pills, and strengthen your body's immune system by eating a diet of whole grains, vegetables, fruits, and unpasteurized goat's milk and the butter made from it. This is the diet of the Hunzas of the remote Gilgit Agency in Afghanistan who've also found a fountain of youth by drinking vortexed water from a fast running glacial stream containing all necessary minerals—the same trace elements found in Azomite.

I use the Stimulator for aches and pains. I hope you've received yours by now and felt its effects. Another thing I use is a magnetic strip used to keep warm window blankets in place. I've enclosed one. Use of this is based on the theory that your body is magnetized and its polarity sometimes goes askew. Some people will only sleep with their body lying north and south with their head in the north position to realign their body's polarity. The Japanese use a similar method with magnetic pads. I tried this, but the pads are expensive. The strip works just as well for me. I safety pin my strip to the mattress, attraction side facing up, so I lie with my back over it. Whenever you roll over onto your back, the strip helps polarize your body's magnetic properties. It won't hurt to try it, and I forget it's there until I remember I don't have a constant backache anymore.

I've also read intravenous hydrogen peroxide and photoluminescence are good therapies. Who knows, they might make your condition more livable and allow you to survive long enough to use a future cure or at least turn your backyard into an organic vegetable garden. If you show your love towards the plants you grow, I've been told they reciprocate in kind. As I said before, I don't have a cure and can only share what I've discovered.

I may be wrong, but I don't believe it's your time to go. I keep you in my thoughts and hope for your recovery. I know others are doing the same.

With love,
Tracy

When I wrote that letter in April 1996, I never dreamed I'd find a treatment to help my sister reverse the curse of AIDS, a situation that started in 1982 during breast reduction surgery. I also never dreamed I'd find the medical establishment so narrow-minded and uncooperative. It hadn't occurred to me how controlled we are by those in power and the means they use to keep us where they want us — ignorant and placid.

Just the month before I'd read *The Secret Life of Plants* by Tompkins and Bird. That book changed my life and led me to further investigation — *Secrets of The Soil* by the same authors, *Left For Dead* by Dick Quinn, *Fit For Life* by Harvey and Marilyn Diamond, *Dowsing* by W. H. Triender, and all the pyramid power books I could get my hands on. Those books were the foundation. Others of equal importance came later during the Summer and Fall.

Meanwhile, in May 1996 my wife and I left Seattle and drove across the country to see my sister. We found Norene suffering from extreme aches and pains, sores, a weakened liver, and chronic tiredness. It slipped her mind to tell us she also had a peptic ulcer, an aneurysm in the left side of her head, and was allergic to most everything. She'd regained most of the 35 pounds she'd lost the previous year when HIV was diagnosed while she was in the hospital with several contagious viral diseases. Her recovery and condition, I assumed, was caused by the 29 drug capsules she took every day.

We stayed a week during which I tried to get Norene to change

her diet — a plate of grits, fried eggs, bacon, toasted white bread spread heavily with margarine, and coffee for breakfast, and the usual Standard American Diet (S. A. D.) for the other meals. She couldn't see why she should change all this because she'd been eating that way for the past 58 years (two less than I did) and she really didn't want to change. Besides, that's the way our mother'd fed us with everything deep fried; it'd seemed okay then. Of course, Mom and Dad died at 65 and 62, heart failure and cancer. I really didn't know what else to do, so I left Norene with some of the blue/green algae tablets I was taking, and we continued on our trip.

In June I came across a pamphlet extolling milk thistle extract for liver regeneration. Norene was all for this. I kept her supplied with that along with the algae tablets which she said improved her strength.

In August she complained of severe weakness. By then I was taking cayenne pepper capsules (90,000 HU), had lost 30 pounds and lowered my blood pressure from 160/110 to 130/72, and was walking 10 miles a day for the fun of it. So it wasn't hard to convince Norene to try the pepper. Her strength soon returned. After reading *Fit For Life*, she had also changed her diet somewhat, replacing her breakfast with fruit.

In mid November, her condition took a turn for the worse. The conversation with her doctor went like this:

"Doctor, you've got to help me. I really hurt."

"I'm doing all I can. You're on every HIV drug available."

"Doctor, you don't understand. It's the ulcer and the constant pain in my body and pounding in my head that's killing me. I can't take the pain anymore, and aspirin no longer helps."

"I can't really help you with that. That's not my specialty."

A week later Norene's ulcer started bleeding, and taking cayenne pepper became so uncomfortable she quit. I found out about all this just before Thanksgiving and immediately asked what she was eating. Besides two to three glasses of orange juice a day, Norene was eating other acid fruits. She figured she needed them to keep her strength up. She was so weak she couldn't walk the 120 feet to and from her mailbox without resting on the way. I told her to stop eating all acid foods, discontinue the aspirin, go on a bland diet of root vegetables, take Mylanta, and make cabbage juice. Almost immediately she discontinued the cabbage juice because of extreme bloating. Norene said she looked bigger than when she was pregnant.

At that point Norene believed she was quickly losing the battle. She was desperate. I convinced her to get on a plane to Seattle. The only thing I knew about HIV and AIDS was a few alternative approaches, but it was obvious the prescribed drug therapy wasn't working towards a cure, but rather was a slow tortuous route to death. We agreed on three weeks for her stay. Not much time to find a remedy, but I thought there had to be a better way and I was determined to find it very soon.

About that time my learning curve began accelerating because of two things. The previous month I'd found a small, private library in Seattle called *As You Like It*. And a physicist named Nick, whom I'd met recently, kept giving me information on what to investigate and loaned me an old analog Rife machine. The library introduced me to more books I never knew existed, such as *The Orgone Accumulator Handbook* by James DeMeo, more books by Stienner, Reich, Becker, Bird, and other hard-to-find sources. The one that

made the biggest difference wasn't even one of the 12,000 books, but a quarterly magazine called *Borderlands* with issues dating back many years. It appeared my guides were working overtime.

I was so overwhelmed by the different articles that I immediately subscribed and in the first issue I received (3rd Qtr, 1996) was the article "Breakthroughs In Home Health Care" by Peter Lindermann. The article included a description of how Robert Beck, D. Sc. put together a protocol for HIV/AIDS and CANCER. I credit Dr. Beck with my sister's spontaneous remission and hope someday to see his picture on the cover of *Time* as Man of the Year and a Nobel Prize winner.

The rest of my sister's story is from the actual log (and accompanying lab results) my sister and I kept from the time she arrived in Seattle to the time of this writing.

You will need a few descriptions to follow the log:

1. 3 layer Orgone blanket: Assembled per James DeMeo's instruction book.
2. 4 layer Orgone pillow made with acrylic felt: same source.
3. Open frame pyramid: 1/2 inch conduit pipe with vinyl tubing for connectors per Serge King's *Pyramid Energy Handbook*.
4. Use of quartz crystals in pyramids: same source.
5. Treating water with pyramids: same source.
6. Stimulator: a small, hand-held electric spark emitter (such as that found in outdoor gas barbecue grills) sold by a national company and used to relieve pain.
7. Crystal Energy: Dr. Patrick Flanagan's catalytic mineral concentrate.
8. ConTen: Ionized minerals from Great Salt Lake, Utah.
9. Coil, zapper, and Beck's silver colloid water: Dr. Robert Beck's protocol as described in *Borderlands*, 3rd Qtr, 1996.
10. Rife analog frequency machine: At one time considered by some to be a possible cure for cancer. Not to be confused with Rife's Ray Beam Machine.
11. Spin 21 times: First of 5 exercises from Peter Kelder's *Eye of Revelation*.
12. Dowsing: All food and pills were dowsed with a pendulum made from Spruce wood per W. H. Triender's instructions in his book *Dowsing*. All produce purchased was organically grown except Fuji apples, bananas, seeds, and nuts. Diet was vegetarian except for fish. In addition it did not include any dairy products, refined wheat products, refined sugar, packaged food (except for 3 items), chocolate, sweets, soda, and caffeine.
13. Abbreviations: b/g-blue/green, BM-bowel movement, ca/ap/ju-carrot/apple juice, cap-capsule, coil-Beck's HIV/AIDS protocol, dis/wa-distilled water, Em-enema, gl-glass, mv0-no movement, mvex-movement excellent@about 3-4 cups, mvgd-movement good@about 1-2 cups, mvpo-movement poor@less than 1 cup, sil/col/wa-Beck's silver colloid water, Spin-21 times to right, Stim-Stimulator, sun/ses/alm-sunflower/sesame/almond seeds, tab-tablet, Tbs-tablespoons, uri/nor-urination normal, vit-vitamin, wt-weight, wx-weather, zapper-Beck's HIV/AIDS protocol.

From the log:

11/24/96 Sunday 1840 Arrived in Seattle. Weather rain, 44 degrees. Tremendous head pounding, many body aches, weak and tired, severe lower back pain, headache, stomachache, large sore on

lip. Wt 141. 1915 1 gl/ca/ap/ju, 400 IU vit E, one gl filtered pyramid treated water. 2010 1 boiled potato, disposition good. 2125 2 retrovir, 3 invirase, 1 epivir, 2 zoirrax, (taken during morning: 6 crixivan, 4 retrovir, 2 zovirax, 1 diflucan, 1 epivir, 1 sulfameth/trimethoprim, 6 invirase, 2% xylocaine viscous solution). Comment: This was the medicine prescribed by Norene's doctor at an approximate cost of \$2,200 per month. 2130 One half bowl rice bran, wheat germ, wheat bran, grape nuts, banana, 3 Tbs lecithin with rice milk. 2230 Bedroom layout: 1-3 layered Orgone blanket, two regular blankets placed on top of two sheets for sleeping when not using Orgone blanket. Bed under six foot, emt open-frame pyramid with alignment magnetic north. Window open 1 inch during night. 1 small ozone producing, ion air filter machine kept on 24 hours a day. One half inch by 24 inch magnetic plastic strip pinned to mattress to be under back when lying down. 2235 Shower, bed, slept under one sheet and Orgone blanket.

11/25/96 Mon 0200 Heavy uri with legs and backache. Head buzzed constantly throughout night. Used Stim. 0400 Heavy uri. Used Stim to reduce pain in legs, back, and head. 0600 Used Stim. 0845 Out of bed, lower back and leg pain, very restless night. Disposition good, homesick. Before dressing, hair washed under bathtub faucet mornings. Discontinued all medication prescribed by Doctor. 0855 Breakfast. One Fuji apple, 1/2 # grapes, 600 IU vit E, 2 veg enzyme tabs, 2-1500 mg garlic pills, 20 drops milk thistle extract. 0915 BM- mvgd, firm and color dark brown. 1000 Rode in heated car 1 1/2 hours, was very drowsy. Went food shopping. Wx 48 deg o/c. Filled 8 one gallon glass jugs with artisan water obtained from artisan well. Added 8 drops Crystal Energy to each gallon. Comment: This water was stored under an open frame pyramid one gallon at a time. All drinking and cooking water was taken from these jugs after being stored under pyramid. 1230 Lunch. One gl/ca/ap/ju (all juice made with juicer from raw carrots and Fuji apples), 2 plain slices spelt bread, 1 cup catnip tea. 1235 BM-mvkd, uri/nor. 1455 BM-mvkd, uri/nor. 1540 BM-mvkd, uri/nor. 1545 400 IU vit E, 2 450 mg b/g algae, 2 veg enzyme tabs. 1600 Went visiting, wx 48 deg, rain. 1800 Returned from visit, disposition good. Slightly weak and tired. 1932 Dinner. 1 gl/ca/ap/ju, one boiled potato plain. 1945 400 IU vit E. 2240 One cup of catnip tea. 2245 BM-mvkd, uri/nor. Shower, bed.

11/26/96 Tue 0200 Heavy uri, restless, woke frequently with pleasant lucid dreams, vivid colors. 0400 Uri/nor, leg and backaches, restless. Used Stim. 0900 Breakfast. gl/ca/ap/ju, 1 Fuji apple, 1 banana. 1000 Acupuncture appointment, received herbal tea mix (nine herbs) to be taken three times daily by putting two teaspoons powered tea in boiling water, letting sit until cooled, and taken 30 minutes before eating any food. 1230 1 maitake cap, 1 Tbs Vital K, 1-B 12 tab, discontinued garlic pills. 1300 Stomachache. 1315 BM-mvpo, uri/po. 1345 16 oz. herbal tea. 1430 Lunch. Chapatti sandwich with romaine lettuce, 1/2 avocado, 1 gl/ca/ap/ju. 1445 BM-mvpo, uri/po, color brown, stools firm. 1600 Wx 50 deg rain. 1650 Em-mvpo (all enemas are water enemas). 1700 16 oz herbal tea, 400 IU vit E. 1730 Dinner. Brown rice, olive oil fried onion, raw carrots, 1 slice spelt bread plain. 1955 1 maitake cap. 2130 1-25,000 IU vit A, 1 veg enzyme tab, 400 IU vit E, 2 450 mg b/g algae caps, 8 oz herbal tea. 2300 Shower and bed.

11/27/96 Wed 0130 Uri/nor. Used Stim, restless. 0400 Uri/nor. Used Stim. Still restless, pleasant lucid dreams continue. 0830 1 B-

12 tab. 0850 Upset stomach, discontinued B-12 tab (dowsed negative), homesick. 0915 1 Tbs Vita K, 1 enzyme tab, 400 IU vit E, 2-450 mg b/g algae caps, 8 oz. herbal tea, 20 drops milk thistle extract. 0930 Breakfast. 1 gl/ca/ap/ju, 1 apple, 1 banana, handful grapes, 1 slice plain spelt bread. 1000 Em, mv0. 8 oz herbal tea. 1015 1 gl/ca/ap/ju. 1230 8 oz. herbal tea. 1300 2 maitake caps, 400 IU vit E, 2 450 mg b/g algae, 1 veg enzyme tab, handful sun/ses seeds (All seeds and nuts were presoaked overnight). 1315 Lunch. Chapatti sandwich, romaine lettuce, 1/2 avocado, bowl of split pea soup from dried split pea flakes. 1430 Em, mvkd with brown and firm stools, uri/nor. 1455 Spin, 1 gl/ca/ap/ju. 1525 2 maitake caps, 1 gl/ca/ap/ju. 1630 400 IU vit E, 1 gl/ca/ap/ju. 1640 BM-mvpo. 1730 8 oz herbal tea, 2 maitake tabs. 1830 Dinner. Brown rice, raw carrots, raw celery, and olive oil cooked onions. 2200 Shower, Em-mvpo, Spin, bed.

11/28/96 Thur 0230 Woke up smelling and tasting BBQ ribs. Uri/nor. 0400 Woke up with same BBQ ribs sensation. Removed Orgone blanket and resumed sleep. Used Stim. 0830 Woke and fell back to sleep, felt cold without Orgone blanket, closed window. 0930 8 oz herbal tea. 0940 400 IU vit E, 1 Tbs Vital K, 2 450 mg b/g algae caps, 2 maitake caps, 25,000 IU vit A tab, 1 veg enzyme tab, 20 drops milk thistle extract, 1 gl/ca/ap/ju. 1000 Feeling better, head pressure, leg, and back aches less painful. 1005 Breakfast. 1 Fuji apple, handful grapes, 1 banana. 1100 1 gl/ca/ap/ju. 1105 Em-mvkd, soft stools. 1200 8 oz herbal tea. 1215 2 maitake caps, 400 IU vit E, 2 450 mg b/g algae caps, 1 veg enzyme tab. 1300 Lunch. Chapatti sandwich, romaine lettuce, 1/2 avocado. 1500 1 gl/ca/ap/ju, 2 maitake caps. 1542 Severe headache. One Orgone pillow was placed under feet and one behind head. Headache gone within five minutes. 1550 Coil-3 pulses each gland location, minimum of 4 seconds apart (coil assembled by Tracy). 1630 Em-mvkd, brown, firm. 1700 Ca/ap/ju, 2 maitake caps. 1800 8 oz herbal tea. Wt 146. 1830 Dinner. Brown rice mixed with raw carrots and celery, baked potato, split pea soup. 2000 1 cup catnip tea. 2130 1 bowl popped brown rice cereal, wheat bran, rice bran, 3 Tbs lecithin, rice milk. 2200 Em-mv0, Uri/nor. Bath, Spin, bed.

11/29/96 Fri 0300 Restless, homesick. Pain in left foot, left side hurts. Used Stim on foot, stomach, mouth, and legs. Pain on left side relieved, but foot still hurts. Sores on inside and outside of lip hurts. 0400 Uri/heavy. Wt 146. 0730 Uri/nor. 0800 8 oz herbal tea, 400 IU vit E, 1 Tbs Vital K, 2-450 mg b/g algae, 2 maitake caps, 25,000 IU vit A, 1 enzyme tab, 20 drops milk thistle extract, 1 pantothenic acid tab, 1 gl/ca/ap/ju. Wx 44 deg o/c. 0830 Breakfast. 1 banana. 0930 Acupuncture treatment, herbal tea refill. 1100 1 gl/ca/ap/ju. 1130 8 oz glass herbal tea. 1150 2 maitake caps, 400 IU vit E, 1-450 mg b/g caps, 1 veg enzyme tab. 1155 Uri/nor. 1200 Lunch. 1 chapatti sandwich with romaine lettuce, avocado, handful sun/ses/alm nuts. 1315 Em-mvpo. Stomach swollen, sore on outside of upper lip, inside mouth hurts. 1 gl/ca/ap/ju, Spin. 1430 2 maitake caps, 1 gl/ca/ap/ju, sun/ses/alm. Coil with 3 pulses, 4 seconds apart, 1 gl/water. 1600 400 IU vit E, 1 gl/ca/ap/ju. 1700 8 oz gl herbal tea, 2 maitake caps. 1720 Dinner. Bulgar wheat cooked in olive oil and water. Onions cooked in olive oil and added to dish with raw carrots, raw celery. 1 gl/ca/ap/ju. 2000 1 bowl of popped rice cereal mixed with raisins, rice/wheat bran, and rice milk. 2230 Em-mvpo, Spin.

11/30/96 Sat 0100 Very homesick, depressed, some crying. Used Stim. 0400 Uri/nor. 0900 8 oz. herbal tea. Wx o/v 48 deg Wt 142. Left foot much better. 0930 400 IU vit E, 1 Tbs Vital K, 2 450 mg b/g algae

caps, 2 maitake caps, 25,000 IU vit A, 1 veg enzyme tab, 20 drops milk thistle extract, 1 pantothenic acid tab, 1 gl/ca/ap/ju. 0945 Breakfast. 1 Fuji apple, 1 banana, 1 gl/ca/ap/ju. 1155 Uri/nor. 1210 8 oz gl herbal tea, 2 maitake caps, 400 IU vit E, 2 450 mg b/g algae caps, 1 veg enzyme tab, Spin. 1230 Lunch. Pita bread sandwich with romaine lettuce and avocado. 1 gl/ca/ap/ju. 1300 Went visiting and shopping. Feeling good. Wx 49 deg rain. 1555 Uri/heavy. 1600 400 IU vit E, 2 maitake caps, 1 gl/ca/ap/ju. 1715 Em-mvex. Felt sick to stomach, but okay in 15 minutes. 1755 8 oz. gl herbal tea, 2 maitake caps. 1815 Dinner. Baked potato, lightly steamed broccoli shoots and flowerettes, 1 broiled red salmon steak. 2000 1 bowl rice bran, wheat germ, 3 Tbs lecithin with rice milk. 2030 Watched comedy movie. 1 gl water with 3 squirts lemon juice. 2300 Applied Rife analog frequency generator loaned to us by Nick, the physicist. 32,750 Cycles for 5 minutes, 36,750 Cycles for 5 minutes. 3 by 1 1/2 inch electrodes placed on side of body with negative on left side. Wx 48 deg rain. 2330 Shower and bed.

12/1/96 Sun 0345 Continuous coughing. Wx 44 deg o/c. 0400 Coughing persisting, runny nose. Closed window, turned off ion generator, set up in bed, house heat turned on, 1 Tbs Mylanta. 0410 Still coughing. 1 Tbs Nyquil, still sitting up. 0415 Coughing lessen, remaining upright in bed. 0425 Ion generator back on. No further coughing. Window reopened, house heat turned off. 0930 BM-mvpo, uri/po. Used Stim. 1030 8 oz gl herbal tea. Very hungry and tired. 1045 Spin. 1122 400 IU vit E, 1 Tbs Vital K, 2 450 mg b/g algae caps, 2 maitake caps, 25,000 IU vit A, 1 veg enzyme tab, 20 drops milk thistle extract, dowsed all herbs and vit with pendulum, pantothenic acid indicated negative, discontinued use. Sore on outside lip worse. Used Rife's analog freq machine with various frequencies on mouth, throat, and breast. 1135 Breakfast. 1 Fuji apple, 1 banana. 1230 8 oz gl herbal tea. 1250 Uri/nor. Wt 147 Wx clear 46 deg. 1315 Lunch. Pita bread sandwich with romaine lettuce, avocado. Handful sun/ses/alm. 1340 Uri/po, feeling much better. 1400 Walked two miles around Green Lake. Went sightseeing. Felt good, a little sore. 1615 2 maitake caps, 1 gl ca/ap/ju, handful sun/ses/alm. 1625 Em-mvex. 1730 8 oz herbal tea, one plain slice homemade stone ground wheat bread. 1745 2 maitake caps, 400 IU vit E, 1 gl/ca/ap/ju. 1800 Dinner. Brown rice with raw celery, raw carrots, boiled onions. 2000 Rice bran with rice milk and sun/ses/alm. 2010 Watched comedy video. 2200 Bed, shower, Spin, used Stim.

12/2/96 Mon 0315 Woke up under Orgone blanket feeling like being stuck with needles. Removed blanket. Used Stim. Homesick and feeling healthy and strong. 0930 Placed coil on chin and side of head to relieve head and throat pain, 3 pulses with 4 seconds each pulse. Wx rain 40 deg. 0945 Uri/nor. BM-mvvd, but color dark green, first change in color from brown. Head and throat pain persisting, coil no immediate help this department. 0950 8 oz herbal tea. 0955 Stim, pressure in head almost gone. 1035 400 IU vit E, 1 Tbs Vital K, 2 450 mg b/g algae, 2 maitake caps, 2 25,000 IU vit A, 2 veg enzyme tab, 20 drops milk thistle extract, 1 pantothenic acid tab, 1 gl/ca/ap/ju. 1045 Breakfast. 1 Fuji apple, 1 banana. 1212 Spin.

1230 8 oz herbal tea. 1235 Uri/po. 1300 400 IU vit E, 2 maitake caps, 1-450 mg b/g algae caps, 1 veg enzyme tab, 1 gl/ca/ap/ju. Headache. 1315 Lunch. Pita bread sandwich with romaine lettuce and avocado, handful sun/ses/alm. 1340 2 maitake caps, 1 gl/ca/ap/ju. 1345 Used Stim, Orgone pillow (one on feet, one behind head)

for severe headache. 1355 Headache almost gone. Went shopping. 1700 Em/mvvd, uri/nor, headache completely gone. 1715 8 oz glass herbal tea. 1730 400 IU vit E, 2 maitake caps, 1 gl/ca/ap/ju. 1 745 Dinner. Mashed potatoes made with rice milk, olive oil. Gravy made with Cambells packaged onion soup stiffened with corn starch. Sliced carrot. 1800 Watched comedy video. 1840 Uri/nor. 1845 Coil, six seconds between pulses, 3 pulses each gland location. 1900 1 gl artesian water. 2000 Spin. Evening. Sewed on Orgone single layer acrylic felt vest. 2230 Bath, wt 146, bed.

