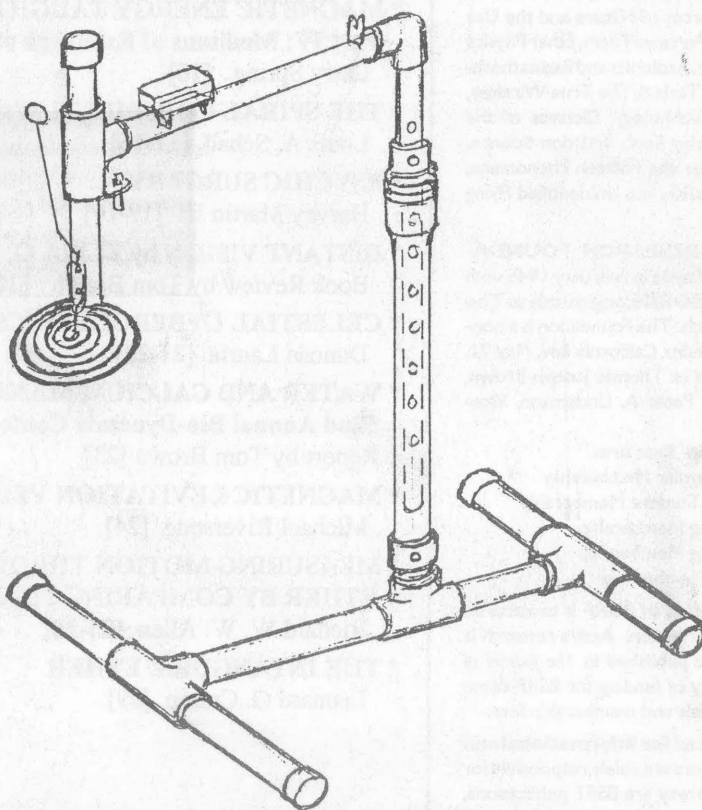


The Journal of Borderland Research

Vol. XLVII, No. 2

March-April 1991



SPIRAL COIL MULTI-WAVE OSCILLATOR

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EDITOR

Thomas Joseph Brown

PRODUCTION ASSISTANT

Yerba Santa

CONTRIBUTING EDITORS

Alison Davidson

Peter Lindemann

Jorge Resines

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HUMAN ECOLOGY THROUGH RAJA-YOGA

Ancient Insights for Global Development

by Dr. E. A. V. Prasad, Department of Geology,
Sri Venkateswara University, Tirupati, India

Reprinted from the Proceedings: TOWARDS 21st CENTURY; Lecture-cum-seminar on TECHNOLOGY ASSESSMENT AND TECHNOLOGY FORECASTING. Sponsored by the Department of Science and Technology, and National Conference on FUTUROLOGY. Sponsored by the University Grants Commission, held on April 8-11, 1987 at the Sri Venkateswara University, Tirupati.

ABSTRACT

Two factors are chiefly responsible for the stress and strain in the world today; these are: (a) the explosive development of science and technology, related exclusively to the external environment, without any consideration for the internal spiritual environment in the humid west, and (b) application of imitative imported technology, unrelated to the necessities and compulsions of the natural environment of the developing countries in the tropics.

These problems can be rapidly and successfully tackled through the universal laws of human/spiritual ecology, developed through Raja-yoga (Sovereign Science), as expounded in the ancient scientific Sanskrit texts, for all-round progress and prosperity in the East and West.

I. INDIAN SCIENCE, PHILOSOPHY AND LOGIC

INTRODUCTION

The four-fold purpose of human existence is to lead a righteous life (*Dharma*), acquiring wealth (*Artha*), fulfilling desires (*Kama*), and finally to attain salvation or God-realization (*Moksha*). For this purpose one of the modes of approach, prescribed in ancient India, is *Raja-yoga* or Sovereign Science consisting of the universal laws of human/spiritual ecology and environment for both materialistic and spiritual progress. It embodies the knowledge pertaining to sentient and insentient, phenomenon and noumenon, unifying science as *fructifera* (fruit) and science as *lucifera* (light).

TOTAL ENVIRONMENT

Environment is chiefly classified into two types, viz., the gross external (macrocosm) and the subtle internal (microcosm). Five primordial elements, called *Puncha-maha-bhutas*, viz., [1] the Earth (*Prithu* or

mineral matter), [2] the Water (*Ap*), [3] the Fire (*Agni* or geothermal energy), [4] the Air (*Vayu* or gases), and [5] the Sky (*Akas* or extra-terrestrial radiations) constitute the external environment. The three factors of the internal environment are: [1] the Mind (*Manas*), [2] Intellect (*Budhi*), and [3] Egoism (*Ahamkara* or I-consciousness). All these eight factors together constitute the total environment (*Bhagavad Gita*, 7:4). In this, the body of the biosphere (*Jeeva Prakriti*) is formed from the abiotic or physical environment (*Jada Prakriti*) consisting of the hydrosphere, lithosphere, and atmosphere; and the life element (*Prana*) upholds the higher *Prakriti* constituting the entire world (*Bhagavad Gita*, 7:5).