12/3/96 Tues 0300 Used Stim back pain, uri/nor. 0830 8 oz gl herbal tea. Wt 144 Wx snow on ground, clear. Best sleep since arrival. 0910 400 IU vit E, 1 Tbs, Vital K, 2 450 mg b/g algae caps, 2 maitake caps, 25,000 IU vit A. Discontinued pantothenic acid tabs, (dowsed negative) sore outside lip stabilized, but showed signs of blistering, inside mouth okay, 2 veg enzyme tabs, 20 drops milk thistle extract, 1 gl/ca/ap/ju. Used Stim on leg and wrist. 0915 BM-mvex, uri/nor. 0920 Breakfast. 1 Fuji apple, 1 banana. 0948 Noticed fingernails splitting vertically on 5 fingers. Applied vit E gel to nails and lip. 0956 Spin. 1015 1 gl/ca/ap/ju. 1130 Acupuncture appointment, usual treatment of ten needles from stomach to feet. Received Hair Regen caps for split nails, 9 per day, 3 per after meals. Comment: This was the last appointment due to forthcoming Beck research protocol with zapper—high hopes. At this point of the current therapy, we feel we are gaining on the situation because Norene not only feels better, but is stronger. However, at this rate even if we do succeed, it may take us some time to get her to where she can handle everything herself. We read where Dr. Robert Beck's zapper and coil protocol with HIV patients has produced HIV spontaneous remissions in a short period of time (21 days) so we are going to use this process as soon as the zapper arrives. 1341 8 oz gl herbal tea. 1415 Lunch. Pita bread sandwich with romaine lettuce, 1/2 avocado. 2 maitake caps, 400 IU vit E, 1-450 mg b/g algae caps, 1 veg enzyme tab, 1 gl/ca/ap/ju. 3 Hair Regen caps. 1435 Rife's analog freq generator. Freq 728 for three minutes with positive electrode on breast and negative just below navel. 1510 1 hr walk around Green Lake 3 miles, felt good. 1715 8 oz gl herbal tea. 1745 2 maitake caps, 400 IU vit E, 1 gl/ca/ap/ju. 1750 Dinner. 1 baked yam, spinach lightly steamed, 2 boiled eggs with sliced homemade whole wheat bread, slight upset stomach. 1805 3 Hair Regen caps. Em-mvex. Wt 147. Evening. Sewed on Orgone vest made with acrylic felt. 1915 Rife's analog freq generator for 3 minutes to lips with positive electrode placed below navel. Frequency 5k used. 2230 Bath, bed. Felt very homesick and depressed. Installed 2 by 6 inch clear quartz crystal attached to apex of pyramid over bed pointing downward.

12/4/96 Wed 0400 Uri/nor. Restless, depressing dreams still in vivid color. Perspiration unusually heavy. 0545 Severe anxiety attack. Depression along with lucid bad dreams. Awoke feeling extreme despair and homesickness. Complained vehemently and loudly for 10 minutes mostly about not knowing what was happening to body and feeling lonely. Returned to bed still feeling despair. Company made available to talk to. 0605 Left bed while conversing, extreme pain throughout left arm ending at tip of 3rd finger. While walking towards door, noticed 1/2 inch blue spark of electricity flowing outside of nightgown from left shoulder down arm and exiting 3rd finger into air. Hand went numb. Hand and 3rd finger was massaged until feeling returned. Bathtub filled with hot water.

Entered tub for soaking ten minutes later. While sitting in tub, reached towards faucet to turn off water and another 1/2 inch blue electrical spark left finger tip and grounded to faucet. Became calm after sitting in hot water ten minutes. 0640 Rife's analog freq generator to relieve pounding in head, freq 20 cycles for 3 minutes with electrodes placed on temples. Pounding subsided slightly. While electrodes were on temples, a fast moving, snake-like wave pattern just in front of face moving from left to right was observed. This was a pattern in vivid red and blue color and was quite beautiful. Returned to bed. Pyramid had been dismantled while in tub. Slept under Orgone blanket until 0815. 0820 8 oz glass herbal tea. Disposition good, feeling better but uncertain. Tracy said I overdosed under pyramid. Discontinued pyramid over bed. Wx rain Wt 144. 0830 Rife's analog freq generator, 3 minutes each frequency. Comment: For pain above neck, electrodes were placed either above the neck or on the neck. For pain below neck, positive electrode was placed below navel and negative on breast. Location was determined by frequency list with reference to specific cures. Frequencies used: 10k, 787 cycles, 727 cycles. 0912 400 IU vit E, 1 Tbs, Vital K, 2-450 mg b/g algae caps, 2 maitake caps, 25,000 IU vit A, 1 veg enzyme tab, 20 drops milk thistle extract, 1 gl/ca/ap/ju. 0920 Breakfast. 1 Fuji apple, 1/2 # grapes, 3- Hair Regen caps. 1030 Em-mvex, uri/nor. 1040 1 gl/ca/ap/ju. 1150 Spin. 1155 Handful sun/ses/alm. 1245 8 oz herbal tea. Used Stim on same acupuncture needle placements. 1318 2 maitake caps, 400 IU vit E, 2 450 mg b/g algae caps, 1 veg enzyme tab, 1 gl/ca/ap/ju. 1325 Lunch. Dried lentil flake soup, pita bread sandwich with romaine lettuce and 1/2 avocado. 1345 Rife's analog freq generator. Following frequencies used hereafter for 3 minutes each. All with positive electrode placement below navel and negative on breast except 2112 throat, 3117, 3502 cheeks. Freqs used: 20, 120, 727, 776, 787, 5k, 1550, 1560, 2127, 2128, 2112, 3117, 3502, 10k, 32,750, 36,750. 1459 2 maitake caps, 1 gl/ca/ap/ju. 1615 400 IU vit E, 1 gl/ca/ap/ju, 3 Hair Regen caps, continuous itchy nose, 3 hours. 1620 Coil, 3 pulses each, 6 seconds between each pulse. 1635 8 oz gl herbal tea. 1730 Dinner. Bulgar wheat cooked with pre boiled onions, water, and olive oil. 3 slices of raw cucumber. 1750 3-Hair Regen caps, vit E gel on fingernails. 1900 2 maitake caps, 1 gl/ca/ap/ju. Stim to acupuncture spots. 1915 Spin, 1 Tbs Mylanta, stomach ache-probably from cucumber-no more of those. 2200 Very hot bath water soaking in tub, bed.

12/5/96 Thurs 0200 Coughing. 1 teaspoon Nyquil, remained upright and read for 30 minutes. 0600 Stomach aches and very bloated. Heart pounding, head pounding, ache all over, especially left arm. Used Stim, exercised arm and returned to sleep. 0830 Woke up feeling terrible. 8 oz herbal tea. Wx cloudy 42 deg. 0840 Coil, 3 pulses each area, ten seconds between. 0918 Breakfast. 1 Fuji apple, 1 banana, cluster grapes. 0930 400 IU vit E, 1 Tbs Vital K, 2-450 mg b/g algae caps, 2 maitake caps, 25,000 IU vit A, 1 veg enzyme tab, 20 drops milk thistle extract, 1 gl/ca/ap/ju. 0947 3- Hair Regen caps, Spin. 1115 1 gl/ca/ap/ju. 1200 8 oz herbal tea. 1235 400 IU vit E, 2-450 mg b/g algae caps, 3 maitake caps, 2 veg enzyme tablets. 2-1000 b/g algae caps, 3 maitake caps, 2 veg enzyme tabs. 1240 Lunch. Dried flake split pea soup mixed with brown rice, cooked onions, and raw carrots. 1319 1 boiled egg followed by slightly upset stomach. Discontinued eating eggs. 1340 Em-mvex, uri/nor. 1406 3 maitake caps, 1 gl/ca/ap/ju. Afternoon. Went shopping. Disposition very good, feeling good. 1630 400 vit E, 1 gl/ca/ap/ju. 1710 8 oz

herbal tea. 30 drops Concen Trace Mineral henceforth is added to each 1 gallon water in addition to 8 drops Crystal Energy. 1741 Dinner. Brown rice mixed with boiled onions, raw carrots and raw celery. 1810 Spin, 3 Hair Regen caps. 2005 Popped brown rice cereal with rice bran, sun/ses, and rice milk. 2100 Soaked fingernails, left hand in pyramid water 20 minutes, applied vit E to nails. 2200 Soaked in bath tub, applied Stim to all acupuncture spots. 2215 Em-mvxd, uri/nor. 2230 1 Tbs Mylanta, stomach swollen and sore, lip sore still hurts.

12/6/96 Fri 0100 Uri/nor. Pounding on left side of head, appears to come from deep inside. Cold, ache all over and restless. 0830 8 Oz gl herbal tea. Wt 145 Wx rain 42 deg. 0900 400 IU vit E, 1 Tbs Vital K, 2 450 mg b/g algae caps, 2 maitake caps, 2 enzyme tabs, 20 drops milk thistle extract, discontinued 25,000 IU vit A (dosed negative), 1 gl/ca/ap/ju. 0910 Breakfast. 1 Fuji apple, 1 banana. 0945 BM-mvex, Uri/nor, 3 Hair Regen caps. 1125 1 gl/ca/ap/ju, Spin. 1200 8 oz herbal tea. 1225 3 maitake caps, 400 IU vit E, 1-450 mg b/g algae caps, 1 veg enzyme tab. 1247 Lunch. Pita bread sandwich with brown rice, raw carrots, boiled onions. Dried flake split pea soup mixed with same ingredients in sandwich. 1300 Homemade zapper on left arm for fifty minutes. Malfunction and wrong placement with wrong type of electrodes caused 4 electrical burn holes 3/8 inch in diameter in left forearm. Electrodes from Rife machine were used. Treated burn spots and area with aloe vera gel, vit E gel. Discontinued the therapy with this machine. Comment: This first machine was improperly assembled by a relative, and we used it incorrectly. At approximately 1330 I received information from my friend Nick about a source (360-412-6432) who had a proper research machine with the necessary instructions on how to use it. I purchased this machine and we continued the protocol at 2000. We have since come across an additional source at 1-800-224-0242. 1415 Em-mvxd. 1430 1 gl/ca/ap/ju, Spin. 1600 3 maitake caps, 400 vit E, 1 gl/ca/ap/ju, 3 Hair Regen caps. 1745 Coil, 3 pulses, 10 seconds apart, 8 oz herbal tea. 1800 Dinner. Baked potato with left over brown rice, raw carrots, boiled onions, and raw celery. 1830 3 Hair Regen caps. 2000 Placed new zapper with its electrodes to lower ankle for 20 minutes and right wrist for 20 minutes. Treated left arm burns in mixed pyramid/sil/col water for twenty minutes. Covered burn marks with gauze soaked with vit E gel. 2300 Em/mvpo. Uri/nor, bed, wt 144.

12/7/96 Sat 0300 Used Stim for terrific pounding in head, pounding and pain decreased, uri/nor. 0830 Woke up feeling great, no pains, great disposition. Rain 44 deg wt 144. 0900 8 oz gl herbal tea, 3 maitake caps, 400 IU vit E, 1 450 mg b/g algae caps, 2 veg enzyme tabs, 1 Tbs Vital K, 20 drops milk thistle extract. 0910 Soaked injured arm same as before. 0945 Breakfast. 1 Fuji apple, 1 banana. 1015 Rife's analog machine with same wave pattern observed again. 1130 1 gl/ca/ap/ju, 3 Hair Regen caps. Sore on lip improving slightly. 1150 8 oz gl herbal tea, Spin. 1200 3 maitake caps, 400 vit E, 1 450 mg b/g algae caps, 1 veg enzyme tab. 1215 1 8 oz gl/sil/col/wa. 1230 Lunch. Pita bread sandwich with romaine lettuce, 1/2 avocado, and left over brown rice mix, 1 bowl dried flake split pea soup with left over brown rice mix. 1509 1 gl/ca/ap/ju, 3 Hair Regen caps. 1610 Uri/nor, BM-mvpo. 1620 3 maitake caps, 400 IU vit E, 1 gl/ca/ap/ju, Spin. 1730 8 oz. herbal tea. 1800 Dinner. Cooked buckwheat with raw carrots, raw celery, raw turnips. 1830 Application procedure for zapper and coil protocol calls for detoxification of all herbs and excess vitamins. Detox period will begin at this point

in time. 1835 Uri/nor. 1910 Uri/nor. 2030 Uri/nor. 2100 Uri/nor. 2145 Uri/nor. 2230 Hot bath. BM-mvkd, uri/nor. Comment: We never did figure out why Norene all of a sudden had a weak bladder, just another unexplained happening. We put it in the same category as her skin turning bright red for fifteen minutes at the most whenever she had pressure exerted against it.

12/8/96 Sun 0300 Used Stim for lower back pain, uri/nor, 1 gl/ca/ap/ju mixed with sil/col/wa, returned to sleep. 0400 1 gl/ca/ap/ju with sil/col/wa, Stim. 0430 Pain gone, returned to sleep. 0730 Lower back pain, Stim. 0830 Breakfast. 1 Fuji apple, 1 banana, 3 maitake caps. 0845 Uri/nor. 0900 Soaked arm in sil/col/wa mixed with pyramid water for 30 minutes. Repeated process to sore lip. 1000 Uri/nor. 1055 BM-mvkd, uri/nor. 1200 Lunch. Pita bread sandwich with 1/2 avocado, romaine lettuce. 1230 3 maitake caps. 1245 Uri/nor. 1300 1 gl/ca/ap/ju/ with sil/col wa. 1400 Uri/nor. 1505 Uri/nor. 1600 1 gl/ca/ap/ju/ with sil/col wa. 1630 3 maitake caps. 1700 Uri/nor. 1800 Dinner. Left over buckwheat meal, baked yam, broccoli slightly steamed. 1830 Uri/nor. 1945 Uri/nor, BM-mvpo. 2100 1 gl/ca/ap/ju with sil/col/wa. 2130 Treated arm and lip with sil/col/wa. 2200 Uri/nor. 2230 Hot bath in tub, uri/nor, bed.

12/9/96 Mon Woke up 3 times during night and urinated, 1 gl/ca/ap/ju with sil/col/wa. Stim. 0830 Breakfast. 1 Fuji apple, 1 banana. Wt 142. 0845 3 maitake caps. 0930 Rode downtown for T cell count test. 1154 4 oz sil/col/wa. 1220 Lunch. 2 pita bread sandwiches with romaine lettuce, avocado, and left over buckwheat. 1308 BM-mvkd, uri/nor. 1400 Walked 3 miles around Green Lake, one hour. No headache after first 1/2 mile, wx clear 50 deg, feel great. 1605 Soaked arm 30 minutes with sil/col/wa mixed with pyramid water followed

by vit E soaked gauze wrap. 1605 1 gl artisan water. 1700 1 gl/ca/ap/ju with sil/col/wa. 1800 Dinner. Mashed potatoes made with olive oil and rice milk, Cambells packaged onion soup mixed with boiled onion slices and corn starch as a stiffener for gravy. Lightly steamed spinach. 2105 1 slice spelt bread with fresh ground peanut butter. 2200 Uri/nor, tired, lower back pain, hot bath, bed.

12/10/96 Tue 0300 Stim on lower back, uri/nor. 0730 Uri/nor. 0820 1 8 oz gl/sil/col/wa. 0830 Em/mvkd. Stomach slightly swollen. 0855 Breakfast. 1 Fuji apple, cluster grapes. 0900 Soaked arm in sil/col with pyramid water for 45 minutes followed by gauze soaked in vit E gel. Wx 48 deg, partly cloudy. 0940 Slight cough. 1 Tbs Delsym. 1 gl artisan water. Wt 144. 1013 Rife's analog machine. 1115 Super drowsy with very dry throat. Slept for 30 minutes. 1139 2 maitake caps. 1200 Lunch. Dried flaked split pea soup with left over buckwheat meal, handful sun/ses/alm. 1525 1 gl/ca/ap/ju with sil/col/

wa. 1530 Soaked arm in sil/col/wa with pyramid water for twenty minutes. 1558 2 Tbs Pepto Bismol. 1657 Dizzy, small stomachache, 1 chapatti. 1715 Feeling better. 2 maitake caps. 1735 Dinner. Organic spaghetti, lightly steamed broccoli stems and flowerettes, raw carrots, raw celery, potato salad made with carrots, celery, and small amount of Cardini Caesar salad dressing. 1850 2 maitake caps. 2000 Soaking arm in sil/col with pyramid water. Vit E gel on gauze. 2230 Hot bath, uri/nor, bed.

12/11/96 Wed 0300 Stim, 1 Tbs Pepto Bismol, uri/nor. 0800 1 gl/sil/col/wa, 1 Tbs. Pepto Bismol. Wx 44 deg cloudy. Feeling good. 0830 Breakfast. 1 Fuji apple, 1 banana. 0910 1 gl/ca/ap/ju with sil/col/wa, 2 maitake caps. 1015 Uri/nor. 1215 Lunch. Dried flaked split pea soup, two pieces homemade wheat bread. 1420 1 gl/ca/ap/ju with sil/col/wa. 1545 Handful ses/sun/alm. 1730 Feeling weak and lower back hurting. Took 2 Tbs Pepto Bismol, went to bed under Orgone blanket, Stim. 1745 BM-mvpo with dark brown stools, Stim on lower back. 1755 Feeling better, 1 gl artisan water. 1830 Dinner. Organic

frozen French fries baked, lightly steamed sliced broccoli stalks. 1920 1450 mg. B/G algae caps, Spin. 2000 Snack. 1 pita bread with left over broccoli, and left over spaghetti. 2015 Discontinued Pepto Bismol, read label and found it's the cause of dark stools. Soaked arm sil/col/wa with pyramid water. 2130 Soaked in hot bath, uri/nor, bed.

12/12/96 Thur 0400 Uri/nor. 0815 1-1000 mg b/g algae tab, slept very good. 0915 BM-mvex with black firm stool, back hurts slightly, uri/nor. 1030 1 gl/ca/ap/ju, Spin. 1108 Soaked arm in sil/col/wa with pyramid water for 30 minutes. 1115 1 banana. 1140 Face flushed with slight temperature, normal occurrence, lasts about 15 minutes. 1150

Received results from t-cell lab test. Comment: Results are encouraging, but not as much as we'd hoped for. The WBC count is up which to us means that Norene's immune system is producing cells to fight off the infection she is experiencing and her th/ts ratio has shown improvement. We did not get a PCR test at this time due to its cost. However, we are looking forward to this test soon. 1315 Lunch. Pita bread with broccoli, carrots, celery. 2 bowls dried flaked split pea soup with spaghetti, carrots, and celery. 1510 1 gl/dis/wa. Uri/nor. 1540 Began zapper protocol applying electrodes to ankles after soaking the electrodes with a salt water solution. Amplitude turned up until tingling sensation felt and then amplitude turned down slightly with still enough current to feel it. Session lasted 20 minutes. 1620 1 gl/dis/wa. Henceforth distilled water is used only with Crystal Energy drops. 1625 BM-mvex, stools still black, uri/nor. 1700 Coil, two pulses each gland section with ten seconds between

PNT #:		NAME:	BILL#:	
LOC:	OCC:	AGE:	Specimen collection date/time	
SEX:	FEMALE	58Y		
DIAGNOSIS:	LABORATORY EXAMINATION	Units	Spec	Limits Acen# Status
st/Res Name	Collected			
RO MISCEL 11	11/07/96 12:37		SR	13717
MISCELLANEOUS NOTE 12				COMPLETE
11	HIV RNA VIRAL LOAD			
12	HIV-1 RNA BY PCR QUANT (VIRAL LOAD) RESULT IS 3763*			
	REFERENCE RANGE IS (400 COPIES/ML)			
	HIV-1 RNA BY PCR (LOG ₁₀) RESULT IS 3.6*			
	REFERENCE RANGE IS <2.6			
	TEST PERFORMED AT SPECIALTY LABORATORY			
CELL ASSAY 11	11/07/96 12:36		WB	25867
COMMENT NOTE				COMPLETE
11	FXED TO 1.0.95			
CP18	11/07/96 12:36		SR	15220
TOT. PROT.	7.9	G/DL		6.4-8.1 COMPLETE
ALBUMIN	4.1	G/DL		3.6-4.8 COMPLETE
CALCIUM	9.9	MG/DL		8.9-10.2 COMPLETE
PHOS	3.2	MG/DL		2.6-4.5 COMPLETE
CHOLESTEROL	385. *	MG/DL		178.-258. COMPLETE
TRIGLYC.	194. *	MG/DL		18.-198. COMPLETE
URIC ACID	5.9	MG/DL		2.8-6.3 COMPLETE
CREATININE	1.0	MG/DL		0.7-1.2 COMPLETE
TOT. BIL	0.51	MG/DL		0.10-0.88 COMPLETE
ALK. PHOS.	145. *	U/L		33.-112. COMPLETE
LDH	576. *	U/L		296.-572. COMPLETE
SGOT (AST)	36.	U/L		5.-37. COMPLETE
SODIUM	139.	MMOL/L		136.-148. COMPLETE
POTASSIUM	4.3	MMOL/L		3.6-4.9 COMPLETE
CHLORIDE	100.	MMOL/L		100.-111. COMPLETE
CO2	27.3	MMOL/L		22.0-30.0 COMPLETE
BUN	16.	MG/DL		4.-28. COMPLETE
GLUCOSE	85.	MG/DL		69.-117. COMPLETE
A/G RATIO	1.1			1.0-1.7 COMPLETE
ANION GAP	12.0			6.0-15.0 COMPLETE

ACCOUNT NUMBER	ALL ACCOUNT NUMBER
PATIENT NAME	
ADDRESS	
CITY	
STATE	
ZIP	
PHYSICIAN NUMBER	DATE
81/15/97 17:21	01/03/97
RECEIVED	REPORTED
81/15/97 17:21	01/24/97 12:11
AGE: 59Y	SEX: F

algae tab. 0600 Left for airport. 0700 Breakfast. 1 Fuji apple. 0730 Left Seattle for Indiana TWA. 1600 Small package pretzels on airplane with 1 glass water. 1730 3 pieces chapatti bread. 2305 (Indiana time zone) 1 gl/dis/wa. 2320 Zapper, 20 minutes, coil. 1-1000 mg. b/g algae tab. 2355 Dinner. Mashed potatoes (prepared same as before), steamed carrots.

12/15/96 Sunday Comment: Without supervision that was furnished while in Seattle, some info is missing from this point on. 0130 Em-mvpo, Stim. 0135 Bed. Sleeping under Orgone blanket without house heat. 0800 1-1000 mg b/g algae tab, 1 gl/dis/wa. Best sleep in a month. 0830 Breakfast. 1 Fuji apple. 1000 Arm looks completely healed, no scars. 1130 BM-mvex. 1200 1 gl/dis/wa. 1300 Lunch. 1 chapatti sandwich with left over mashed potatoes. 1 bowl lentil soup with raw carrots. 1405 1 gl/dis/wa. 1700 1 gl/dis/wa. Went shopping. 2045 1 gl/dis/wa. 2100 Zapper-35 min, coil. Slight back pain, but feeling very good. 2130 Uri/nor. 2140 1 gl/dis/wa. 2300 Dinner. Baked yams, steamed mustard greens and turnips. 2355 Uri/nor, bed.

TEST NAME	RESULTS	REFERENCE RANGES
IIV-1 RNA by PCR Quant	Less than 488	Less than 488 copies/mL
Less than 488 copies/mL is interpreted as "NOT DETECTED"		
IIV-1 RNA by PCR (log 10)	Less than 2.6	Less than 2.6

HIV-1 RNA QUANTITATION, PCR: Quantitative estimate of number of copies of HIV-1 RNA per mL of plasma tested by polymerase chain reaction amplification. Increases/decreases in the number of copies of viral RNA detected are associated with increases/decreases in plasma viremia.

Results for this test are for investigational purposes only and should not be used as a diagnostic procedure without confirmation of the diagnosis by another medically established diagnostic product or procedure.

pulses. 1715 1 gl/dis/wa, uri/nor. 1730 Dinner. Bulgar wheat made with olive oil, boiled onions, raw carrots. 1910 Soaked arm same as before. 1937 Uri/nor. 2000 1 pita bread with avocado, 1 gl/ca/ap/ju. 2010 Uri/nor. 2200 Soaked 15 minutes in hot bath mixed with 1 quart sil/col/wa, feeling good. 2210 Spin, uri/nor, bed. Comment: You may have noticed Norene isn't drinking the sil/col/wa because the way we understand the instructions, you don't want to overload the liver in case these little buggers start to die off in large quantities. And we're not so sure about her liver condition to begin with, so the sil/col/wa will wait.

12/13/96 Fri 0200 Uri/nor. 0415 1 gl/dis/wa, Stim. 0455 1 Tbs Mylanta. 0800 2 gl/dis/wa, 1-1000 mg b/g algae tab, 1 Tbs Mylanta. 0830 BM-mvxd. 0835 Breakfast. 1 Fuji apple. Wt 142 Wx cloudy 43 deg. Slight back pain. 0910 1 gl/dis/wa. 1030 Uri/heavy. 1130 1 gl/dis/wa. 1150 Rife machine. 1230 Uri/nor. 1313 1 gl/dis/wa, 1 gl/ca/ap/ju. Soaked arm same as before. 1348 Lunch. Pita bread with romaine lettuce and raw yams. 1358 Uri/nor. 1500 1 gl/dis/wa. 1523 Zapper, 20 minutes, electrodes placed on left wrist. 1550 Coil with two pulses ten seconds between pulses on each gland section. This will be the standard for the coil. 1501 1 gl/dis/wa. 1627 1-000 mg b/g algae tab. 1 gl/dis/wa. Placed vit E gel soaked pad on arm burns. 1630 Uri/heavy. 1707 Uri/nor. 1715 1 gl/dis/wa. Reminder: All water is first treated with Crystal Energy and stored in 1 gallon glass jugs under open frame pyramid. 1730 Dinner. Mashed potatoes and gravy made same as before, lightly steamed broccoli. 1910 1 gl/dis/wa. 1915 Em-mvxd, stools turning to brown from black. 1930 1 gl/ca/ap/ju, 1 1000 mg b/g algae tab. 2000 Finished 20 minute arm soak same as before. 2100 Uri/nor. 2105 2 gl/dis/wa, Spin. 2235 Bath, wt 143, back pain, bed.

12/14/96 Sat 0145 Uri/nor, Stim. 0530 Uri/nor, 1-1000 mg. b/g

12/16/96 Mon 0315 Stim to relieve back pain. 0600 1 gl/dis/wa. Lower back still hurting slightly, Stim, ret to bed. 0930 2-1000 mg b/g algae tabs, 1 gl/dis/wa. Wx rain 28 deg. Feel good with slight nasal drain. 1000 Breakfast. 1 Fuji apple. 1230 1 gl/ca/ap/ju, uri/nor, slight dizziness. Wt 143. 1300 Lunch. 2 chapatti mashed potato sandwiches. 1430 Spin. 1 gl/dis/wa. 1500 2-1000 mg b/g algae tabs. Feel flu coming on. Back pain completely gone. Em-mvxd. Dinner. Info missing. 2245 1 gl/dis/wa. 2300 Zapper-30 min, coil. 2335 1 gl/dis/wa.

12/17/96 Tue 0200 Uri/nor. 0430 Uri/nor, Em-mvpo, sore throat, Stim. 1000 2-1000 mg b/g algae tabs, 1 gl/ca/ap/ju, 2 gl/dis/wa, 1 Fuji apple. 1220 1 gl/dis/wa. Feeling better. 1325 Lunch. 1 gl/ca/ap/ju. 2 chapatti with mashed potatoes. 1430 BM-mvxd, Spin. 1500 1 gl/dis/wa, uri/nor. 1600 1 gl/dis/wa. 1645 1 gl/ca/ap/ju. 2100 Zapper-30 min, coil. 2140 Uri/nor. 1 gl/dis/wa. 2148 Dinner. Lintel soup with raw carrots. 2240 Spin. 2315 Bath, 1 gl/dis/wa, Em-mvpo, uri/nor, bed.

12/18/96 Wed 0100 2 gl/dis/wa, sore throat getting worse, used Orgone pillows on neck. 0200 1 gl/dis/wa, sore throat persisting, opened bedroom window and door, Stim to relieve pain in throat. 0535 Gargled with warm sea salt water, Stim on sore throat. 0830 Gargled with warm sea salt water, sore throat diminishing. Aired Orgone blanket. 0940 Breakfast. 1 Fuji apple, 1 banana. 1230 Lunch. 2 chapatti sandwiches with left over carrots and mustard greens. 1300 BM-mvxd. 1430 gl/dis/wa. 1450 Zapper-1 1/2 hours, coil. 1615 1 gl/dis/wa, uri/nor. 1800 1 gl/dis/wa. 2130 1 gl/dis/wa, sore throat worse, inside mouth swollen and very sore. Stim to relieve pain and went to bed. 2315 Dinner. Left over brown rice, baked yam. 2 1000 mg b/g algae tabs, 400 IU vit E, 1 gl/dis/wa. Reminder: All water has Crystal Energy added and is stored under various open frame pyramids.

My sister's routine after arriving home became repetitious, but at

odd hours. She continued with the zapper and coil protocol plus a minimum of 2 enemas, 6 to 10 glasses water, and 6 to 8 b/g algae each day. She played lots of bingo at the local bingo parlor, had a persistent sore throat which got worse, and like a child with her security blanket, continued to sleep under the Orgone blanket each night. She continued to get better and there were a few highlights: 12/19 Thur. Zapper time was brought up to 2 hours per day. 12/22 Sun. Began taking 1-400 IU vit E caps each day. 12/24 Tue. Assembled 8 1/2 ft open frame pyramid over bed so husband who enjoys dreams could dream in color. Worked better than he expected. 12/26 Thur. The ever-loving light bulb finally lit up as she began using colloidal silver water as a mouthwash and got rid of the sore throat the next day. 12/30 Mon. Upon waking up reached for Orgone blanket and had same blue static arc exit left hand as before. No pain and less scary this time, but decided not to sleep under pyramid again; however, husband continued. Discontinued Rife machine therapy.

1/1/97 Wed. Slight cold, but no sore throat. 1/2 Thur. Lost bladder control during night. 1/4 Sat. Flu like cold persisting. May be allergies, but had lots of energy. 1/6 Mon. Took PCR test, appetite increasing. Ate chocolate candy bar and shortly afterwards had severe headache in forehead lasting for two hours. 1/7 Tue. Blister formed in mouth. Gargled with colloidal silver water and it disappeared 2 hours later. 1/9 Thur. Placed one zapper electrode on left wrist and one on right wrist. Experienced electrical pain across face, chest and down through left leg. Switched back to left wrist only. Tremendous increase in appetite. 1/10 Fri. Immediate itchy, burning skin reaction from walking to mailbox in snow, wx. 28 degrees. Entire skin flushed to bright red and remained that way for two hours. Lost one day on zapper due to upgrade in machine. 1/11 Sat. Stomachache from homemade wheat bread. 1/12 Sun. Blister formed on tongue, used colloidal silver mouthwash and blister gone

in four hours. Began 48 hour period on zapper and coil machines. Having more natural bowel movements from ingesting pumpkin seed oil. 1/14 Tue. T-cell portion of PCR test returned and very favorable. Finished Beck's zapper and coil protocol. Only problem during the 48 hour period on zapper was remembering to apply salt water to electrodes every 20 to 30 minutes before they became too uncomfortable. Began ingesting colloidal silver water. Felt very good and looked good, fingernails completely healed. No pain anywhere. 1/29 Allergies began to worsen. 1/30 Found out PCR results were sent to Texas in error. Results showed: "HIV-1 RNA by PCR Quant less than 400 copies/ml is interpreted as "NOT DETECTED"

Norene made an appointment with her previous doctor to get authorization for test prescriptions as regulated by her insurance carrier. Norene's doctor told her he did not want to know what she had done to get the favorable results; whatever it was was wrong, and she should continue taking her medication. She did not volunteer any information. She had already decided to remain off his prescribed medications and continue the zapper and coil protocol if the virus became active again. She has since decided to go for Immortal Blood by returning to the zapper and coil on a daily basis with a slight reduction in the time.

I like my sister's attitude throughout the ordeal. It can be summed up with the following remark she made at Christmas, "Do you think we're getting rid of any of those bugs?"

I replied, "I don't know how it all really works, but I sure hope so."

She said, "I want to get rid of every last one of them damn bugs."

My motto in life has become: *Seek the truth and help yourself.* I'm sure some noteworthy person has already said that, so I don't lay claim to the phrase. However, since I started helping myself and my sister, I've made it a way of life. □

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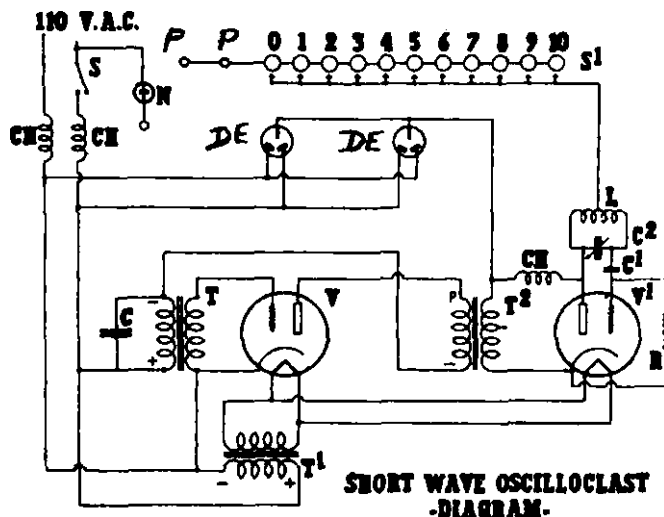
Oscilloclast Energies

by Thomas Colson, D.O., B.S., LL.B.

Due to the recent interest in the so-called "zapper" technologies, we are reprinting here Thomas Colson's "Oscilloclast Energies" originally printed in the March/April edition of *The Electronic Medical Digest*. For more information on this original Abrams technology, please see the bibliography at the end of this article.

TODAY'S tube Oscilloclast belongs to a class of electrically operated devices known as shortwave treatment instruments. Such instruments are divided broadly into high power and low power devices. The high power ones are arranged to produce heat in the treated tissues with the idea that the treatment results are due to the heat produced in the tissues. The outputs of these devices vary from a few hundred milliamperes (thousandths of amperes) to a few whole amperes.

The low power devices are arranged to provide outputs of only a microampere (millionths of amperes) to a few milliamperes. Such outputs are not enough to produce sensible heat in the treated tissues.



SHORTWAVE TRIO

The Oscilloclast belongs to the low power class. It differs from the conventional low power devices in that it produces three kinds of energy. One kind is the usual short wave; another kind is an impulse excited damped wave and the third kind is an alternating magnetic energy. All of these energies are of low power and, it is thought, act to help the body overcome pathology and restore normalcy in the tissues by utilizing characteristics of the low power energies them-

selves rather than to produce heat in the tissues.

REST

The short waves produced by the Oscilloclast are similar to those produced by other low power shortwave treatment instruments. However, other short wave instruments produce uninterrupted waves while the Oscilloclast provides waves which are chopped up into short trains. This permits rest periods between the wave trains. Each rest period lasts about as long as its preceding wave train. For

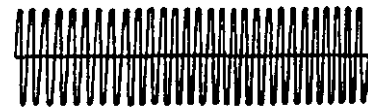


Fig. 1

instance, when the waves are chopped 90 times per minute, each wave train and each rest period lasts one third of a second.

PLAN

Referring more particularly to the diagram, the Oscilloclast is designed for operation on a 60-cycle, 110 volt alternating current. A switch "S" is provided to turn the instrument "on" and "off."

The two tubes V and V¹ are radio tubes No. 27 which may be found in most radio stores. The filaments of both tubes are heated by transformer T¹.

The diagram indicates two oscillating circuits. One circuit consists of the tube V and a tank circuit made up of a condenser C and the primary coil of a transformer T. The values of this condenser and this coil are such that the circuit VTC oscillates about 90 times per minute. Some Oscilloclasts may vary some from this rate of oscillation, but these variations do not affect the efficiency of the instruments.

CYCLES

The primary coil of transformer T² is connected to the plate circuit of tube V so that each time the low frequency circuit VTC oscillates, the secondary coil of transformer T¹ feeds current to the plate of tube V² to cause oscillations in the high frequency circuit made up of tube V¹ and a tank consisting of coil L and condenser C². The values of coil L and condenser C² are such that the high frequency circuit oscillates at a frequency approximately 43 megacycles per second, or in other words, about seven meters.

AUDIBLE

The tubes rectify or change the 60 cycle alternating current into

direct current but do not take the 60 times per second ripples out of the direct current. These ripples are purposely left in the treatment energy to modulate or vary the intensities of the seven meter waves. The 90 oscillations per minute of the low frequency circuit VTC, therefore, cause the output energy of the high frequency circuit

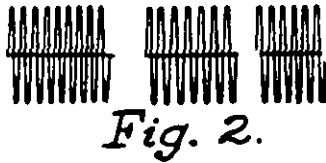


Fig. 2.

V¹LC² to be delivered in shortwave trains of modulated seven meter waves with short rest periods between the trains. One wire of an earphone connected to a treatment electrode will indicate the wave trains and rest periods. The humming heard in the phone represents the ripples in the seven meter waves. The humming is heard while the high frequency circuit V¹LC² is oscillating but not during the rest periods because this circuit is not oscillating in these rest periods.

WAVES

Shortwave instruments generally produce their treatment energies in unbroken or continuous waves such as indicated in Figure 1. The wave length of such energy is the distance between the tops of any two of these waves. The frequency is the number of waves passing a given point in one second. For instance, the 43 megacycle energy of the Oscilloclast would mean that 43 million of these waves are given off by the instrument each second and that these wave tops would be approximately seven meters apart.

RADIONIC

In Figure 2 the continuous waves are chopped up into short wave trains without changing the frequency or heights of the waves. This kind of chopping up continuous waves is done to produce the dots and dashes in the receivers in radiotelegraphy.

The high frequency waves in radiotelephony are not chopped up

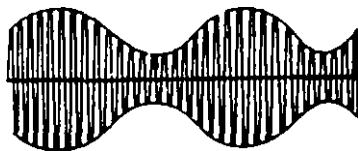


Fig. 3.

into shortwave trains as in radiotelegraphy but the broadcasting oscillators are so controlled that their high frequency waves have different intensities or heights as indicated in Figure 3.

If a line is drawn so that it touches the tops of all of the high frequency waves it will describe a wave form with the waves much longer than the high frequency waves. The high frequency waves are called carrier waves and the longer ones are called modulated waves (see Figure 4).

TELEPHONIC

The telephone or speaker diaphragms cannot vibrate fast enough to keep up with the vibrations of the carrier waves but can keep up with those of the modulated ones. The broadcasting waves are so controlled that the undulations of the modulation waves will produce the desired music, etc, in our receivers.

The energies of the Short Wave Oscilloclast have some of the characteristics of both radio telegraphy and radiotelephony. The high frequency waves produced by the oscillator circuit V¹LC² and conducted to the patient are chopped up into short waves because the low frequency circuit VTC feeds current to the plate of the tube V¹ during but half of each oscillation, approximately 90 times per minute. The wave trains are, therefore, about as long as the rest periods.

The short waves of the Oscilloclast, therefore, are chopped up into short impulses or wave [Fig. 5] trains and the high frequency waves in each train modulated by the 40 times per second ripples of the supply current. Thus it requires approximately 700,000 of the seven meter short waves to form each of the modulated waves shown in Figure 5.



Fig. 4.

SINE WAVES

The high frequency energies indicated in Figures 1, 2, and 3 are regular in form and called sine waves. The modulated wave in Figure 4 is formed by modulating the high frequency waves in Figure 3 and also is indicated as a sine wave. However, the 60 ripples

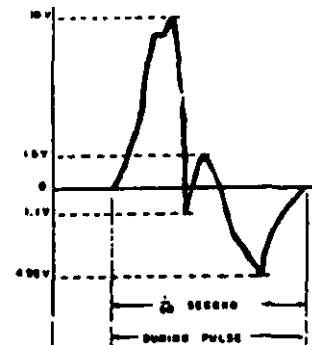


Fig. 5.

per second and other characteristics of the circuits of the Oscilloclast provide a modified sine wave or a wave which is not regular in form. Figure 5 is a copy of an oscillographic picture of one of the modulated Oscilloclast waves.

OSCILLOCLASTIC

The high frequency oscillation circuit V^1LC^2 is fixed against gross tuning in the laboratory but small tuning changes can be had by pressing in the different buttons, "1" to "10" inclusive shown in the diagram of the instrument. After the instrument has been allowed to operate for a few minutes, it becomes quite stable. With a patient connected in treatment, the frequencies of the stabilized instrument, aside from small errors, are:

- Button 0 = 43.000 Megacycles
- Button 1 = 43.245 Megacycles
- Button 2 = 43.296 Megacycles
- Button 3 = 43.322 Megacycles
- Button 4 = 43.338 Megacycles
- Button 5 = 43.346 Megacycles
- Button 6 = 45.350 Megacycles
- Button 7 = 43.352 Megacycles
- Button 8 = 43.354 Megacycles
- Button 9 = 43.356 Megacycles
- Button 10 = 43.357 Megacycles

The high frequency energies are delivered from the plates P.P. through a capacity coupling of the patient as is the case with all other shortwave treatments. At each of the tuning buttons is a 100 ohm noninductively wound resistance coil so that there will be not only the frequency changes indicated in the preceding paragraph, but there will also be a slight change in the modulation wave form and a slightly lower intensity in moving from button 1 to 10.

MAGNETIC

The Oscilloclast also provides an alternating magnetic energy. This energy is produced by the depolarizer electrodes DE. Each of the latter is made up of a coil of fine wire on a central iron core and the back of the case is of iron and secured to the central core. The front half of the case is of brass so that the magnetic lines of force are free to enter the patient. The brass front of the case is marked "treating side."

The coil of fine wire is connected across the 60 cycle 110 volt current supply so that the magnetic field produced has 120 changes in polarity per second. The strength of the magnetic field at the front of the case is approximately 80 gauss. Magnetic energy becomes weaker as the distance from the magnet is increased. This decrease in strength is according to the square of the distance so that the "treating side" should be placed on or very close to the area to be treated.

DEPOLARIZER

It will be noted that there are three connector points in the plug which connects each cord of a depolarizer electrode to the Short-wave Oscilloclast. Two of these points are brass and connected with the ends of the magnet coil to energize the latter. The third point is black and connected to the "treating side" of the case of the electrode. This permits a part of the output of transformer T² to go to the case of the electrode so that approximately 90 impulses per minute from the low frequency oscillatory circuit VTC is conducted to the "treating side" of each electrode as well as the alternating magnetic energy. A choke coil CH is placed in the lead going to the

plate V¹ to prevent the high frequency waves (seven meter waves) from going to the depolarizer electrodes.

EXTRA ENERGY

In addition to the Oscilloclast energies already described, there is a very small part of the 60 cycle supply current which reaches the patient. This current passes by induction between the primary and secondary coils of the transformers and by conduction over the other parts of the circuits to all of the electrodes. This current passes from the electrodes to the patient by a capacity coupling when there is clothing or other dielectric material between the electrode and the patient, and by conduction when the electrodes touch the skin of the patient. When the electrodes are on the skin, enough current passes to light up a one-fourth watt neon lamp. Progressively less current is passed to the patient as the distance between the patient and the electrodes is increased. □

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HUMAN ENERGY by Albert Abrams, A.M., LL. D., M. D., (1914). #B0211, Illustrated, 204pp, staples ... \$4.95

CERTAIN BODY REFLEXES by I.H.A., July 1926. #B0011, 46pp, staples, ... \$5.50

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The Pundit Curmudgeon

Preliminary Reactions to Kaali et al
US Patents 5,139,684 and 5,188,738

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Peter Lindemann recently surprised me by his excellent, thought provoking article in the last issue of *Borderlands* regarding recent developments in connection with a particular type of device for "purifying" human blood by passing it through an electric field. Much of this article

was devoted to the Kaali and Schwolsky US patent 5,188,738. The article at least implied that this patent was an impediment to the manufacture and use of such devices in the USA. During the initial work in the preparation of this column it was learned that it should be considered with another patent in the name of the same inventors, the patent 5,139,684.

A conversation with Peter confirmed that *Borderlands* readers might be interested in the results of a preliminary review or investigation of this particular patent to see if in fact it does appear to present such a barrier. Subsequently it was realized that a discussion of an undesirable number of elementary aspects of US Patent Law would be necessary for many readers to understand the reasons for such an investigation, and the rationale behind the *opinions and conclusions resulting from it*. In effect this last requires that the column become something of a preliminary course in Patent Law.

Unfortunately there are complications in connection with a column having both of these objectives set forth in the preceding paragraph. It appears to the writer that a "smooth flowing" column apparently cannot be organized so as to read like a conventional infringement and validity opinion and a teaching text. In spite of this it is thought that the usual *Borderlands* reader will gain enough from this dual objective approach to justify its use. Unfortunately it is thought to be effective only if there is a minor degree of repetition in which different points are approached from different aspects on several occasions or are directly stated and then subsequently applied.

THIS COLUMN IS NOT A "LEGAL" OPINION

Unfortunately a relatively brief article such as this cannot do an adequate job of unraveling more than a small fraction of the inter tangled topic known as the "Patent Law" as it applies to the two patents indicated in the preceding paragraph. It is also unfortunate that some over zealous state bar association may take the position that the publication of this article concerning the relationship of the noted Kaali et al patents to significant parts of the Patent Law

constitutes the illegal practice of law within the area where this bar association is located.

This relates to interesting issues. For example, does a state have the right to restrict a person's right of free speech in connection with an article containing a legal opinion of interest to many of the article's readers? Can a state under the guise of its inherent police power gag both an author who is not a member of the bar of that state and the publisher of a magazine from preparing and publishing an article which covers subject matters of a type commonly set forth in formal opinions of counsel? Hopefully the answer to both is "no".

There is also a chance that someone will act upon the preliminary conclusions expressed in it on the assumption that they think anything in print written by a retired Patent Lawyer is certain to be accurate. This would not be wise. The opinions and conclusions expressed in this column are only based on such limited activity as I have considered desirable and economically justified in satisfying my curiosity and in preparing this document.

These opinions and conclusions are definitely not based on a detailed legal research as to the prior art and to the current status of many aspects of the Patent Law. The mere thought of such work is an abomination. I'm retired - at least from being a Patent Lawyer. This is adequate justification for my not doing an over zealous job of investigating and considering all of such matters. From this it follows that I can be wrong in my statements concerning the noted patents and that I may not know of developments in the patent field which would cause me to alter my views.

Under the circumstances any one relying upon the opinions and conclusions expressed in this column is acting at his or her own peril. The existence of this column is not an excuse for not obtaining advise and counsel tailored to a reader's specific individual fact situation from a qualified Patent Lawyer.

THE START OF THE PRELIMINARY INVESTIGATION OF KAALI ET AL '684 AND '738

Usually a patent will be investigated only after a copy of it has been located by some means such as a search of the PTO files and only after someone seriously questions whether or not a specific structure or procedure may infringe one or more claims of the patent. In connection with this column the starting point of the present investigation was the reference to the Kaali et al '738 patent in Peter's article. The article at least suggested that this particular patent contained one or more claims which would preclude the wide spread utilization of a particular type of prospective unit as described in the article. A phone call shortly after receipt of the *Borderlands* article clarified that his concern was well founded.

(54) ELECTRICALLY CONDUCTIVE METHODS AND SYSTEMS FOR TREATMENT OF BLOOD AND OTHER BODY FLUIDS AND/OR SYNTHETIC FLUIDS WITH ELECTRIC FORCES

(74) Inventors: Bruce Kaali, 96 Ashford Ave., Doheny Ferry, N.Y. 10522; Peter M. Schenck, 4101 Central Ave., NW, Washington, D.C. 20016

(21) Appl. No.: 615,880

(22) Filed: Nov. 16, 1990

Related U.S. Application Data

(43) Continuation-in-part of Ser. No. 562,731, Aug. 6, 1990, abandoned.

(51) Int. Cl. B61D 36/00; A61K 41/00

(52) U.S. Cl. 128/419 B; 421, 785, 794; 604/4; 422/22; 44; 128/431; 128/784; 304/131; 304/144; 304/186; 304/302; 310/243; 422/22; 422/40; 422/4

(54) Field of Search: 128/419 B, 421, 785, 794; 604/4; 422/22; 44; 128/431; 164, 166, 342, 375, 302, 303

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9948 1/1983 U.S.S.R. 210743

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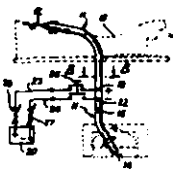
Primary Examiner—Robert A. Dorman
 Assistant Examiner—Sun Li Kim
 Attorney, Agent, or Firm—Charles W. Heiser

ABSTRACT

A new process and system for treatment of blood and/or other body fluids and/or synthetic fluids from a donor to a recipient or storage receptacle or in a recirculating system using novel electrically conductive treatment vessels for treating blood and/or other body fluids and/or synthetic fluids with electric field forces of appropriate electric field strength to provide electric current flow through the blood or other body fluids at a magnitude that is biologically compatible but is sufficient to render the bacteria, viruses, and/or fungus inactive to infect normally healthy cells while maintaining the biological properties of the blood or other body fluids. For this purpose the low voltage electric potentials applied to the treatment vessel should be of the order of from about 0.2 to 12 volts and should produce current flow densities of from one microampere per square millimeter of electrode area exposed to the fluid being treated to about ten milliamperes per square millimeter. Treatment may within the range of parameters may range for a period of time from about one minute to about 12 minutes.

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4,543,648	10/1986	Kaali et al.	128/419
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4,884,283	6/1989	Marrell	128/243
4,923,791	7/1991	Doran et al.	128/243



SIGNIFICANT ASPECTS OF PATENT LAW INVOLVED IN AN INFRINGEMENT INVESTIGATION

The protection accorded under a US utility patent can only cover an invention of a specific type, which is protectable under US law as this invention is set forth or defined in one or more claims as the latter are interpreted in accordance with both law and custom. Such a patent is enforceable against an infringer only if at least one claim printed following the specification of the patent is "valid" or "correctly issued" pursuant to the Patent Law and the PTO Rules, is not unenforceable because of some conduct such as improper procurement of the patent or an antitrust violation involving the patent and is infringed.

One can easily comprehend the criticality of the claim or claims of a patent by considering that the specification and, when applicable, the drawings of a patent, are primarily intended to educate one skilled in the field of the invention claimed as to the nature of this invention and how to "practice" or use it. The entire content of a patent application or patent including its specification and any drawing referenced in it is often referred to as the "disclosure" of the applicant or patent. In a few instances the claims or an application are considered as a part of the disclosure of an application.

A patent applicant's view as to the nature and scope of an invention as defined or claimed in an application will usually diminish as the application is prosecuted before the PTO and as the applicant is exposed to information as to prior knowledge and activity (1) which is material to the subject matter of the claimed invention and (2) which can be considered under US law in

One having only a limited background in US Patent Law might assume that the time and energy spent in this preliminary review so as to establish the possible existence of a patent problem was wasted. Not so. It is easily possible to spend a fortune in time and money in chasing down patent infringement and validity problems which are more imaginary than real.

Common sense coupled with at least a beginner's knowledge of the patent field is required if one is to avoid wasting time and energy in checking out all possible patent problems in detail.

Once it appears that there is a reasonable chance that a particular patent may cause an infringement or related type problem, the first thing to check is whether the patent has expired because of a failure to pay any one of a series of tax or maintenance fees due on or before the 4th, 8th and 12th anniversary of the dates of the issuance of the patent. A call to the PTO resulted in the information that the appropriate maintenance fees have been paid to keep both of the Kaali et al patents in force.

The earlier mentioned phone call establishing significant interest in the '738 Kaali et al patent also confirmed that no column relative to either of the Kaali et al patents would be understood by more than a very few readers unless it included what may be regarded as a beginning lesson in US Patent Law. Since the US Patent Law is in effect an integrated whole composed of entwined considerations, exceptions, and seeming contradictions, it is difficult to write a meaningful abbreviated discussion of this topic. It is particularly difficult to do this without making errors or giving the wrong impression as to many different points.

(54) ALTERNATING CURRENT SUPPLIED ELECTRICALLY CONDUCTIVE METHOD AND SYSTEM FOR TREATMENT OF BLOOD AND/OR OTHER BODY FLUIDS AND/OR SYNTHETIC FLUIDS WITH ELECTRIC FORCES

(74) Inventors: Bruce Kaali, 96 Ashford Ave., Doheny Ferry, N.Y. 10522; Peter M. Schenck, 4101 Central Ave., NW, Washington, D.C. 20016

(*) Notice: The portion of the term of this patent subsequent to Aug. 18, 2009 has been abandoned.

(21) Appl. No.: 635,637

(22) Filed: Nov. 26, 1990

Related U.S. Application Data

(43) Continuation-in-part of Ser. No. 562,731, Aug. 6, 1990, abandoned.

(51) Int. Cl. B61D 36/00; A61K 41/00

(52) U.S. Cl. 128/785; 128/794; 304/131; 304/144; 304/186; 304/302; 310/243; 422/22; 422/40; 422/4

(54) Field of Search: 128/243, 784, 794; 128/419 B; 421, 785, 794; 604/4; 422/22; 44; 304/131, 164, 166, 342, 375, 302, 303

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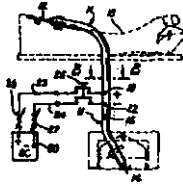
Primary Examiner—Robert A. Dorman
 Assistant Examiner—Sun Li Kim
 Attorney, Agent, or Firm—Charles W. Heiser

ABSTRACT

A new alternating current process and system for treatment of blood and/or other body fluids and/or synthetic fluids from a donor to a recipient or storage receptacle or in a recirculating system using novel electrically conductive treatment vessels for treating blood and/or other body fluids and/or synthetic fluids with electric field forces of appropriate electric field strength to provide electric current flow through the blood or other body fluids at a magnitude that is biologically compatible but is sufficient to render the bacteria, virus, parasite and/or fungus inactive to infect or affect normally healthy cells while maintaining the biological usefulness of the blood or other fluids. For this purpose low voltage alternating current electric potentials are applied to the treatment vessel which are of the order of from about 0.2 to 12 volts and produce current flow densities in the blood or other fluids of from one microampere per square millimeter of electrode area exposed to the fluid being treated to about ten milliamperes per square millimeter.

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4,528,111	5/1986	Kaali et al.	128/419
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4,884,283	6/1989	Marrell	128/243
4,923,791	7/1991	Doran et al.	128/243



determining the novelty and inventive (including "unobvious") character of the subject matter claimed.

Consequently many a patent ends up seemingly disclosing one thing as the invention covered in it and surprisingly claiming something else which is peripherally related to the subject matter of the disclosure. Usually the abstract of the patent does nothing to alleviate this problem. It is only an abstract or type of summary of the entire technical disclosure of the patent. It is not an abstract or summary of the claims or the content of the claims of the patent.

As previously discussed the function of a claim in a patent is to delineate the limits of the protection accorded by that claim of the patent. Since it is fundamental that the claims of a patent must not duplicate it is clear that they must differ in content or "scope". This does not prevent dependent claims from being identically worded if they depend from different claims, since in this case the dependent claims are different because the claims from which they depend are different. A series of claims of different scope are normally used in a patent in the frequently vain hope that comparatively restricted claims of the patent may be valid even if the broader claims of the patent are invalid.

Patent validity involves a series of different topics since a patent can be invalid or unenforceable for one or more of a series of different reasons. They are too numerous to be individually mentioned in this discussion. While usually the reason as to why a patent may be held invalid is relatively clear the application of that reason in many specific fact situations can be quite debatable. Similarly what constitutes infringement in a specific circumstance can often be a rather complex issue. Reasonable patent attorneys often disagree in good faith about this and whether specific claims are valid and enforceable for one reason or another.

In the US there are three "classic" types of infringement — direct infringement; inducement of infringement; and contributory infringement — which need to be considered in any "normal" infringement situation. These should not be confused with comparatively new provisions in the Patent Law relative to: certain acts relative to drugs both being and not being in infringement of a patent; some acts in connection with shipments to or from the US; and a very recent change relative to licensed medical practitioners and facilities escaping the normal consequences of patent infringement. The latter is not applicable to the Kaali et al patents because of their dates.

Direct infringement of a patent occurs whenever a party makes, uses or sells whatever is defined in any claim of a patent as effectively modified or altered by two judicially created doctrines — the Doctrine of File Wrapper Estoppel and, in the absence of such an estoppel, as enlarged in accordance with the Doctrine of Equivalents. As one might surmise a party induces infringement by inducing or attempting to induce another to directly infringe one or more claims of a patent. Contributory infringement occurs when a party "deals" in what may be referred to as a "material aspect" of a patent claim having its only significant utility in connection with the invention defined in the claim under such circumstances that the party knows that such activity will or can be expected to lead to direct infringement of the claim.

Because inducement of infringement and contributory infringement can occur only when there is prospective or actual direct infringement the meaning of "defined in any claim of a patent" as

used in the preceding is critical. A claim defines only subject matter directly set forth in it as being a part of or as being the invention defined by the claim. This is critical to an understanding of the claims of the Kaali et al patents.

A normal, proper claim does directly define an invention by clearly stating that the invention has specific "aspects" such as parts or steps which interact or cooperate as indicated by the claim language to provide what can be referred to as a "unitary" result or product. The latter can be something such as a chemical compound, a mixture having a specific utility, a machine useful in doing something, a process for accomplishing an objective or the like.

Under normal circumstances a claim does not directly define something which is merely indicated in it as having a specific utility or as being useful for one purpose or another. Neither does it normally define as a part of the claim anything mentioned in the claim which is merely processed or treated using whatever procedure (process) or tangible (machine, manufacture or composition of matter) is directly set forth in the claim.

It is surprising how often questions come up regarding the effect of a statement in the preliminary portion or preamble of a claim which indicates or suggests the field or utility of the invention set forth in the claim. Although there is some divergence of opinion on the point it generally is held that such language does not limit the scope or use of the invention in a claim. This is in accordance with the old "Rule" that an inventor is entitled to profit from any utilization of an invention claimed in the latter's patent. If whatever is set forth in the preamble of the claim is defined in the remainder of the claim as a part of whatever is set forth in it the recitation of the preamble in effect becomes incorporated into this remainder.

Except when it is extremely obvious that the claims of a patent are not infringed in a particular circumstance it is a mistake to jump to a conclusion as to whether or not there is not infringement in a specific fact situation. This is the result of the two doctrines mentioned in the preceding.

Under the Doctrine of Equivalents, a claim of a patent will often, but not always, be given a meaning which is broad enough to cover not only what is defined in it but, in addition, is extended to cover equivalents of individual elements or steps set forth in it.

Although this was originally applied to compensate for claims being written so as to be unnecessarily specific as a result of being badly drafted, it now may be used by a court to extend the wording of a claim to cover a newly originated equivalent of something defined in it.

Unfortunately it seems that no two courts considering this Doctrine seem to have precisely the same concept of what is an Equivalent. Generally speaking an Equivalent is a replacement for something defined in a claim if, and only if, it serves the same function as whatever it replaced in approximately the same manner in which this function was previously achieved, and only if the scope of the claim would not be broadened by being changed so as to directly define the replacement so as to be invalid over the applicable prior art.

The application of this Doctrine of Equivalents is limited by the Doctrine of File Wrapper Estoppel. The latter is quite critical to any infringement analysis because it operates to limit the meaning or scope of a part of a claim in a manner which is not apparent from the language used in the claim. These estoppels are only apparent

from the PTO files of applications which issue as patents. The Doctrine relative to estoppels is used to indicate the "Rule" of Patent Law preventing an applicant from representing to the PTO that a claim is of one scope to get the claim allowed and then representing that it is of another broader or enlarged scope in an infringement situation.

The two common types of such estoppels are easily illustrated. In one type the actual words of a claim are commonly changed so as to alter the meaning of the claim or a comparatively broad claim is canceled and replaced by a more specific claim. The other type of estoppel is created by representing in remarks to the PTO during the prosecution of an application that language in a claim has a specific meaning, which is different from the meaning attributed to such language by an examiner.

THE ORGANIZATION OF AN INFRINGEMENT & VALIDITY OPINION

If this column is to serve its announced educational purpose it should be noted that no traditional infringement and/or validity opinion is ever written using a format such as is employed in this discussion. A traditional evaluation by counsel may take the form of a letter opinion or of a document formatted more or less like a manuscript prepared for submission to a reviewer. Both manners of drafting an opinion are commonly used. Both should always be prominently labeled as privileged or confidential so as to minimize the chance of discovery by opposing counsel in the event of litigation related to the subject matter of the opinion.

When I was practicing I preferred to submit any formal infringement and validity study to my clients using the formatted document approach and to transmit the actual report to my client along with a cover letter mentioning items which don't really belong in an opinion that probably would be circulated to a number within the control group of a corporation. The formatted document had a rather significant advantage — it is easy to prepare using sub headings such as are being employed with this column to simplify the organization of the document as it is being drafted and to facilitate its subsequent use by a client.

Regardless of the form of any opinion it must start off with a specific question or series of questions which the opinion is intended to answer so as to segregate such question or questions from any type of a related discussion. Secondly the document should set forth the answer to each inquiry in a short, direct manner which is free from as many qualifications as reasonably possible. These two parts of an opinion should be set off so that they are easily seen. They should also be complete enough so that a client need not read beyond them in reaching a decision.

The manner in which the question or inquiry of an opinion is worded is quite important. By limiting the inquiry it is frequently possible to limit the amount of work required in connection with an opinion. Thus, in connection with this column it is easier to restrict my discussion to the issue — as to whether or not a specific construction which includes an electronics unit for applying either a restricted AC or DC current to two separate electrodes of opposite polarity carrying an electrolyte composition, which are used by being located adjacent to one another along a user's skin, adjacent to a vein or artery with the electrolyte in contact with the skin — than it is to discuss all conceivable structures which might be covered by

the Kaali et al patents. In the interest of convenience a device is hereinafter referred to as a "contemplated device".

The latter is only one of many ways of shortening the manner of designating a device in a question to be answered by an infringement opinion. When a specific structure has been accused of being in infringement it is traditional to refer to it as the "accused device" or "proposed structure". In cases such as the present where there has been no accusation of infringement and the device under consideration is in production usually a possibly infringing structure is referenced using a model number or the like. This is easily illustrated. If this column was a conventional opinion such a question could be: "Can a device as described in the preceding as a 'contemplated device' be manufactured and sold in the US without liability to Kaali et al or any assignee of the Kaali et al '738 and '684 patents". This wording avoids relating the opinion to the possible infringement of any other patent.

At present I would follow this by an answer that on the basis of my present incomplete investigation of these patents that my opinion on this question is a resounding "yes". Normally this answer would be adjacent to either another heading setting off the reasons for the opinion or to a more or less segregated aspect of the opinion stating these reasons. In the present circumstances it is my belief that this opinion is correct because the claims of the Kaali et al patents are so limited as not to cover or "read on" the contemplated device in the unlikely event that I am wrong in my tentative opinion that they are invalid.

It seems to me that there are sufficient reasons to question whether the claims of Kaali et al patents are valid over prior common knowledge and references of record before the PTO and, in addition, to question whether they are valid in spite of the manner in which the proceedings to obtain these patents were conducted before the PTO. In addition I would have merely noted in a formal opinion that technically it is impossible to infringe an invalid patent.

In my present opinion there is absolutely no question but that an effectual further investigation of the Kaali et al patents will clearly indicate additional reasons as to why the Kaali et al patents are invalid, unenforceable and/or not infringed by manufacture, use or sale of the contemplated device.

This does not mean that the Kaali patents are valueless. An argument can be advanced that the claims of these patents are worded so that they would be infringed by a scrutinized device either as they presently read or as extended by the Doctrine of Equivalents. Such an argument inherently would, in the writer's opinion, be very weak. But it might be considered to be strong enough to at least support the filing of an infringement suit against any one manufacturing, using, or selling a contemplated device in an effort to play "economic chess" aimed at stopping such activity or forcing a party to take a license under these patents.

The significant costs of even unwarranted litigation and the possibility of such litigation being brought are factors which must be evaluated by any party seeking to enter the field of devices such as the contemplated devices. One never should forget that judges do not necessarily rule as they are expected to rule.

To avoid any doubt as to the facts and scope of an infringement and/or validity opinion it is common to next include in the report to a client a section specifically identifying exactly what is being considered as possibly coming within the valid scope of a patent by

incorporating materials such as a drawing, a specification sheet or the like into the opinion by reference. This frequently avoids possible misunderstandings. It hardly seems necessary in this case in view of the simplicity of the contemplated device.

In the usual infringement and validity opinion such a section containing a detailed identification of whatever may or may not come within the scope of patent is followed by a series of sections as may reasonably be required in connection with an opinion and is normally ended by a section clearly identified as a conclusion. While the latter will to a degree duplicate conclusions such as set forth in the beginning of the opinion, it will usually amplify them while concurrently restating them in manners supplementing the way they have been earlier stated.

SIGNIFICANT MATTERS RELATING TO THE KAALI ET AL ABANDONED '721 APPLICATION

The actual investigation of Kaali et al '738 started with an order being placed for a copy of all of the papers in and on the exposed surfaces of the PTO file of the Kaali et al Abandoned Application Ser. No. 07,582,721 Filed 8/6/90, the same materials in connection with the application which became the '738 patent and copies of all references mentioned in both the of these application files. All of the papers other than the references mentioned in connection with each application are collectively referred to as the "file history" for the application. This pile of copies turned out to be approximately 3-4 inches tall.

On briefly going over them to make sure that there had been no error in filling the order it became apparent that the disclaimer mentioned on the cover sheet of the '738 had been entered because of the existence of the related Kaali et al patent '684. This necessitated another order to obtain the file history and references of the application which became the '684 patent. Only after this collection of papers — including the references cited in them — could the Kaali et al patents be considered seriously.

A review of the file history of the abandoned "parent" '721 application revealed nothing which seemed remarkable or out of the ordinary. The specification seemed to be a bit indefinite as to a number of minor points to a degree which is usually not permissible. Thus, it specified that a tube be formed of "plastic or rubber, medical grade polymer or other suitable material" "...which is compatible with human fluids and/or tissue". One could fight a probably losing argument that such disclosures are sufficiently vague and incomplete as to fail to comply with the PTO Rule that a specification must be sufficiently complete as to teach one skilled in the field of the invention claimed how to practice this invention.

One could easily get into a related, valid argument that the disclosure of the parent application did not meet this standard when it came to indicating apparently necessary details pertaining to the power supply to be employed with clearly identified electrodes of any specific spacing. All it says on this point is that an electric field can be used which is derived from applying 2-4 volts and 10-100 microamperes and that a greater voltage than this can be used along with a current of up to 500 microamperes.

Although at one point the specification refers to a "direct current excitation potential" it does not clarify whether the current used can be a DC or an AC current and does not contain anything relative to the use of AC or DC current pulses or AC frequencies, the areas

and spacing of the conductive and non conductive materials within a conduit, flow rates and the like. There are other items which probably are important and which seem to be omitted.

All of the enumerated items are probably especially critical to effective operation of a Kaali et al type device. If blood zips past the regions between small, widely spaced electrodes it seems improbable that any significant anti-viral action will be achieved.

In my opinion these omissions should be sufficient to declare a patent issued on the parent application invalid. In any event they are in effect immaterial at the present time because no patent was issued on the parent application. The lack of disclosure on these points is worth noting because of the fact that the subsequent applications which issued as the 2 Kaali et al patents were issued on applications which were copending with this parent application. As a result of such copendency they are entitled to the effective filing date as to all common subject matter which is carried over into them from this parent application.

It is usually referred to as the Doctrine of Continuity. When this Doctrine applies a later filed application is referred to as a continuation or a continuation in part depending upon if the disclosure of the second case is the same as or different from that of the parent. This would be important if the effective date of a possible prior art patent reference is prior to the dates of the applications which became the Kaali et al patents but is such that this particular reference cannot be cited as a valid reference against the parent application and if the reference did not claim any invention claimed in the subsequent applications. There is a possibility that this "rule" may have been changed slightly as a result of the Gatt situation.

It is interesting to note that the file cover of the parent '721 application and the application which became the '738 patent indicates that licenses were obtained for the filing of foreign applications corresponding to these particular applications. In the event of a more complete investigation of the Kaali et al patents it should be determined if in fact these foreigners were filed either in or out of conformity with these licenses. If they were filed it is possible to find out whether any "material" references were cited in them which might also have been cited by a reasonable US examiner against either the parent application or the subsequent applications which became the Kaali et al patents.

This is critical. Under the PTO rules every applicant is in effect required to be a devil's advocate and to inform the PTO of any reason known to the applicant which a reasonable examiner would want to consider in deciding whether a patent should not issue on an application. It is important to note that this burden; (1) falls on virtually everyone associated in any way with an application, and (2) is unrelated to where or how any such individual acquired the information.

The penalties for not disclosing to the PTO any and all required information are draconian. Any failure by Kaali et al to inform the office of a material reference cited against a non US application would have ground for striking from the active files of the PTO either of the applications which became the '738 and '684 patents. Although at one time a patent issued on an application in which this duty to disclose had been violated was said to be unenforceable it probably would be better to refer to such a patent as being invalid. The effect is the same in either case.

At the time this is being written nothing has been located which

indicates that any material prior art withheld from the PTO in violation of the duty to disclose material information. In connection with a preliminary analysis such as this it is usually impossible to determine if this duty was violated during the prosecution of an application. There are a few limited exceptions to this. One of these is when there was a reference cited in a foreign application during the pendency of an application. Another is when there was an invalidating disclosure or public use of a claimed invention by the inventor or a party deriving information from the inventor.

SIGNIFICANT MATTERS RELATING TO THE APPLICATIONS WHICH BECAME THE KAALI ET AL '684 AND '738 PATENTS

The applications which became the Kaali et al '648 and '736 patents were both filed on Nov. 16, 1990 during the pendency of the parent application. Nothing in the file of either of them specifically indicates why they were filed. It is easy to speculate that they were filed to overcome prospective disclosure problems in the parent case and to supplement or enlarge the disclosure of the parent case so as to diagrammatically show a number of different devices falling within the scope of the alleged inventions set forth in these two applications. As might be expected the two cases included a number of claims in excess of those found in the parent application.

An analysis of the claims in the latter filed applications is facilitated by the fact that both contain only dependent claims 1, 18 and 22 and that all other claims in these cases are dependent under these independent claims. Since, as previously noted, dependent claims only add to the subject matter of the claims from which they depend these original claims 1, 18 and 22 were the broadest claims in each of the applications which became the Kaali et al patents. If these are not infringed by the contemplated device none of the claims under them can be infringed by this structure. This is inherently different from the situation in which a claim is invalid as, for example, by being anticipated by prior art references. In the latter case the dependent claims under the invalid claim might or might not be anticipated by these references.

The claims in the applications which became the '738 and '684 patents are very closely related more or less as peas in the same pod are related. In each case the claim 18 and the dependent claims under it are process claims which are in the nature of restatements of the apparatus claims 1 in these applications. As a consequence of this it is possible to discuss these claims 1 and to have this discussion carry over into a consideration of the application claims 18. The apparatus claims 22 are so closely related to the application claims 1 that any discussion of the latter carries over to the former.

The sole difference between the claims 1 in the applications which issued as '738 and '684 patents is that claim 1 in the application which became the '738 patent uses the phrase "... means for applying low voltage alternating current electric potentials ..." whereas the application which became the '684 patent substitutes for this clause "... means for applying different polarity low voltage electric potentials..." Because of this difference the first of these applications can be referred to as the "AC application" and the other as the "DC application" even though it can be considered that "different low voltage electric potentials" are obtained from an AC power source during each half cycle of an AC current.

Although many things could be discussed in connection with

questions as to whether or not the applications which became the patents meet the PTO requirements for a satisfactory patent disclosure and many other aspects of the materials presented to the PTO by or on behalf of Kaali et al it is considered that it would be a waste to discuss them. In litigation there is a presumption that the examiners of the PTO know their business and that if they have not objected to something such as the sufficiency of a disclosure that it must be acceptable. It is a shame that this type of thinking still prevails. Contrary to the statements in many opinions the examiners of the PTO may or may not really understand the technology of the applications they handle depending upon their training and experience.

The mere fact that they are examiners does not make them experts. Further, even if they are truly experts in a specific technology — as some of them are — they are burdened by a vicious quota system which frequently deprives them of the time necessary to even read without studying all of the papers in an application. They cannot be expected to pick up on and catch every significant aspect of a prolix attorney who is prosecuting an application such as those which lead to the '738 and '684 patents.

THE DISCLOSURE OF THE SWARTZ ET AL PRIOR ART REFERENCE

This problem of examiners not having sufficient time to adequately study application papers is easily illustrated. The drawings in the '738 and '684 patents are identical except for the inclusion of Figures 20 and 20 A in the file which became the '684 patent. These figures show what Kaali et al refers to as a non flow through batch treatment vessel. It illustrates a device which is virtually identical to Fig. 1 of the Swartz et al article entitled "Inactivation of Herpes Simplex Virus..." cited to the PTO by or on behalf of Kaali et al during the prosecution of these patents. This Fig. 1 of the Swartz et al article is not quickly apparent. It is "buried" in the body of the Swartz et al article.

This last reference was cited by Kaali et al (through counsel) to the PTO in connection with a disclosure statement furnished to the PTO along with the representation: that it "... describes a method and apparatus for the inactivation of herpes viruses using methylene blue in combination with light and electricity". You can judge as to whether or not this abbreviated statement complied with the PTO rule requiring any item noted in a disclosure statement to contain "a concise explanation of the relevance of each listed item."

From the manner in which this Swartz article was handled one can legitimately ask if Kaali et al through counsel deliberately hid the Swartz article in a mass of other materials and then explained this article in such a manner that the examiner was discouraged from studying it in detail. If he had so studied it is thought that he would have located the Swartz illustration of a device which appears nearly the same as the device shown in Figs 20 and 20A of the '684 patent and rejected Kaali et al claims on this dubiously disclosed prior art.

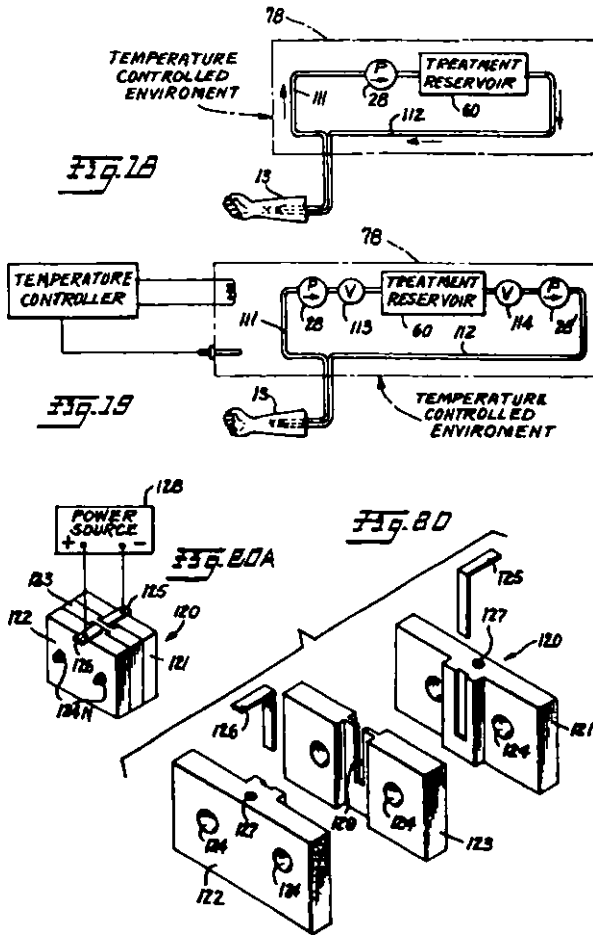
Was this done in the hope that the prolixity of the entire file taken as a whole should effectively preclude an examiner struggling under an oppressive quota system from having the time to study all of these materials so as to locate a relatively obscure, very critical, material disclosure or otherwise from doing a detailed, thorough examination of the patent which lead to this patent? The seemingly probable existence of such a campaign is confirmed by several additional

the longhand statement by the examiner:

"...Prior art does not use all biocompatible materials as in the claimed system, and voltage and current levels are low in the claimed system that no damage to biological material occurs"

In researching any decision as to the invalidity of patent claims over the prior art, a court can't rationally avoid looking to something such as the quoted statement in the file history of the '738 patent. It is a clear indication as to why the examiner was expected to allow any claims in the application which distinguished over the prior art by including the limitations listed in the interview record as not being shown by this prior art. Usually statements of this type are confirmed by remarks or amendments creating file wrapper estoppels and are followed as a matter of routine by an examiner indicating that claims with the noted limitations are allowable.

This is what happened in connection with the application which became the '738 patent. These estoppels are apparent from the typing in the reproduced application claims 1, 18 and 22 as these were presented in the Dec. 19, 1991 amendment. In accordance with PTO practice additions to claims are shown by underlining while deletions from claims are shown by brackets. The remarks of counsel in the December 19, 1991 amendment confirm the estoppels apparent from the amendment of the claims and indicate the complete content of the claims using more common English than is traditionally employed in patent claims. The listed claims were then allowed without further action on the merits. These additions to the



matters in the file histories of the '738 and '684 patents. What other reason could there be for the disclosure of a group of Kaali et al patents pertaining to birth control? More could be stated about their being disclosed.

THE INTERVIEW IN AT LEAST THE APPLICATION OF THE '738 PATENT

Probably the most interesting questionable aspect of the prosecution which lead to the issuance of the Kaali et al patents pertains to the circumstances regarding an interview held Dec. 19, 1991 with the examiner who was apparently handling all 3 of the then pending Kaali et al applications at that time. According to the document summarizing this interview it appears to have only been concerned with the application which lead to the '738 patent. It seems inconceivable that the related applications were not also discussed. At the interview an amendment which had been prepared for filing in the application leading to the '738 patent was apparently discussed to at least a limited degree.

This interview was memorialized in an "Examiner Interview Summary Record" in the file of the '738 patent.

The most important aspect of the interview summary record is

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

OFFICE NUMBER	FILED DATE	FIRST NAMED APPLICANT	ATTORNEY OR AGENT IN CHARGE
65-437	11/16/90	Kaali	W.D. WYLLIE

EXAMINER
W. Gary Lee
LET COPY
1306
DATE MAILED
86

EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel)

1) Mr. Heber Reg. No. 16,914

2) Mr. Jones

Date of interview: 12/19/91

Type: Telephone In-person (copy is given to applicant applicant's representative)

Subject shown or discussed: Yes No If yes, brief description:

Appropriateness: Not suitable with respect to one or all of the claims in question Yes see remarks.

Claims discussed: Amendment to the '738 patent

Subject matter of prior art discussed: generally out of record

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: *Pin art does not use all biocompatible materials as in the claim of system, and voltage and current levels are low in the claimed system that no damage to biological material occurs. The Okamoto-type double partitioning is used. Heber & Mr. Jones agreed on the technical discussion of record.*

CA: I have completed, if necessary, and a copy of the amendments, if applicable, which the examiner agrees should be made to the claims, attached to this report. Also, after the date of the amendments, which would appear on the amendments, a copy of the amendments must be submitted.

Unless the paragraphs below have been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT NEEDED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW IN CL. Items 1-7 on the reverse side of this form if a response to the last Office action has already been filed, then applicant is given the option from the interview file to provide a statement of the substance of the interview.

It is necessary for applicant to provide a separate record of the substance of the interview.

Since the examiner's interview summary alone (including any amendments) reflects a complete response to each of the objections, questions and requirements that may be present in the last Office action, and since the above are now discussed, this summary form is considered to satisfy the reporting requirements of the last Office action.

W. Gary Lee
Examiner's Signature

noted claims and the accompanying remarks by counsel from the '738 patent application history all cover the points the examiner conceded to be novel at the interview.

While the preceding discussion has been directed toward the application which became the '738 patent it probably should have been referenced to both of the applications which became patents. As previously noted according to the PTO record the interview was only concerned with the application which became the '738 patent. Since at the time the same examiner was handling all of the Kaali et al applications and since they were all prosecuted by the same attorney they must have discussed all three then pending Kaali et al applications to at least a limited extent.

Technically the record in the application which became the '684 patent only evidences estoppels limiting the scope of the claims by referencing what must have been an agreement to allow claims reached at an interview. Since almost identical claims were amended the same way in both cases and were discussed in substantially the same manner in the remarks in both of the applications which matured into the Kaali et al patents it is believed that any court would hold that there existed identical estoppels limiting the scope of the claims in both of the applications which matured as patents.

THE CONTEMPLATED DEVICE DOES NOT COME WITHIN THE "WORDING" OF CLAIM 1 OF EITHER OF THE "738 OR "684 PATENTS

In determining whether or not there may be an infringement problem because at least one claim of either of the Kaali et al patents — if valid and enforceable — is of such a scope that it is infringed by the contemplated device after both being "enlarged" by the Doctrine of Equivalents and restricted by the Doctrine of File Wrapper Estoppel. In a more conventional opinion this infringement issue might or might not be discussed prior to the issue of validity over prior art. In this article the question of validity is being left toward the end of the discussion in the expectation that additional materials reflecting on the validity issue will be subsequently located in time to be incorporated into the article.

As a consequence of the wording of the Kaali et al '738 and '684 patent claims there are two generalized ways of construing the entire contents of these claims in reaching a determination as to whether a contemplated device is or is not in infringement of these claims. The first involves considering only what is actually defined in claims without reference to all of the language which tends to hide the physical structure or the steps actually defined in the claims. This method of analysis was previously mentioned as benefiting inventors by tending to give them the benefits of all uses of their inventions. When considered in this manner claim 1 of the application which became the '738 patent defines only the following "structure":

1. (Amended). *An electrically conductive vessel...for treatment of fluids contained therein or flowing through the vessel ...*

...said electrically conductive vessel being fabricated with only biologically compatible material contacting the fluid being treated and ...

...with an array of at least two or more spaced apart, opposed electrically conductive electrode segments formed of a biologically compatible conductive material on the interior surface of the vessel and exposed to ...fluids contained in and flowing through the vessel,

...said electrically conductive electrode segments being electrically

isolated from each other and extending over or through a portion of the length of the vessel, and ...

...means for applying low voltage alternating non biologically damaging electric potentials to the electrically conductive segments ...while not impairingthe fluids.

When viewed in this stripped form so that what is actually claimed in this claim 1 is no longer hidden by prolix verbiage it becomes apparent that it really defines very little structure and that there are problems concerning the terminology employed in the claim. The prime example of the later is the phrase "*electrically conductive vessel.*" Probably a court will attempt to save the validity of this claim 1 by looking to the Kaali et al specification so as to confirm that an entire "vessel" as used by Kaali et al is not in fact conductive, and that the only conductive aspects of the claimed treatment structure are the electrically isolated conductors used in contact with a fluid being treated.

Assuming terminology problems as noted in the preceding are all resolved in a manner favorable to Kaali et al the claim 1 from the '738 patent quite clearly differs from the contemplated device in several ways. The most important of these is that it does not have anything corresponding to the claimed "*electrically conductive vessel.*" No part of the contemplated device acts in any way to hold any fluid. The container or vessel defined by Kaali et al is used to hold a fluid. As worded the Kaali et al claim 1 requires a structure in which a fluid is treated as it is in direct contact with electrically isolated conductors and that this is a "vital" part of the combination in Kaali et al's claim 1. No such direct contact between the fluid treated and the electrodes is used in the contemplated device.

It is clear that because of these material differences, the contemplated device does not directly infringe on this claim — in the unlikely event that this particular patent is both valid and enforceable. Desperate counsel trying to find any way of advancing even a clearly invalid argument against this conclusion might allege that while the contemplated device does not directly infringe that it is in contributory infringement of the '738 patent on the ground that it is especially made and adapted for use in direct infringement of the patent. As previously discussed contributory infringement only occurs when it is at least contemplated that something such as the contemplated device will ultimately be used in direct infringement of the patent.

For the contemplated device to be considered as being used in direct infringement of the noted claim 1, it is necessary to regard a living body with which the contemplated device will probably be used as being the equivalent of the claimed "*electrically conductive vessel.*" Such a holding would involve altering common sense. While the human body is a complex type of "structure" which holds a variety of different body fluids in different manners no one normally regards the body as a container or vessel.

A very far out argument could be advanced seeking a holding that the phrase "conductive vessel" used in the '738 patent claim 1 really refers to the restricted meaning of "vessel" relating to a tube or duct in a body which is used to conduct fluids. A position of this type could be argued in an effort to establish an ultimate utility of a contemplated device in direct infringement so as to seek a holding that the contemplated device is in contributory infringement of claim 1. Logic of this type seems so ludicrous as to be a waste of time. As can be seen from the drawings in both of the Kaali et al patents,

the inventors named in these patents did not seek to treat fluids within a body.

The second generalized way of construing the entire content of a claim in reaching a determination as to infringement of that claim requires a consideration of all of the language employed in the claim to give "body" or "substance" to the positively defined elements of the claim. This requires a consideration of a claim such as claim 1 as a "whole". The latter requires an understanding as to how a device as set forth in the Kaali et al patent claim 1, and how the contemplated device really operate or function. From this it is apparent that their modes of operation of functioning are so distinctly different that the Kaali et al patent claims 1 cannot be given a scope beyond their actual wording so as to cover the contemplated device.

A discussion of the manner in which a claimed Kaali et al device operates is best predicated on a claim in which such a device is defined such as the previously reproduced Kaali et al claim 1 from the '738 patent. Since the entire wording of this particular claim 1 is apparent from the reproduction of claim 1 as amended, there is no point in repeating it in this discussion. In the interests of brevity this discussion as to the different manners of operation assumes that a reader has a working understanding of the way this claim 1 is written.

In a sense the "...for direct electric treatment ..." clause of this claim 1 merely sets the stage to facilitate an understanding of the following provisions of the claim. This would particularly be the case if the claim was written in a less alternative, more conventional manner. For example, does or does not this particular claim define blood or an unspecified synthetic fluid such as a common hydraulic fluid or the like as a part of the combination claimed? Similar questions can be raised as to the meaning of other expressions and terms found in the noted claim 1. These should, but probably will not, be sufficient to render the claim invalid on the ground that it does not clearly and distinctly define the invention set forth in it.

As worded the Kaali et al claim 1 clearly requires that the "electrode segments" used be located "...on the interior surface of the vessel..." so as to be in direct contact with blood or other unspecified body or synthetic fluids within a container or flow conduit. The Kaali et al '738 claim 1 then specifies structure for applying a current to the electrodes so as to directly produce unspecified electrical field forces so as to induce or cause a current flow through the blood or other fluid. These referenced portions of the '738 Kaali et al claim 1 involve nothing more than the use of electrodes in any cell containing blood or another conductive electrolyte.

THE DIFFERENT "MODES" OF OPERATION OF THE KAALI ET AL AND THE CONTEMPLATED DEVICES

This brings up the fundamental distinction between the contemplated device and what is defined in the '738 Kaali et al claim 1 and other claims of both of the Kaali et al patents. Every device shown or described in these patents uses a "vessel" which is separate and apart from a living body. Kaali et al did not recognize and did not claim treating a fluid within the usual location of the fluid such as a living body. This mode of treatment of the contemplated device avoids such complications as the need to take blood from a body, then process the blood and finally returning the blood to the body. Whenever the human body is "invaded" as required by Kaali et al there is a danger of infection or a related complication which is

avoided by the contemplated device.

In addition Kaali et al only recognized the effectiveness of electric treatment when the current used was directly applied through electrodes to a fluid being treated. This involves connecting two conductors — electrodes — of different or changing polarity by a resistor — the electrical resistance of the blood used. Schematically a "circuit" of this type as used by Kaali et al can be represented as two terminals connected by a resistor.

As opposed to this the contemplated device separates the electrodes from the blood or other fluid present by the skin or other similar physical structure. The skin or other structure used acts as and can be considered as a barricade. Since the skin has both resistance and capacitance characteristics, the current used in the contemplated device is not directly applied to blood or another fluid, but is applied to such a fluid after it has been "altered" electrically by the skin acting more or less as a simple tank circuit. In effect the "circuit" employed with contemplated device can be schematically represented as a series circuit consisting of a terminal, a tank circuit having a resistor in one of its legs and a capacitor in its other, a resistance representing the fluid being treated, another similar tank circuit and then another terminal.

There are trade-offs in connection with the two different structures. Inherently they involve different modes of operation. It is considered that the electrical differences between the two different types of devices discussed cannot be adequately considered in this document. This is because Kaali et al merely states in claim 1 of the '738 patent that this structure produces "electrical field forces" in the fluid treated without clearly specifying the nature of these forces. From the schematic representations of the different types of Kaali et al and contemplated devices it is apparent that regardless of the type of current used with these devices that there has to be a variation as to how this current is "processed" or "used" in these two devices.

The fact that the Kaali et al type device with the electrodes immersed in the fluid being treated is inherently different from the scrutinized device in which the skin, the walls of the blood vessel and whatever else may be present near the electrodes act as a wall or barrier so as to deliberately isolate the electrodes from a fluid such as blood being processed or treated is particularly significant in connection when a DC current is employed as in the Kaali et al "DC" '684 patent.

This is because of the well known fact that polarization effects are more apparent with an electrochemical cell operated using a DC current than one operated using an AC current because of the constant reversals of the latter. It is understood that these effects can be encountered to a limited extent with the latter, particularly when the frequency of the AC current is quite low. It is interesting to note that the Kaali et al "AC" '738 patent gives no clue as to the frequency of the current used.

This difference as to where and how the electrodes are used between the Kaali et al devices and the contemplated device enables the contemplated device to avoid all of the various polarization and related effects which normally occur at electrodes exposed to a body of a conductive fluid such as blood. Desperation might drive an ill-informed counsel to argue that the contemplated device employs a type of operation similar to that of Kaali et al structures because of the use of thin films of an electrolyte to improve conduction between the electrodes and the skin of a person or other

"barrier". Such an argument would ignore reality.

The use of thin electrolyte films between the electrodes and the skin or the like in the contemplated device to improve conduction is a common expedient having so little effect that as a practical matter the presence of such electrolyte can be ignored. The minimal use of an electrolyte in the contemplated device can be compared with the use of such thin films to facilitate electrical contact between the skin and an electrode in EKG and other common medical devices.

It also is significant in that by using electrodes on the outside of a human body or in a related position with respect to a more conventional conduit the contemplated device avoids the necessity of using specialized electrodes. This is brought out by the file wrapper estoppels in Kaali et al '738 and '684 patent claims 1. Each of these claims requires that the electrodes; (1) are formed of "biologically compatible material" whatever that may really be, and (2) be located on the interior surface of the container or the like which holds the fluid being treated such as blood or hydraulic oil.

With Kaali et al these electrodes have to be of a corrosion resistant material so that they will not react with or be corroded by the fluid being processed in an electrochemical reaction system. As opposed to this the contemplated device can form the electrodes out of any convenient conductor because these electrodes are employed so that they never come in contact with a fluid being treated. By this type of construction the accused device avoids the corrosion problems inherent in Kaali et al's structure which directly applies a current to the fluid being processed. By virtue of this difference the contemplated device achieves a different mode of operation than Kaali et al.

This confirms the fact that claim 1 of the '738 patent and all other similarly limited claims of the two Kaali et al patents are not and cannot be directly infringed by one who makes or sells the contemplated device. Since there can be no direct infringement in connection with the contemplated device it follows that there can be no inducement of infringement or contributory infringement of Kaali et al apparatus claims in connection with it.

A contemplated device can also be argued to avoid contributory infringement on another ground. It seems obvious that it has a potential substantial non infringing use adequate to avoid contributory infringement in inactivating at least some micro organisms in any contained solid or water. As an example of this such an at least potential non infringing use is suggested by the fact that I am interested in testing one of these units to see if it will enable me to avoid the use of some or all of the halide compounds I currently use to maintain the purity of the water in my hot tub.

The amendments and remarks relative to the Kaali et al '738 and '684 patent claims are believed to have set up estoppels against these claims being of such a scope as to cover the treatment of just plain water. Kaali et al can be expected to argue against this conclusion. At this point it is only possible to speculate the reasons as to why the Kaali et al claims were so limited. Is it because of undisclosed anticipatory prior art?

It would be foolish repetition to repeat the preceding discussion relative to the remaining claims of the Kaali et al '738 and '684 patents which differ from the two almost identical patent claims 1 only by additional limitations or restrictions to these claims 1 or by in effect rephrasing these claims 1 in such a manner that the defects

and "problems" of these claims 1 are carried forth into them. These other claims are not directly infringed for the same reasons that these claims 1 are not so infringed.

THE KAALI ET AL '738 AND '684 PATENT PROCESS CLAIMS 18

The remaining claims of the Kaali et al patents are of a different type than those previously discussed in that they define a process for the purpose of attenuating bacteria, viruses, and related biological items from blood or other fluids. The broadest claims of this type are the claims 18 in the Kaali et al '738 and '684 patents. These particular claims have been reproduced along with the amended application claims 1 which in due course became the patent claims 1 discussed in the preceding.

Little more than a glance at the amended application claims 18 and the amended claims 1 as reproduced makes it clear that the claims 18 are all limited by the same category of estoppels as limited the meaning of the claims 1 expressed in virtually the identical language used in the claims 1.

Because of the form of these process claims 18 it would be inappropriate to discuss them in a "stripped down" form such as was initially used in discussing the Kaali et al '738 claim 1. This is as a result of these claims 18 attempting to define a treatment step. The apparatus employed in carrying out the process cannot be separately claimed in such a process as tangible structure but the process claimed may be restricted to the use of a particular apparatus in carrying out the process. Thus, the claims 18 do not per se claim a treatment vessel, but do claim the use of a particular treatment vessel in carrying out the process.

The Kaali et al process claims 18 differ from the usual process claims in that they define a process having only a single step whereas more commonly a process claim sets forth a series of related or associated steps. This single step in both claims 18 is the treatment of a specified type of fluid in an electrochemical cell having internally exposed "biologically compatible" electrodes with "electric field forces" of an unspecified nature for a sufficient time to attenuate growths in the fluid being treated to such an extent as to render them "ineffective" for an unspecified purpose. In the '738 "AC" patent the "forces" are of an alternating character whereas in the '684 "DC" patent claim 18 it is not indicated if these forces are of a direct or alternating current character.

When the contemplated device is used with the electrodes employed in it either being in contact with the exterior of a body or a conduit or the like clearly the user of the device does not directly infringe either or both of these claims 18. The reasons for this are the same as or parallel to the preceding discussion showing that the contemplated device does not infringe the Kaali et al apparatus claims. Again, this is a result of the estoppels the scope of the claims under consideration is limited to a process using an electrochemical cell in which the electrodes are exposed to the fluid being treated and are set forth as being "biologically compatible" with the fluid such as blood, water, or hydraulic or other synthetic fluids being treated.

As pointed out in the preceding one, using the contemplated device does not need to be concerned with the effect that such a fluid and the electrodes have on one another. When they are physically separated as in the contemplated device there is simply no way that

biocompatibility of the electrodes and the treated fluid can be important. This freedom from concern of biocompatibility is achieved at a cost.

The fact that the current used with the contemplated device has to "act" through a barrier wall such as the skin of an individual burdens the contemplated device with functional complications which are not encountered when a current is directly applied to a fluid being treated with a Kaali et al device. In considering the pros and cons of the different processes used with the contemplated and Kaali et al devices it is apparent that these complications probably are more than offset because the contemplated device avoids consequences such as polarization at the surfaces of electrodes. In the contemplated device such traditional electrode effects simply can't occur because the electrodes are separated from the fluid being treated.

Since the contemplated device cannot be used in practicing a process as claimed in the Kaali et al patents for the reasons as indicated in the preceding discussion there is probably no reason for noting that technically the manufacturer of a machine which is especially constructed for use in practicing a claimed process and having no other significant utility does not directly infringe the claimed process by merely making the machine. Causing another to infringe a valid process claim by giving out advice as to how to use the device to practice the process can, however, result in liability as a direct infringer because the advice would induce another to infringe the patent. It is my recollection that there is no liability in this situation unless the advice results in direct infringement. Similarly one can contributorily infringe a process patent. This is believed to be so rare that there is no need to discuss it.

ELEMENTARY FACTORS CONCERNING THE PRESENT OPINION THAT THE KAALI ET AL '738 AND '684 PATENTS ARE INVALID BECAUSE OF PRIOR ART REFERENCES

The inherent conclusions that the contemplated device can be manufactured, sold and used without coming within the scope of any of the claims of the '738 and '684 patents are so clear and are so reinforced by file wrapper estoppels that it does not seem necessary to go further in connection with a consideration of the Kaali et al patents. In such circumstances an infringement investigation and opinion can often be truncated without any consideration of the prior art relative to the claims. Since this article is intended to educate the readers in various fundamental aspects of patent law it is considered that it would be incomplete without at least some discussion as to the validity of the noted patents.

Fortunately or, depending upon one's view point, unfortunately, this discussion on validity over the prior art of the claims of the two Kaali et al patents must be short because as this document is written the writer does not have adequate information as to the prior art to formulate a "final" position of the validity of these claims. In connection with a conventional infringement report there would be an exhaustive search in an effort to locate anticipatory prior art.

Normally this exhaustive search would also be followed up in the event of litigation with discovery seeking to obtain all such references known to the inventors or those in privity with them. When there is litigation it is also common to duplicate the exhaustive search with a different searcher than the one who made the original search. To the best of the writer's knowledge no such comprehen-

sive search relative to the claims of the Kaali et al patents has as yet been conducted and no such search is currently contemplated.

The obvious intent of any such investigation is to locate any and all references anticipating the terms of the claims under consideration. In the patent law there are two distinct types of such anticipation sufficient to result in a declaration that a claim is invalid over prior art. Although this entire discussion has been written so as to avoid using such things as code section numbers, rule numbers and the like in connection with invalidity over prior art it is highly desirable to use the numbers of sections 102 and 103 of the US Code to designate these two "types" of invalidity.

These section numbers are regularly used by the PTO in rejecting claims and have often seemed bewildering to the uninitiated. Anticipation under 102 occurs when a reference discloses everything set forth in a claim. In these cases it is unnecessary to consider any changes or alterations of any type in the content of a prior art reference in determining whether it shows each and every thing set forth in a claim. As opposed to this anticipation occurs under 103 whenever a single reference does not quite show everything set forth in a claim but the differences between the content and the claim and of the reference are such that a person skilled in the field of the subject matter of the invention set forth in the claim would consider it obvious to modify the disclosure of the reference to derive the subject matter claimed.

An obvious modification can merely be the application of routine skill in the field of the claimed invention to the disclosure of the reference. More often it consists of a belief that only such routine skill would be involved in taking one or more features from at least one reference and incorporating them into whatever is disclosed by the primary reference so as to derive the subject matter claimed.

THE APPARENT LACK OF NOVELTY OF THE CLAIMS OF BOTH OF THE KAALI ET AL '738 AND '684 PATENTS

In holding claims invalid pursuant to either of these two US Code sections, a court may be lucky enough to have some guidance as to why such claims were issued or allowed by the PTO. For many years the file of a patent gave no indication as to why it was allowed. Then for a time the PTO promoted the use of a form upon which examiners were to note the reasons why they allowed claims. Currently the prime "clues" as to why claims are allowed are statements such as that previously quoted from the Interview Summary Record in the application file of the Kaali et al '738 patent.

These point out what the examiner regarded as the "points" of novelty in the Kaali et al claims. In other words the Kaali et al examiner by indicating in the Interview Summary Record what the prior art did not show indicated that the entire content of the claims except for the features named was old and anticipated by one or more references which were then of record in the particular Kaali et al application or applications discussed at the interview. Technically this is separate from the file wrapper estoppels created by amending claims to incorporate these features which were considered to be missing from the prior art.

Because of the existence of the Interview Summary Record indicating the specific features in the Kaali et al claims which the examiner considered to distinguish over the references the examiner then had at hand at the time, it is necessary to consider whether

these features or points of novelty were in fact of such a character as to be unobvious to one skilled in the field of the Kaali et al claims. If, as will be shown, they are of an obvious character the claims allowed because they contained them are invalid over the prior art under 103.

The items which were stated by the examiner as being not shown by the prior art known to him were: (1) biocompatibility of the materials used and treated in the claimed electrochemical cell and (2) the current being used being so low and of such a voltage as not to cause damage to biological material. The record before the PTO indicates that Kaali et al knew or should have known of the apparent inaccuracy of the statement as to these items not being shown by the prior art.

The first of these items pertaining to using biocompatible materials in an electrochemical cell which could be used in treating human blood as the blood is circulated outside of the body through the cell is so obvious that it is clear that the examiner made an error on this point. It is obvious that anything used with blood should be of such a character that it is biocompatible with the blood so as to avoid undesired consequences.

In listing materials for use in an assembly to be implanted in a human body the Yao et al patent 3,994,799 clearly states on lines 13-15 of page 5 of the patent as follows:

"The entire assembly is adapted for implantation, as by covering the non-membrane surfaces with a silicone or silastic rubber which has proven body-compatible properties."

While "body-compatible" is verbally different from "biologically compatible" the two mean the same. If this quotation does not indicate that the prior art applied by the examiner does not indicate biocompatibility what does it do?

Kaali et al (acting through counsel) could and should have called this matter to the attention of the examiner but didn't. In view of the quota system in the PTO the examiner should not be blamed for missing this small disclosure in the oppressive mass of materials he had to go over in a limited time period. Much can be said about the lack of a disclosure of this error or of a number of other things to the PTO by or on behalf of Kaali et al. One of the more important things relates to the failure to call to the examiner's attention the treatment cell disclosed by Swartz et al. Isn't the methyl methacrylate used in constructing it biocompatible? The platinum electrodes disclosed in this article are as biocompatible as the platinum electrodes specifically disclosed in the Kaali et al '738 and '684 patents.

The Swartz et al reference is also of interest in another regard. In treating a virus it and the other references cited on behalf of Kaali et al to the PTO use extremely low current densities and voltages which probably come within the scope of the limited application of an electric current as claimed by Kaali et al in both of the patents under consideration. The undersigned does not feel qualified to make a definite statement that this is the case but is virtually certain that it is true. The fact that these references use small amounts of electricity along with ultra violet light and various dyes does not distract that from the fact that they use limited currents. This is particularly the effect since one of these references – the Badylak et al article – specifically includes the statement :

"...The antiviral effect was shown to be dependent on the amount of

electricity applied and the concentration of the dye used."

It is believed that this would clearly suggest to a researcher of normal skill in the field of treating virus containing fluids so as to attenuate the virus in them to determine by routine investigation the amount of electricity which should be used when the concentration of the dye was reduced to zero.

CONCLUSION

Undoubtedly extensive further investigation as discussed in the preceding is in order if more is to be learned about all of the reasons why Kaali et al '738 and '684 are invalid over the prior art and are probably invalid and unenforceable. In a situation such as the present where there are clear estoppels indicating that a device such as the contemplated device comes outside of the scope of the claims of patents such as the two Kaali et al patents there is always the question as to how far the investigation of these patents should go. Only hindsight wisdom can answer this question.

Probably even this article has gone into these patents to a degree not warranted by the facts but warranted by the intent of writing this article in such a manner as to assist the readers of Borderland in understanding patent law. Hopefully they will have a greater degree of understanding of the work done by their patent counsel and be more tolerant of the costs of this work. □

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Creation of Energy and Cosmic Matter from the Universal Space Substratum

by Paramahansa Tewari

Executive Director (Projects)

Nuclear Power Corporation of India Limited

ABSTRACT

The energy in matter is derived from the medium of space which, in a dynamic state, is itself the most basic and primordial source of universal energy. The fundamental matter is identified to be the electron which is shown to be a "vortex of space". The velocity of light "c" plays a broader role in the construction of the universe, in the sense, that the fluid substratum of space breaks down in its flow when its speed reaches c. The basic equations of classical, as well as quantum physics, are derivable from the very "space-vortex" structure of the electron.

Through a new system of rotating-electromagnet, electrical power at low dc voltage, and high dc currents, and in excess of the total input given to the system, has been generated, showing, thereby, that commercially viable electrical power generation can be had in violation of the presently held concept of the "energy conservation" law, within the domain of the electromagnetic induction effects.

The substantial reality of the space medium of the solar system is proved by showing that the axial rotation of the planets and the sun are associated with the "space vortices" around these cosmic bodies, that produce between the sun and the planets electrical repulsive forces also, which, along with the gravitational attraction and outward centrifugal force, determine the orbital stability of the planets.

INTRODUCTION

Mankind has, in the last few hundred years, tapped natural resources and brought about an industrial culture which now governs our day to day living. The dwindling world's energy resources, that are utilized to produce electrical power, sooner or later may exhaust, and this makes us inquire on the ultimate source of power that nature uses for its own creation, so that, the same is harnessed for humanity to survive and prosper on this planet for all time to come. The question should now be raised on the most basic form of energy in the universe, and whether this energy is primarily latent in space or in matter.

SOURCE OF ENERGY IN MATTER

That energy is available in matter is clearly demonstrated by the fact that hydroelectric power generators make use of the kinetic energy of water in motion; that thermal stations generate power through chemical reaction in coal; and nuclear reactors utilize nuclear fuels that have atoms of fissionable material. The physical theories presently accept that energy is latent also in electromagnetic

fields that exist in space, but then, the modern concept is that, devoid of these fields, space is an extension of emptiness. Here, we are confronted with the main question. How was the universal matter created? Whence did it receive its energy? And also, what is the fundamental particle of matter and the genesis of its creation? There are no sensible explanations to these questions under the modern physical theories. This is the dead-end of our current scientific knowledge on the "origin" of cosmic energy and matter to which we have been led around the close of the 20th century.

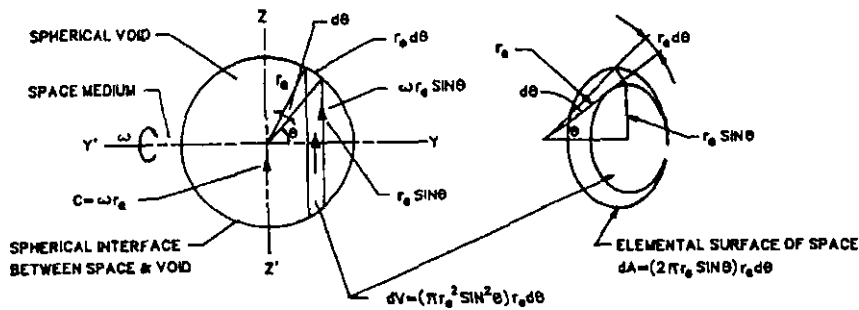
BACK TO SPATIAL REALITY

We can make a simple hypothesis that "space is not an extension of nothingness (void), but rather a fluid entity, that can flow at varying speeds up to the speed of light". A characteristic vortex of space (fig.1) shows the structure of an electron, which is created due to the breakdown of the flow of space, and consequent creation of a spherical void. With the spinning action of space enclosing the void, new equations, hitherto unknown in physics, can be derived to explain the properties of "mass" and "charge" that the behaviour of electron shows to possess.¹ Also, considering the motion of the electron relative to space, the inertia-property and the electromagnetic effects are explainable. With the interaction between the oppositely spinning vortices (electron and positron) a meaningful explanation is possible for the phenomenon of annihilation of electron and positron. The derivation, of the gravitational constant, Coulomb's constant, dielectric constant, permeability of vacuum, and Planck's constant, from the typical vortex structure of electron, and with the aid of classical physics, leads to a positive conclusion that the "uncertainty-principle" and "non-deterministic" approach of the quantum physics are major digressions from reality.¹

The relationship between gravity and light (electromagnetic field) is also revealed with the new hypothesis on spatial reality. The basic fields are unified in the structure of the electron. The relationships of "mass" and "charge", along with the vortex structure of electron, provide powerful tools to do away with all the material properties (mass, density, compressibility, viscosity, discontinuity) as regards the properties of the space-medium which, thus, becomes a superfluid primordial non-material substratum of the most fundamental reality.

ROLE OF VELOCITY OF LIGHT

All the fields including the electromagnetic field (light) are transmitted in the medium of space and relative to it at a constant speed c. Additionally, and this is the new aspect of the Space Vortex



CHARGE ON ELEMENTAL RING SURFACE $dq = \text{RING AREA} \times \text{SPEED OF CIRCULATING SPACE ON RING SURFACE}$
 $= (dA \omega r_e \sin \theta)$

ELECTRONIC CHARGE $e_e = \int_0^\pi (2 \pi r_e \sin \theta r_e d\theta) (\omega r_e \sin \theta)$
 $= (\pi/4) (4 \pi r_e^2 c)$

DIMENSIONS OF e_e : LENGTH³/TIME

REST MASS OF ELEMENTAL DISC OF VOID $dm = dV \times \text{SPEED OF CIRCULATING SPACE AT THE "INTERFACE" OF THE ELEMENT}$
 $= (\pi r_e^2 \sin^2 \theta r_e d\theta) \omega r_e \sin \theta$

ELECTRONIC REST MASS $m_e = \int_0^\pi (\pi r_e^2 \sin^3 \theta d\theta) = (4\pi/3) r_e^2 c$

DIMENSIONS OF m_e : LENGTH⁴/TIME

ANGULAR MOMENTUM 'L'

$dL = dm (\omega r_e \sin \theta) r_e \sin \theta$

$L = \int_0^\pi \pi r_e^4 c^2 \sin^3 \theta d\theta = (4/5) m_e c r_e$

ω : ANGULAR VELOCITY OF SPHERICAL INTERFACE AROUND Y-Y'

VOID: FIELDLESS SPHERICAL HOLE IN SPACE

SPACE: NON-VISCOUS, MOBILE, CONTINUOUS, INCOMPRESSIBLE

VOID RADIUS $r_e \approx 10^{-11}$ cm

GENERATION OF MASS & CHARGE OF ELECTRON FROM ABSOLUTE VACUUM

FIG-1

Theory (SVT) [1], the actual flow of space, while in circulation in a vortex formation, breaks down at speed just exceeding c . With the speed " c " and the radius " r_e " of the void (fig.1), it can be said that the ratio c/r_e , symbolized as w , is the only universal constant that the universe possesses.

BASIC FORM OF ENERGY AND MATTER

A certain volume of space in dynamic state (linear flow or vortex motion) is the most basic state of energy in the universe. Matter having structure built out of the "vortices of space", is itself energy. Rather than stating that "matter possesses energy", the fact is that "matter is energy". In hydrogen atom (fig.2), the region between the nucleus and the orbital electron has rotating velocity field in a vortex formation, which surrounds the nucleus and, thus, forms the structure of proton. The velocity field in the vortex of the orbital electron interacts with the velocity field of the proton vortex and,

thereby, keeps the electron at a fixed orbit away from the nucleus. The conclusion of classical/quantum physics that the accelerating orbital electron should lose energy and eventually fall on to the nucleus is a misconception arising out of the assumption of "emptiness" around the nucleus of the atom. The opposite spins in the vortices of the orbital electron and the proton, and the rotation of the electron bring about the overall neutrality of the atom.

FUNDAMENTAL PARTICLE OF MATTER

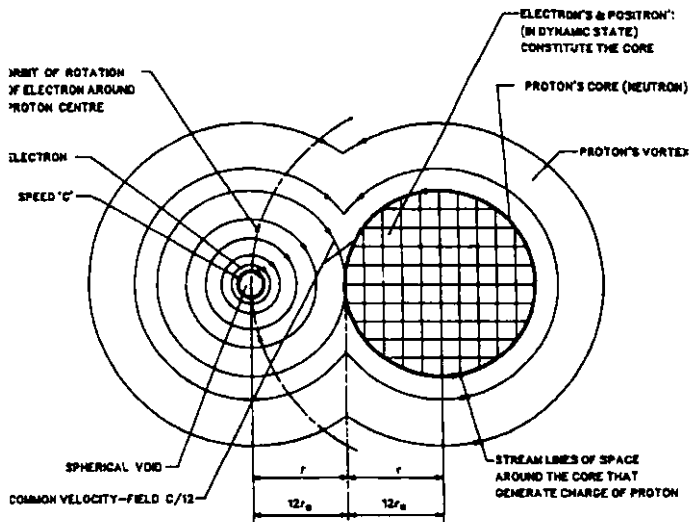
The limitation of the flow of space not exceeding the speed c leads to the creation of only one kind of vortex structure, that is, of electron, due to dynamic stability considerations. Therefore, all stable elementary particles including neutrons and protons will necessarily have to be built out of the electrons (and positrons).¹ The closeness of the experimentally measured values of "universal constants" including "mass" and "charge" of electron with those derived through SVT supports the above conclusion. The detection of numerous unstable particles, discovered in recent decades through high energy particle accelerators, would be due to the "tearing off" of the space medium as the relative speeds of the particles in collisions reach the critical speed c .

ELECTROMAGNETIC INDUCTION

As per Lenz's law, the electromotive force (EMF) induced in a conductor has such a direction that the current produced by it opposes any flux change. More precisely, in a specific case of a conductor moving relative to magnetic field, the magnetic field produced by the current due to the induced EMF in the conductor interacts with the external magnetic field that initially induced the EMF, and thereby produces a net force on the conductor opposing its movement across the magnetic field. If the configuration of the conductor

through which the current flows is made in such a way that the magnetic fields produced by the currents in two parallel and adjacently placed conductors forming part of the electrical circuit (explained further), cancel each other partially (if not fully), then, there is a way out to beat the Lenz's law, due to which mechanical power required to move the conductors across the magnetic field to generate electrical power will get proportionally reduced.

The design of the modern dc generators has difficulties in achieving the above configuration of the conductors, since the generating element is the rotating conductor within the generator, whereas, the entire outer circuit is a stationary loop connected to the loads. It is shown further in this article, as to how the physical constraints in achieving the desired relative dispositions of the conductors can be overcome, and Lenz's law can be made partly ineffective.



C : SPEED OF LIGHT IN ABSOLUTE VACUUM
 r_0 : ELECTRON'S VOID RADIUS

HYDROGEN ATOM
 FIG-2

NON-EXPENDITURE OF EXTERNAL ENERGY IN THE GENERATION OF ELECTROMOTIVE FORCE

In an electric conductor moving relative to a steady magnetic field, as shown in Fig. 3, EMF is induced. The fundamental explanation for the EMF to produce current when the circuit is closed as currently believed is that the conductor has free electrons that account for the property of conductivity, and these electrons experience, in succession, a push (magnetic force) in one direction due to the induced EMF in the conductor.² The EMF is defined as the tangential force per unit charge in the conductor integrated around the circuit. Thus, each electron in the conducting circuit receives energy which is directly proportional to the product of the magnetic force on the electron and its velocity. (With the above definition of EMF and the magnetic force on the electron, it is presently considered that an electric generator, with no-load induced EMF E and load current I , delivers power equal to EI).

Consider the case of an ideal generator which, when run on no load, does not consume power towards windage and friction losses, and yet EMF will be induced in its conductors. Since the induction of EMF in an ideal generator does not require power (excluding excitation), the electrons of the circuit conductors, for the flow of current when the circuit is closed, cannot receive energy from EMF for the successive push on free electrons as stated earlier. The agency for the flow of current in a circuit is no doubt due to the presence of EMF in the circuit but, since the EMF itself has not received from the prime mover any energy during induction, the explanation for the origin of the force on electrons for the flow of current lies elsewhere.

ELECTRICAL GENERATION AT OVER-UNITY EFFICIENCY

In Fig.4 there are conductors R and S placed at right angles to the oppositely directed uniform magnetic fields.² If the conductors are moved (down the paper) at right angles to the magnetic fields, opposite EMF will be induced in R and S. Now, if the circuit of the moving conductors R and S is closed through sliding contacts with stationary conductors external to the magnetic field (not shown in figure), current will flow due to the fact that R and S are the EMF inducing elements in the circuit. The magnetic field B_1 produced by

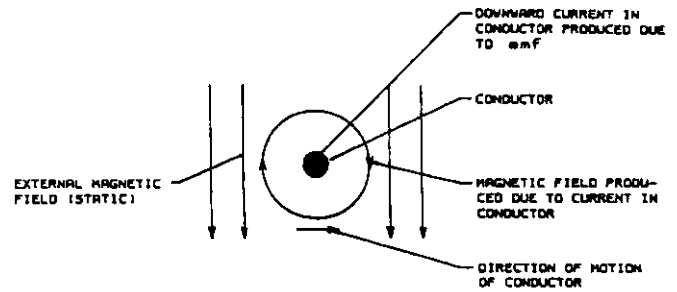


FIG.-3

the current in R will be opposite to the field B_2 as shown in Fig.3. For the motion of the conductors across B_0 (down the paper) power is needed, because the fields B_1 and B_2 have increased the original field strength B_0 on one side of the conductors, and decreased the field B_0 on the other side. If, however, the conductors R and S are sufficiently close to each other, B_1 and B_2 will superpose and cancel each other sufficiently, thereby reducing the power required by the prime mover to push the conductors against the magnetic field and increasing the efficiency of the generator to higher than unity. In an

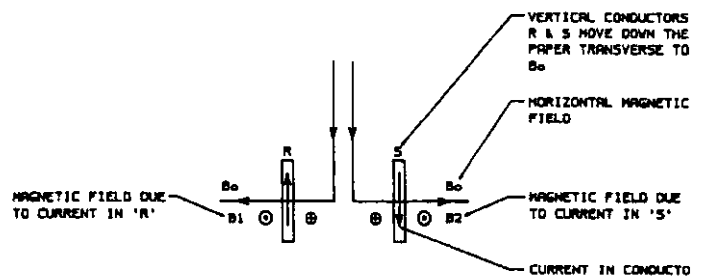


FIG.-4

ideal case, if the fields B_1 and B_2 from R and S can be made to superpose each other to the maximum possible extent, it will lead to the phenomenon of free power generation. It is thus seen that the modern view, as per which a generator has to be given energy by its prime mover so that the EMF generated in it can impart energy to the free electrons of the circuit conductor for the current to flow, is a suspect and debatable point.

WORK MAGNETIC FIELD WITHOUT EXPENDITURE OF ENERGY

In Fig.5, an electromagnet that can lift magnetic iron blocks is shown.² Irrespective of the fact whether the blocks are lifted or not, the dc power to the magnet remains constant, and this shows that work is being done by the magnetic field of the magnet without the flow of the corresponding energy (in addition to the constant dc power for magnetic excitation) from any external source. Further, the strength of the magnetic field due to work being done in lifting the blocks does not deplete. The iron blocks raised to some height

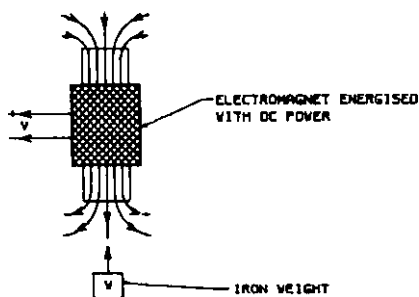


FIG.-5

gain in gravitational potential, but that is due to gravity field of the earth and not connected with the magnetic field system. Thus, it is possible to do work through magnetic field without any loss of energy of the magnetic field itself. It is on similar lines that the magnetic field in a generator pushes electrons to one end of the rotating conductor forming positive and negative polarities and inducing EMF, and in this process, though the electrons are being driven by the magnetic field, there is no depletion of the magnetic field strength of the excitation system of the generator. In view of the foregoing discussions, instead of assuming that EMF induced in a generator transfers its energy to push free electrons of the circuit conductor for the flow of current, the following alternative explanation is given.

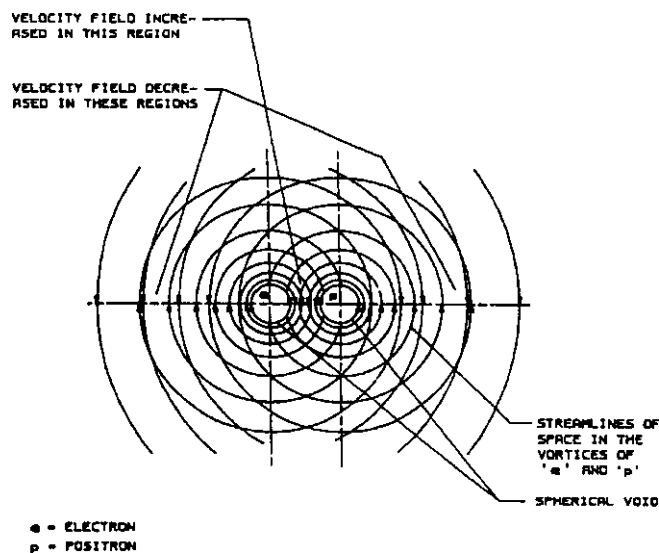
NON-TRANSFER OF ENERGY FROM ELECTROMOTIVE FORCE TO ELECTRIC CURRENT

The positive polarity created in a direct-current generator has atoms that have lost their orbital electrons due to induction of EMF and, therefore, being positively charged, electrically attract loosely bound outer orbit's electrons of the neighboring neutral atoms of the circuit conductor when the output switch is closed. This process of electric attraction of electrons by the positively charged neighboring atoms proceeds from one atom to the next throughout the circuit. The atoms of the circuit, due to the above transfer of the electrons, successively change from neutral to positively charged states, and back to neutral and so on, as the electron's flow is continuously maintained to positive terminal and further, in the whole circuit. The electric attraction of the electrons by the positively charged atoms does not lead to the deficit of the electric field strength of the positively charged atoms that are the "vortices" of nonmaterial and nonviscous-space just as it happens in the case of attraction of the iron blocks from the electromagnet discussed before, where the strength of the magnetic field is not depleted.^{1,3} Therefore, it can be

concluded that the flow of electric current does not require energy from the EMF to be imparted to the free electrons.

FIELDS ARE VARIOUS CONDITIONS OF VELOCITY AND ACCELERATION OF THE MEDIUM OF SPACE

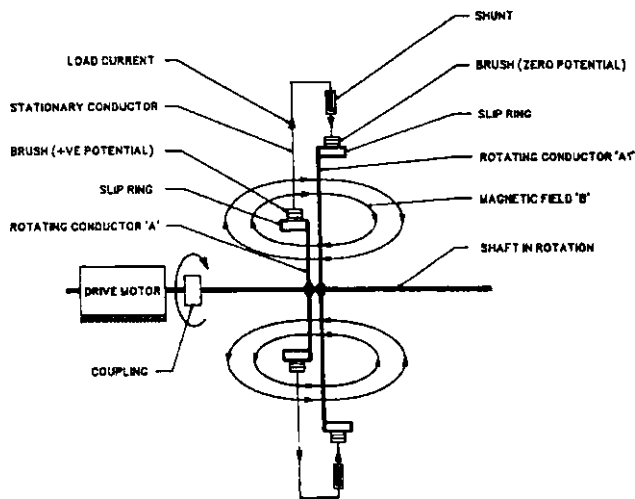
The reason for gravity, electric, and magnetic fields to do work in certain phenomena without reduction in their field strengths is found in SVT as per which the electron, which produces electric, magnetic and gravity fields, has in its structure (Fig.1) a non-material (non-viscous, incompressible, massless, continuous) fluid, which itself is the absolute vacuum.¹ It is the rotation of the absolute vacuum (space) at its limiting speed (equal to light speed, c) that creates a stable electron as stated earlier. The velocity field produced due to spinning of space is the most fundamental state of cosmic energy. Since the medium of space is postulated to be non-viscous, the strength of the velocity fields in the structure of the electron does not change even when the electron is in motion are in interaction with electromagnetic fields and, therefore, the electron exists eternally with space spinning at maximum speed and without any loss of mass, charge, or energy from its structure, till it gets annihilated (Fig.6) by its opposite particle, positron. It has been shown that from the velocity field produced by limiting rotation of space, mass and charge of electron are created, and gravity, electric field are produced.¹ The magnetic field is concluded to be a conversion of the spatial velocity field itself, when electron is in motion relative to space. Therefore, these fields, too, cannot dissipate their field-strengths during interaction, and are indestructible



NOTE: ABSOLUTE PROPERTIES OF SPACE: NON-MATERIAL, NON-VISCOUS, INCOMPRESSIBLE, ZERO-MASS FLUID WITH LIMITING FLOW EQUAL TO THE VELOCITY OF LIGHT

ATTRACTION BETWEEN 'e' & 'p'

FIG.-6



NOTE: FOR SIMPLICITY, ELECTROMAGNET'S CORE, MAGNETIC PATH AND COIL ARE NOT SHOWN

SPACE POWER GENERATOR
(SCHEMATIC)
FIG-7

entities as long as the electron exists. During superposition of fields, as noticed in the creation of neutral state of matter when positive and negative charges are together (as in case of neutral atoms), or when oppositely directed magnetic fields occupy the same region of space, the original field strengths are restored when the initial conditions prior to the superposition are re-established.

"ABSORPTION" AND "EMISSION" OF ENERGY ARE MISLEADING CONCEPTS

In addition to the basic form of energy in the vortex-structure of matter, the other form of energy, that is seen as "momentum" of a body in motion (relative to space), is due to the creation of velocity-field associated with the moving body.¹ The transfer of momentum on impact between two bodies, in relative motion with respect to each other, is achieved through the transfer of the velocity-field between the bodies, and becomes the basis for the law of "conservation of momentum". When atoms of a body A in motion are stopped by a stationary target T, the atoms of T receive velocity field (from the moving atoms of A) and are set in oscillation, thereby creating a time-varying gravity-potential at a point P in the neighbourhood, in accordance with the mechanical frequency of the vibrating atoms of T. Now, if a body M is placed at P, its atoms will start oscillations due to the condition of time-varying gravity-potential existing at P, and will thus also create cyclic changes in the magnitudes of the gravity potential at P due to the mass M, such that the atoms of T, that initiated this process, are now retarded in their oscillations. There is no "emission" of energy (photons) from the atomic structures of the target T, and also, no "absorption" of

energy (photons) by the atoms of the body M in the above process.^{1,3} It is the exchange of momentum initially between the bodies A and T, that can be said to be distributed with the above explained interaction through the timevarying gravity-potential, due to which thermal equilibrium between a hot (target T) and a cold body (M) is achieved. Just as momentum can be exchanged between two bodies only when there is relative motion between them, so also "heat" can be exchanged between two bodies provided there exists difference in their temperatures. Heat, therefore, is a "relativistic effect", and "heat energy" is not as real as the energy in the structure of matter. A body when heated, does not give off its mass as photons of light (electromagnetic radiation) as conventionally believed. The mass energy relation is restricted to the phenomenon of creation and annihilation of electron alone.

SPACE POWER GENERATION

The phenomenon came to light and to the notice of the author in 1978 from Bruce DePalma, who, earlier, was a lecturer at M.I.T. USA, and had discovered through his experiments that electrical output, in excess of the corresponding input to generate power, can be produced from rotating-electromagnets that he named "N-Generator".⁴ Here was a system that could give solid experimental proof for the validity of the spatial reality hypothesized in SVT and,

Table - 1

	Earth	Mars	Jupiter	Saturn	Uranus	Neptune
period of revolution about axis in second	86164	88650	35460	36840	38940	50400
distance from the Sun in cm (D)	14.95×10^{10}	22.78×10^{10}	77.8×10^{10}	112.6×10^{10}	206.8×10^{10}	449.4×10^{10}
mean radius of planet in cm (R)	6.378×10^8	3.42×10^8	71.4×10^8	60.4×10^8	25.5×10^8	22.3×10^8
mass in gram (Mp)	5.98×10^{27}	10.65×10^{27}	1901.4×10^{27}	568.8×10^{27}	47.7×10^{27}	103×10^{27}
rotational velocity in cm/sec, (v)	10.46×10^4	10.24×10^4	12×10^4	110	13.78×10^4	12.78×10^4
electric charge in esu, $Q_p = (M_p)^{1/2} \omega R$ v	231	22	26	25	25	25
electric repulsion from the sun in dyne $(C/4\pi K) Q_p / D^2$	27	26	29	28	27	25
gravitational attraction in dyne, $G M_s M_p / D^2$	27	26	26	28	27	25

Note: G - gravitational constant

27

Q_s - electric charge of the Sun (9.35×10^{28} esu)

K - conversion factor 7.8×10^9 to obtain the force in dyne, since as per SVT, the dimensions for mass are cm/sec in cgs system, and gram = 7.8×10^9 cm/sec. Also, esu = cm/sec, and coulomb's constant in CGSE system is $(c/4\pi K)$ cm/sec.

30

M_s - Mass of the Sun 1.984×10^33 g

The dynamic characteristics of solar system are taken from "Handbook of Elementary Physics", Nir Publishers, MUMBAI.

therefore, the author got involved in experiments with various configurations of conductor and magnetic field within an overall scheme of rotating electromagnet during the last 12 years that led to the repeated confirmation of excess power generation.^{3,5} Brief details of Space Power Generation are as follows:

A rotating system of electromagnet and conductors is shown in Fig.7. The conductor A develops positive voltage with respect to the shaft due to its rotation with the magnetic field B, while the other conductor A1 develops zero voltage due to magnetic field B being in opposite directions in the upper and lower half of the conductor. Though the electromagnet producing the field B along with its iron core and the conductors A and A1 form a co-rotating system, yet voltages are induced in the conductors as discussed elsewhere.^{3,5} The rotation of the machine is achieved with a variable speed drive motor (DM) which can be kept at constant speed during the no-load and load tests of the Space Power Generator (SPG). The test results obtained during the recent tests on a SPG are shown in Table-1. Against an input of 6975 watts to DM, the electrical output, measured through a shunt at the terminals of SPG, is 7584 watts, in addition the 3105 watts of power consumed towards windage and friction of the DM-SPG set running at 3413 rpm. The energy-balance shows that the output exceeds the input by 3690 watts, which is in violation of the law of conservation of energy in this new system of power generation involving electro-magnetic induction effect.

AXIAL ROTATION OF THE PLANETS AND THE SUN

Rene Descartes, the great French Philosopher, (whose 4th birth centenary was this year in September), had believed that the planets and the sun interact through the intervening medium of the "ether" that fills the space of the universe. It is now the conclusion as per SVT that the universal space (ether with the properties described earlier) creates vortices around the planets and the sun, thus developing electric charge on these bodies, and it is the interactions between the "electrically charged" sun and the "electrically charged" planets that, due to resultant repulsive forces, counteract the gravitational attractive forces between the sun and the planets (that spin around their axes) and thereby result in the orbital stability of the planets.

As shown in Fig.1, the electric charge of an electron is proportional to the product of the space-surface spinning around its spherical-void and the light speed *c*. In case of the sun, its electric charge can be determined on similar lines as expressed in charge-equation for electron. With the mean radius of the sun as 6.96×10^{10} cm, and the rotational speed around its axis of about 2×10^5 cm/s, the electric charge of the sun,

$$Q_s = (\pi/4) (4\pi) (6.96 \times 10^{10})^2 2 \times 10^5 = 9.55 \times 10^{27} \text{ esu,}$$

which is extremely close to the value determined through other measurements given below. "The earth's (+) charged electrosphere (clear weather phenomenon) appears to be induced by a (-) charge of 10^{28} esu on the sun" [6]. Similarly, the electric-charge in earth's electrosphere is calculated (Table-1) from the values of earth's surface and the rotational velocity about its axis to be 1.83×10^{28} esu. The Table-1 also shows the computed values of the electrical repulsive force between the sun and the planets, and the attractive gravitational force between the sun and the planets with the use of

Newton's equation on gravitation.

Though, for accurate results, the electrical repulsive forces and the gravitational attractive forces among all the planets and the sun are also to be considered, and also the inclination of the axes of the planets with respect to the planetary plane have to be taken into account, yet, even neglecting the above effects, the values in Table-1 bring out a general trend that the electrical repulsive force and the gravitational attractive forces are comparable except in case of the planet Uranus, where electrical repulsive force is about 39 times the gravitational attractive force. The axial inclination of Uranus being almost in the planetary plane is indicative of the fact that the planet is tilted due to large electrical repulsive force from the Sun. Whereas, in the case of Venus and Mercury due to their very slow period of spin (one rotation in about 250 days for Venus), the electrical repulsive force is non-existent and, therefore, plays no definite role in these planet's orbital stability, which is achieved under the balance of the outward centrifugal force due to their orbital rotation and the inward gravitational attraction by the sun. The conclusion drawn is that the axial rotation of the sun and the planets, being in the same direction, creates electrical repulsive force due to space vortex action around these heavenly bodies and is crucial to the stability of the planets in their orbits, in the sense, that had a planet not possessed axial rotation in the same direction as the sun, it will fall on to the sun due to electrical as well as gravitational attraction, as it is most likely that the outward centrifugal force on it (due to motion relative to space) will in that case be less than the combined effect of the electrical and gravitational forces. This should be the case universally in all the planetary systems associated with the stars. It also gets revealed, that on earth's surface, there is no relative motion between the space-medium and the earth, though gradient in the velocity field of the terrestrial space vertically up (to be discussed elsewhere) will exist.

CREATION OF MATTER WITHIN THE SUN

The solar vortex, with tangential velocity of space on the surface of the sun, will possess velocity field [1] that will increase along the sun's radius towards its centre in accordance with the relation $v = k/r$, where *v* is the velocity of space point at a radius *r* from the centre. At the sun's surface, where $r = 9.96 \times 10^{10}$ cm, and $v = 2 \times 10^5$ cm/sec, from above equation, $k = 1.99 \times 10^{16}$ cm²/sec. With this value of *k*, the radius at which the velocity of space points will reach the critical speed *c* is determined to be 6.7 km. It is, thus, seen that within a cylindrical volume of 13.4 km passing through the sun's centre and along its diameter coinciding with the north-south pole, the space circulation will exceed the critical speed *c*, and due to this, matter in the form of electron, positron, (subsequently assembling in to neutrons, protons) will be created within the sun. The constitution of the sun with hydrogen and helium is due to the above phenomenon of creation of particles and subsequent fusion into atoms. It can be concluded that the Sun and the planets are created within the solar system, and are not formed from the gas nebula that had its origin elsewhere. The cyclic occurrence of the solar flares associated with the sun spots and emission of large amount of matter is the proof of continuous creation of matter in the central zone of the sun.

CONCLUSION

The medium of space is the only absolute entity that, with

inherent motion in it, exists as the primordial dynamic substratum of the universe. The most fundamental state of energy is the "dynamic space" in the form of "space vortices", which appear as cosmic matter. The dynamics of space is the "cause" whereas, matter is the "effect". The fundamental matter is the electron, which is a specific configuration of gravitational, electric, and electromagnetic fields forming its structure, and it is the interactions of these fields that assemble, out of electrons, different particles, atoms, and cosmic matter as a whole. The properties of space being "absolute" and "nonmaterial", the detection of "spatial reality" is an elusive task, except, through the process of inference and experimental evidence of generation of electrical output power in excess of the input.

Lenz's Law, within the electromagnetic induction phenomenon, is equivalent to the "energy conservation law" in mechanics and thermodynamics. Since the experimental results provide conclusive proof of partially bypassing Lenz's law and consequent additional power production, it is possible to commercially exploit this system of high efficiency space power generation for low voltage, high current applications that will also pave the way for self motive engines in time to come. □

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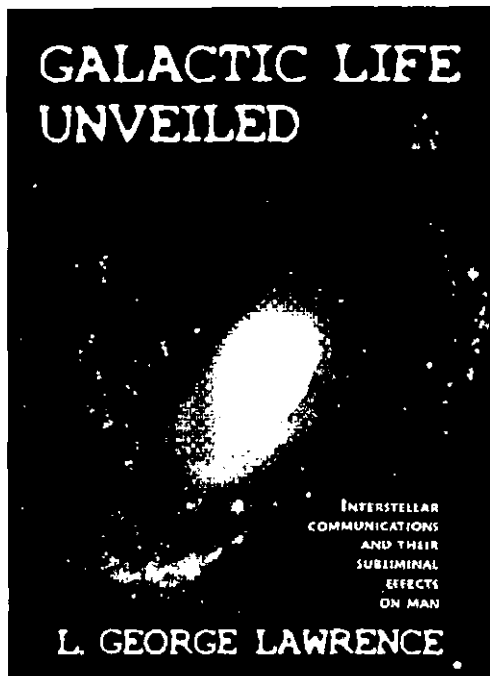
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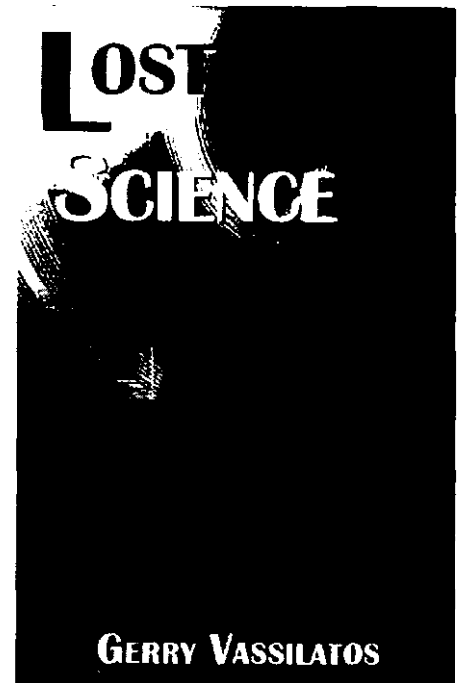
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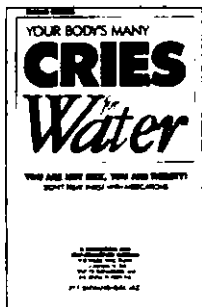
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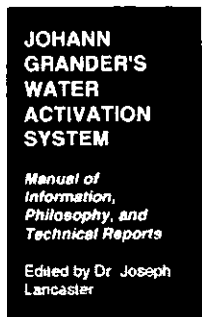
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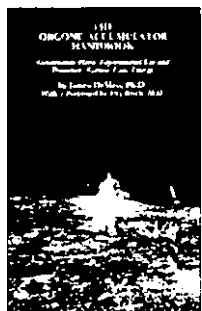
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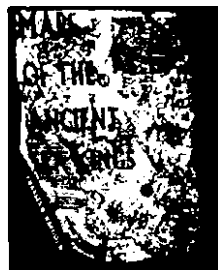


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Your Body's Many Cries for Water

by Feyedoon Batmanghelidj M.D.

A Book Review by
TREVOR JAMES CONSTABLE

RARE indeed are those books destined to become all-time classics. Even rarer are books destined to accomplish a paradigm shift in any major area of modern knowledge. Of still greater rarity are books destined to benefit significantly the health of countless millions of human beings, at no cost to them. Such a landmark book is *Your Body's Many Cries for Water* by Dr. F. Batmanghelidj. He is a London-educated Iranian medical doctor who has made revolutionary discoveries about the water metabolism of the human body. His astounding basic breakthrough was made while he was confined to a Teheran prison, this being a unique circumstance in itself.

Dr. Batmanghelidj is of aristocratic lineage in his native Iran, and when the Shah was overthrown, the doctor was arrested and jailed with more than 3,000 other well-born victims of the Khomeini revolution. While these unfortunates wore awaiting execution, Dr. Batmanghelidj was assigned as their medical officer — pending his own appearance before a firing squad. He had no medical resources other than water, in an environment pervaded by stress and terror. Indeed, the doctor found himself incarcerated in a gigantic stress laboratory.

This became the milieu in which fundamental discoveries were made regarding the medicinal and functional value of water. These are discoveries that have eluded giant medical trusts, vast hospital complexes, battalions of medical professors, universities that boast about their sophisticated research facilities, and all the vaunted resources of the pharmaceutical industry. None of them, or indeed, all of them combined, were capable: of penetrating to the bedrock of human health: adequate daily water intake.

Without realizing it initially, Dr. Batmanghelidj was working with clinical controls in place. Prison discipline enabled him to follow up his patients, who had no possibility of evasion. Forced to use water medicinally, and water alone, Dr. Batmanghelidj was astonished in following up his patients, to find that water was effecting full cures

of diverse, normally ineradicable diseases. These cures occurred in a complete fashion not seen in response to medication, which “treats” or “controls” such recalcitrant and diverse diseases as asthma, arthritis, high blood pressure and ulcers. Official medicine has only palliatives for these conditions, not cures.

If such diseases do not bother you personally, just ask anyone so afflicted how frustrating it is to be perpetually treated but never cured, by doctors who are manifestly flummoxed by such diseases. This bafflement and medical inability to effect cures is almost universal in orthodox medicine, and largely accounts for the stupendous and ever-mounting cost of medical care. People get treated, not cured. They are not cured because the basic cause of their diseases is not known to classical medicine. America harbors and husbands a vast army of people receiving medical “treatment”.

Dr. Batmanghelidj was blessed by a first class medical training at St. Mary's Hospital Medical School of London University, one of the most respected medical schools in the western world. He was one of the last students of the eminent discoverer of penicillin, Sir Alexander Fleming. Thus steeped in classical orthodoxy, Dr. Batmanghelidj was total embarrassed to find that water was doing in a dependable way, what medication had never been able to do. In his classical medical training, like orthodox doctors world-wide, Dr. Batmanghelidj was taught that it was the solid material in the body (the solute) that was important. Only an incidental status was assigned to the solvent aspects of the human body — to water.

Irrefutable clinical experience in the controlled prison environment, forced the doctor to conclude that conventional medicine — of which he was himself a product — was hobbled and handicapped by a false paradigm. The false paradigm undergirded, and locked in place, the illusion that water was not significant in human metabolism compared with the solutes, with which medical “science” has been vainly wrestling, generation after generation. The truth of basic human functioning, as Dr. Batmanghelidj's research progressively confirmed, is that the solvent (water) and not the solute, plays the cardinal role in human health.

Orthodox medicine has been ineffective in dealing with a wide spectrum of diseases, whose etiology is classically listed as “unknown,” because it has this fundamental polarity of solute and solvent back-to-front. The ramified and fundamental role of water has simply not been comprehended. After three years doing basic research in the Teheran prison, Dr. Batmanghelidj was released, and came to America. Here he continued his pathfinding research on the water metabolism of the human body for a further decade or more. He worked with established institutions like the University of Pennsylvania, lectured widely to physicians, and wrote learned papers for professional publications such as the *Journal of Gastroenterology*. The fallout from Dr. Batmanghelidj's exertions included a large number of completely cured persons who had been chronically afflicted with “incurable” diseases. Medical doctors were among these people.

Slowly but surely, numerous intelligent medical doctors and researchers who studied his work, overcame the same embarrassment that had consumed Dr. Batmanghelidj, when he first began comprehending the cardinal role of water in human health and functioning. Like Dr. Batmanghelidj, these enlightened physicians came to realize that medicine was confronting a fundamental paradigm shift. Some of these board-certified physicians are quoted

in the book. More physicians are recognizing this central truth as the months pass.

Nothing so radical, in the root-meaning of that word, had ever happened to medical knowledge in the history of the world chronic dehydration was being identified as the fundamental matrix from which most human diseases emerge. This book will leave you in no doubt that America's deplorable and desperate health care crisis is born of dehydration, midwived by medical inability to deal effectively with diseases whose etiology in dehydration is not understood. Almost every disease arising out of dehydration is attacked with medication, or combinations of medications. sickness therefore proliferates, while the sick cry out in many different ways for water — cries to which doctors are deaf.

Countless ingrained cultural and social customs of modern America, such as not drinking sufficient water, and guzzling phenomenal quantities of diuretic soft drinks and diuretic coffee and tea, reinforce chronic dehydration as the number one health menace in America. Dr. Batmanghelidj emphasizes that drinking coffee, soft drinks and juices does *not* counter dehydration or meet the body's water needs. The only way out is by drinking water.

Elusive and seemingly unrelated conditions like dyspeptic pain, stress and depression, high blood cholesterol, high blood pressure, excess body weight, chronic fatigue, arthritis, asthma and allergies, insulin-independent diabetes, rheumatoid arthritis, back problems and a host of lesser complaints that bedevil human beings, have all yielded to the ingestion of adequate daily water. Dr. Batmanghelidj identifies Alzheimer's as due to dehydration of the brain.

Eight 8-ounce glasses daily is the recommended regimen advocated by Dr. Batmanghelidj, to keep the human body fully hydrated. For each cup of coffee or other caffeinated drink, an additional, compensating eight-ounce glass of water is required.

Perhaps the most welcome and convincing finding of Dr. Batmanghelidj is the key role played by dehydration in creating back ailments in human beings. The spinal discs consist of about eighty percent water. When these discs atrophy through varying degrees of dehydration, an afflicted human is off on one of the most miserable medical merry-go-rounds known to man. The human spine has to support about 75 percent of body weight. Without fully-hydrated and resilient spinal discs, the spine cannot perform its function properly. "Back problems" ensue. Abnormal physical and nervous pressures develop and vertebrae become misplaced as the spinal discs collapse. In the U.S.A., such back problems are now on an epidemic scale, largely defy physicians and surgeons, and endlessly persecute the afflicted.

Dr. Batmanghelidj has found that rehydration restores the integrity and resilience of the spinal discs. Simple exercises he has devised, create a natural vacuum effect: that draws the needed water back into the discs, whose proper bearing function is thereby eventually normalized. Contrast this with the dead-end, mechanistic "back surgery" that now consumes hundreds of millions of dollars in surgeons' fees and hospital costs every year.

Back pains are among the body's many cries for water, from which Dr. Batmanghelidj's book has appropriately taken its title. The horrific wheezing of an asthmatic, which is one of the most embarrassing and distressing things anyone can witness, is similarly the *body crying for water*. Dr. Batmanghelidj has demonstrated that asthma is due to the body's natural histamines constricting the lungs

to limit any further loss of water via the breath. The person so afflicted is desperately dehydrated. In the prison environment in Iran, adequate water provided a cure for asthma — one of the astonishing clinical results that first started Dr. Batmanghelidj thinking about the medicinal power of water.

Dr. Batmanghelidj as "scientific absurdity" the way in which hypertension is classically treated. The dehydrated body is desperately trying to hang on to its water volume. Uncomprehending physicians intervene with diuretics and literally force more water out of an already dehydrated body. The author gives lucid, comprehensible descriptions of the exquisite hydraulic design and engineering of the human body, and the diverse functions of the cells, capillaries and membranes as they operate to compensate for dehydration. If the body's many cries for water are ignored, as they are in contemporary America, degenerative diseases are the inevitable consequence. A congress scrabbling to deal financially with an avalanche of degenerative disease, is verification enough that the time has come for a new medical paradigm.

Our typical regular readers of *Borderlands* will have no difficulty in understanding either Dr. Batmanghelidj's book, or the stony response that he received on placing his findings before the American Medical Association. The book includes reproductions of his correspondence with the A.M.A. This reviewer regards this book as the most important health book of the twentieth century, since its content can directly benefit everybody — at no cost and right now. *Borderlanders* should not only secure these benefits for themselves and their families, but also should make them more widely known. Dr. Batmanghelidj is making a Herculean effort to pass the blessings of his work into the lives of all human beings. He is not permitting his work to be sequestered or short-circuited by reactionary orthodoxy. He will need all the help that we can give him. A commentary is appended, to outline some of the biopathic reactions to Dr. Batmanghelidj's life-giving discoveries that can be expected from our anticivilization. □

See page 57 about ordering the book "Your Body's Many Cries for Water" by Feyedoon Batmanghelidj, M.D.

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In Memoriam

WILHELM H. LEHR

by Gerry Vassilatos

Borderland readers may be saddened to note that Wilhelm H. Lehr, famed researcher and experimenter, suddenly and quietly passed from this earth on Christmas Eve last. While we do mourn the loss of our dear and devoted friend, there are several intriguing chapters in his life which should joyfully be recalled. Those who know of Mr. Lehr recognize in him the qualities of a quiet and formidable genius. His life story was filled with notable episodes, each a surprising doorway opening out into a larger and more prolific world. I took special joy in simply letting him tell these stories, only now realizing them to be the rarest of treasures.

The long list of his technical achievements comprise the foundation to an incredible spiritual odyssey. It is my personal belief that his both experimental and bibliomantic findings actually constitute a separate bibliography. For this reason, something of his remarkable life deserves mention. Please realize that mine was a relationship largely conducted through the telephone. My short biographic sketch cannot therefore be considered adequate or thorough at all. Nevertheless, there are aspects which I believe will indeed be illuminating.

There is a very special knowledge, a visionary knowledge, which is the thorned mystical rose which a few embrace in their lifetimes. Secret lovers of the world-mystery, certain rare persons become intense points from which whole scientific epochs emerge. Seekers of a far better world which could and should be, they burnish the shining future and sing the echoes of a wondrous past. The names which fill the scientific records which we value comprise an unbroken cord, whose tracings lead back to ancient halls where learning was loved. The old knowledge finds its way to our amazed eyes through an incredible winding path. Cherished by its devout keepers, each generation reveals select individuals who divulge their secret treasures.

Young Bill Lehr quickly became a natural adept at all things mechanical and electrical. In his formative years, Mr. Lehr was literally tutored by a radio master, an elderly gentleman who continually spoke to him of praetor-scientific realities. The mysterious "after school mentor", of whom he spoke with sincere gratitude and genuine awe, was a devout Christian mystic of the old spiritual school. It was in this company that the forgotten history of lost technologies were passed on to him. Rumors which he had heard in magazines and newsprint became fact in the saying of the old gentleman.

Theories were gradually opened to Bill, those secret theories germane to the mysterious acquisition of energy directly from space or from the earth. The archane tradition of manual training was accompanied by thematic lessons. This was a time which Mr. Lehr often mentioned with special reverence, a time when Tesla, radionics, and electronics formed an inimicable fusion. The scientific lessons learned in the old Radio Shoppe formed a mystical canon,

a box of secrets not capable of being shared with others. The door having been thus thrust aside for him, a view and prospect on a deeper world was made clear.

Bill Lehr's father, an engineer, both helped to design and operate the several Calutron "racetrack" transmuters of the Manhattan Project. Being thus found at the very highest security levels of the Manhattan Project, the Lehr family was constrained to live in Oak Ridge for a long time. From a young age, Bill Lehr was well acquainted with the priority placed on classified projects. Because of his father's role and because of this extreme pressure, young Bill learned very early to remain a sharp observer of his surroundings. While the fathers and mothers of his friends labored to build the atomic terror weapon to punish national enemies, the children were themselves being terrorized as enemies by their own national authorities.

Mr. Lehr repeatedly and gleefully told the tale of those too obvious and long-coated strangers who continued "shadowing" the Oak Ridge child population. Apparently, these persons imagined themselves to be both invisible and invincible. Ever the humorous and pithy intellect, Bill delighted in walking right up to the "spooks" to greet them. This, he said with particular delight, often threw them into abrupt states of shock. Pulling the mask off the authorities was an enlightening revelation. As developments in Oak Ridge came to their atomic completion, this secret service profile changed totally. Now CI began addressing the children of Oak Ridge with a mounting hostility. These elitist deprecations became famous throughout the area, becoming especially verbal when agents followed groups of children to and from school or the movies. The adroit quotes usually took the form of "just shut up and keep moving" and "keep off the street...you just might disappear". From this time onward, his attitude concerning this form of authoritarian expression was justified and uncompromising.

As a young man, his continuing love of the ever-developing Radio Arts became legendary. Infused with a permanent ability to recognize the reality inherently codified in the burgeoning themes of science fiction, Mr. Lehr eventually secured proofs that most of these "supposed" fictions actually represented the highest of classified technologies. An awareness of this "split-level" reality became a lifelong preoccupation. During the Second World War, Mr. Lehr became a Naval Radio Operator, a position which eventually led him into highly classified research in the NRL. It was his privilege to "key" the Jim Creek VLF Transmitter, a megawatt station which he described in awestruck tones.

He eventually found himself in the employ of the Naval Research Laboratory, for a short time having been drawn into Naval Intelligence work. Naval service eventually revealed his talents and amazing abilities in electronics, talents which led him into intelligence operations which he refused to divulge to me. The only mention made of these years was that his work exposed him to powerful X-Radiation, exposures which he believed were responsible for his subsequent neuro-debilitating ailments. Never able to guess the source of these radiation exposures, I was hoping that he would himself open the mysterious chapter to me at some future time. True to his original oath, he spoke to me never a word concerning the issue. When I once pressed him on the matter, he corrected me in a grave and serious manner. I never asked again.

He gained fame as a radio personality, applying his amazing

voice in the employ of several major Radio Broadcasting Companies. He served as both engineer and announcer, having on several occasions aided the designers of transmitter stations. He retold the tale of a friend who literally "dowsed" the placement of a powerful midwest transmitter tower. The extensive placement of buried copper screening formed the ground mass which insured the powerful transmission of signals overseas.

Throughout the years, his deep and passionate love of cinema compelled him to the sound stages of several movies in which he subsequently appeared. This was a time which he fondly described. In addition to these ultimately public spotlights, Mr. Lehr played saxophone for several Big Band names. He met and conversed with a great many more famed personalities in the world of stage, movies, and music. He told how that he occasionally delighted to meet with the gentlemanly Duke Ellington...in order to go fishing!

After this brief brush with fame "in front of the cameras", Mr. Lehr became a specialist and master craftsman of the most erudite cinematic machinery. It was this occupation which further resumed and retained for him his social familiarity with the most illustrious individuals of the Golden Hollywood years. Bill was the optical craftsman responsible for producing high precision quartz lenses with the various craft shops of Hollywood. He was the smiling, familiar face behind the scenes; the one responsible for improving and maintaining both Panaflex Camera Systems and those private screening projectors which stars and starlets kept for personal use. On call, he often found himself visiting and revisiting such like as Roger Cornman and Roy Thinnes.

I can now only guess that the NRL exposures may have been the result of work on powerful experimental transmitter tubes, whose excessively high voltage and hard vacuum states produced a flood of penetrating X-Rays which may have been impossible to shield. Given the nature of the work being performed, the unfortunate semi-lethal exposure may not have permitted other recourse. He told me of his hatred of X-Rays. Sadly, he once recalled the exact moment and place where, some time afterwards, he was instantly struck by a mysterious ailment. Just after a meal in a small diner, Bill was crossing a bright street with a small number of friends. The afternoon was joy-filled and brilliant with sunshine. Caught midway in the laughter, midway in the sunlight while crossing the street, he felt completely enveloped in a wave of nausea which dropped him to the ground. The complete loss of balance was never expected. His friends clutched him up from the ground and helped him regain his normally composed state. This horrid residual would be the terrible consequence of his wartime work, presumably on super highpower electronics. The illness haunted the remainder of his life with severe neuroaesthesia.

Despite his unpredictable and frequent loss of balance, he refused to be stopped from performing the pleasant duties of responsible husband and father. Nor did he allow his unfortunate postwar condition from preventing the diminution of his research or machine crafting skills. Mr. Lehr became an active and avid pursuant of every vague and anomalous scientific reference. Throughout his years, he literally collected and saved the memory of every available scientific rumor, excerpt, article, and patent. Bill Lehr saved the every trace memory of those "lost technologies", recalling the cavalier manner in which each such technology was "lost". The gradual erosion of the social record, the manner by which texts and

popular publications were methodically eradicated from the local libraries, was not unnoticed.

Mr. Lehr demonstrated his ability to interpret, with unerring accuracy, the various maneuvers of intelligence bureaucracy with regard to anomalous energy technology. He remarked that these technologies were the simple outgrowth of very unusual but basic phenomena. As an analyst of patent information, I have not met a better mentor. Previously having appraised myself to be somewhat of an expert in patent matters, I was very pleasantly surprised to find a true master. It is the greatest of thrills to make real contact with a person who knows deeper truths. Mr. Lehr related inventions and theories which I had never been able to glimpse or even guess. My years in the Archives were simply insufficient to match against his far greater confidence and experience. He easily recounted and reported a great many such discoveries which, throughout the developmental decades of electronics, had been eradicated from the view.

He confirmed my sense that the years 1920 through 1930 produced the most prolific flood of energy related technologies, a fact not well chronicled in the patent records. Mr. Lehr continually replied that the mentioned decade was a period in which strong regulation and eradication of such technologies had become an issue of "national security". He confirmed my strong supposition, by bringing forward an enormous wealth of periodical literature from the period. These files have since been passed on to myself and certain other trusted persons in total.

Such intellect and ability however attract persons of divisive intent and dubious sincerity, as Mr. Lehr found during the last several years. What began as an innocent conversation on these science related topics, gradually became an unending entrapment. Bill attracted the close attentions of certain Utah-based religious representatives, persons who initially made a very simple and straightforward request for "scientific information". Providing adequate funds, Mr. Lehr was simply asked to produce a collection of patents and articles on the history of free energy devices. Although he had made neither personal such advances, neither requests, his guests informed that his skill was the very reason why he was "contacted". It was not a study which he disliked. Quite the contrary, he was thrilled to now have adequate patronage in order to pursue his bibliomantic love. Here was a task to which he was already well-suited, and it could not have come at a more opportune time.

By now retired and unable to collect a decent government pension, Bill struggled economically. His increasing symptoms and the dearth of the post-1970 recession made the patronage very attractive. Trusting this offer to be exactly what it was stated to be, an historical patent search, Mr. Lehr thrust himself into the work at hand. His patrons would have their due reward in exchange. His methodic collection and subsequent dispersion of the vast bibliography, the patents, articles, and texts which he secured, were sent on ahead to the patrons. The bibliography was enormous in scope, a complete search of anomalous designs throughout the Twentieth Century. The search was done, a masterwork. And then the trouble began.

His patrons now raised their "dissatisfaction". They claimed that their intentions had been misunderstood. It was not now enough to have provided a mound of paperwork. They quickly came calling once again; a smiling, white-shirted group who now collectively

informed Bill that he had misappropriated their monies. The funds, they claimed, were to have been used toward the production of a "free energy machine"; a fact which they now added had been implicit in the conditions of their funding. Mr. Lehr stated in very clear terms that at no time was this requirement ever placed upon him. The smiles disappeared, the soft tones became demands. He now was to be given adequate funds toward the development of specific technologies, with particular intent on the absolute reproduction of the T. H. Moray devices. He immediately comprehended why "they" had come so far to secure his aid. They were desperate for new world-sweeping funds. The possibility of any impending breakthrough in the now heavily researched energy field of the Carter Years would rob them of a lost project, one which they persistently claimed was "their own".

Every response was curt. Bill Lehr stated that the task was too formidable, given the curious lack of information. He required the "purloined files", a source which would remain absolutely unavailable to him. Threatening him with financial ruin, Mr. Lehr stated that no other engineer could demonstrate even a semblance of the Moray Effect. Mr. Lehr was now required to repay the funds, unless he came through on his supposed promise. The unfortunate lack of available literature had left behind only the proof, but not the means. For this reason, he personally visited the Moray Laboratory site. Walking through the gate and into the old building, Mr. Lehr found the rooms curiously unattended. Left exactly as they were left after 1970, Mr. Lehr was allowed to search through the area, quite alone there for some time.

Several Blue Arcturus tubes sat on the large dust covered desk, a suspicious fact to which he always pointed. He handled the special Moray healing tube, a multilayered target tube, having a strange "glass teapot" geometry. He is perhaps best known for obtaining the best references on Dr. Thomas Henry Moray to date, having personally handled the various famed tubes and components. All of these pieces of information subsequently appeared in the underground science community, a purposeful release in the event of his own disappearance. A vast assortment of radio related devices continually poured forth from his shop. Built by his own hands, the master machinist and designer provided the numerous prototypes which were now being closely monitored. New designs came from his humming shop in a steady stream of inspired creativity. But no Moray Effect. Bill therefore tried to allay the inquest by producing several related devices, machines which demonstrated an anomalous production of energy. He was continually visited, threatened, and generally harassed again by the group; a situation which had recently provoked his exodus from the Northwest. My conversations with Bill began just prior to this necessary move.

With but a few exceptions, his large storehouse of revolutionary devices produced no electrical currents. But they did produce extraordinary currents in another realm altogether, an effect which I was quick to mention to Bill. This commentary provoked a quizzical but highly encouraged response from him. The thought had never occurred to Bill that his concept of "electricity", first learned from his aged mentor, was closer in form to that of Reichenbach and Tesla. This thought, I am now sure, produced its good resolution. Indeed, the instruments which Bill successfully produced gave exceptional strength in the aetheric realm. These curiously "nonelectric" devices were a continual source of disap-

pointment to him.

Provoked by his antagonists to provide sources of electrical power, I found him despondent over his supposed failure. I began to express the belief that all of his designs represented a powerful and new radionic technology. Weeks ago I sought more proof on the issue, and became absolutely convinced that the principal function of his designs was in fact wholly radionic. Large multisegmented disc composites, multilayered coils, grounded terminals, and special elemental coatings...his beautiful designs represent a true revolution in radionic switching technology, finding utility in the systems which regulate regional earth currents.

As encouragement in this understanding, Mr. Lehr made mention of an anomalous phenomenon, an energy effect which manifested itself among his collection of shelved radionic devices. The events occurred just after the installment of two very deep ground rods. These were placed at some distance from one another, the result of sensitive placement, and were completely insulated by thick sheaths of PVC. Their heavy cable leads had been brought into his shop, having been left on the floor. These sat near to several of his switching devices.

On two separate occasions, Bill reported several bright flashes of an uncommon white light. This light literally shuddered through his shop, a twofold witness which provides the best proof that his science is a radionic science. The activation of his designs was a direct result of ground currents which were brought up through his deep terminals. The articulate absorption of this energy, by his radionic assortment produced the flashes, a phenomenon which completely "resembled the reflection of sunlight from a passing vehicle". Springing to his feet, and dashing to the door to see, neither roadways, nor vehicles, nor opened storm doors were in sight for miles. Bill was surprised to add that the flashes were possessed of an extraordinary levity, a complete release of local negativity. The notion of his imminent success in the radionic realm seems to have been correct, an encouraging lift which he entertained, at first almost reluctantly. His most valuable contributions in this regard was made in medical radionics. A recent report had been delivered to him just weeks ago by a dear friend, a naturopath. The report proved that a special highpower sparkgap device, one designed by Bill Lehr, produced a documented healing. A man who was sent home to die, was subsequently deemed "clear" by his amazed physician.

I cannot now count all the things which I will miss when thinking of my friend, but I feel the weekly void which was once filled with his wonderful company. Telephone conversations with Bill Lehr were always an adventure, bordering on the surreal. Our discussions travelled from this world to a world of wonder and possibility, a world where spiritual realities ruled the mundane things. Our conversations transcended mere talk, easily becoming a telepathic communion. Frequently joking over the plausible wiretaps applied to his line, we delighted in "triggering the tapes". This humorous litany of "buzzwords" sometimes began our Wednesday night talks. I do and will always miss his telephone calls. The rich, golden throated voice of the caller who always began by saying, "I know what you are thinking...and I see what you have done", will forever haunt my thoughts. It only occurred to me recently that his humorous and mischievous greeting was the calling card of Le Comte de Monte Christo, an apt and accurate profile of Wilhelm H. Lehr. We will not see his like for a long time. □

Did you miss something?

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Vol.51, No.2, 2nd Quarter 1995

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The Quarterly Journal of Borderland Research

Vol.51, No.3, 3rd Quarter 1995

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BORDERLANDS

The Quarterly Journal of Borderland Research

Vol.51, No.4, 4th Quarter 1995

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- MEUCCI - Gerry Vassilatos
- * VOCAL MOTORS - SOUND MILLS AND PHONOMOTORS -
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The Quarterly Journal of Borderland Research

Vol.52, No.1, 1st Quarter 1996

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Vol.52, No.2, 2nd Quarter 1996

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The Quarterly Journal of Borderland Research

Vol.52, No.3, 3rd Quarter 1996

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The Quarterly Journal of Borderland Research

Vol.52, No.4, 4th Quarter 1996

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Gerry Vassilatos
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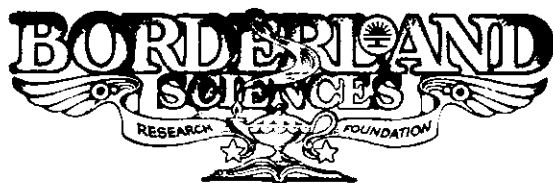
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