According to the most ancient Sankhya system of philosophy, truths are obtained from both the environments. The truths of the external environment are the Positive Sciences, derived through Immediate knowledge, while those of the internal experience are psychology, metaphysics, and religion developed by Mediate or Inferential knowledge as Normative Sciences. The external truth must bear testimony to the internal truth which in turn must have its verification in the outside world.

METHODOLOGY OF HUMAN ECOLOGY

The ancient scientific Sanskrit texts, such as *Jyotissastra* (astronomy/astrology) and *Ayurveda* (Science of Longevity), deal with human/spiritual ecology developed through *Raja-yoga*. The ancient Indian rishis, with regulated perception, have recognized the ecological significance of the natural instincts and adaptations of plants and animals which successfully withstand various environmental stresses and flourish in a welfare state; and, with sound rationale and reasoning, the fundamental laws of applied ecology have been formulated for exploration

and exploitation of the environmental resources; and with the faculty of intuition, perfected the universal laws of external nature harmoniously integrated with the sacred and supersensuous laws of the internal spiritual nature through symbolism and superimposition.

In this sequence, God as the Supreme Ruler of the Universe has been logically proved to be the ultimate cause of all the processes and phenomena, manifesting as effects or responses, in the three different states, viz., the subconscious, conscious, and superconscious states, revealed through the instincts and adaptations of plants and animals, reasoning of the human beings, and intuition of the perfect masters or enlightened souls. This sort of scientific approach, called *Avastha-traya-Prakriya*, i.e., the methodology of three states, prescribed to grasp the divine law of unity in diversity, is based on the invariable concomitance of cause and effect, involved in *Raja-yoga*.

Modern ecology also realized that there is a series of arresting similarities of coordination and behavior in various kinds of animal societies with the underlying impulses and reflexes in human societies (Bonner, 1955); and hence came the realization that the human aspects of the environment are derived from the same knowledge that is generated by those who analyze biological and physical environments (Jain et al, 1977, p.57). The editor's foreword to Kovalevskii (1978) pointed out that "intuition gives the closest approach to reality".

INDIAN LOGIC

Sutras

The ancient Indian works are in Sanskrit *slokas* (verses), expressed in the form of *sutras* (aphorisms) which embody a maximum thought of universal character condensed, without ambiguity, into a few essential words to serve as memory aids for subsequent discussion. The Latin logicians of the 13th century also made such an attempt and invented mnemonic verses for the purpose of rendering it easy to remember.

Sruti-smriti Concept

The Indian tradition of philosophy has two distinctly different aspects consisting of: [a] *Sruti*, representing *Sanathana dharma*, which is eternal and universal, and [b] *Smriti*, representing *Yuga dharma*, which is local, parochial, and temporary in application, providing the necessary flexibility to discard the obsolete methods and to adopt those which are relevant and responsive to the social change.

Same is the case with the Indian tradi-

tion of science and technology which, unlike in the West, is harmoniously integrated with philosophy and spirituality. Thus it consists of: [a] *Sruti*, representing the fundamental scientific laws and principles; and [b] *Smriti*, representing the variable scientific practices and instrumental methods to be adopted in the context of technological developments and discoveries.

Logic in Jyotissastra

In order to examine the logic adopted in *Jyotissastra*, Chapter 54, entitled *Dakargalam*, with 125 *slokas*, dealing with Tropical Ground Water Hydrology in *Brihat Samhita* (Kern, 1880-84), is taken as a representative case. Modern scientific aspects of this subject has been discussed in several earlier works (Prasad, 1980, a, b, c; 1986 a, b, c).

In the ancient Indian approach, first scientific knowledge, *Vastu-tantra-jnana*, i.e. knowledge of existing fact or discovery of fact, is developed by Inductive Inference as pure science; and derived from this, by Deductive Inference, *Purusha-tantra-jnana* i.e. the knowledge depending on *purusha* or person and his interest, is developed as applied science according to the principles of *anumana* in *Nyaya Darsanam*, the unique Indian system of logic. The word *anumana* literally means 'after knowledge' implying applied science, evolved through the medium of a mark, sign, or indicator characteristic. Such a mark is the 'accidental characteristic' (*Thatasta lakshnam*) perceptible as effects or responses in the external environment to determine the innate definition (*Svarupa lakshnam*) of the unseen internal factor constituting the true cause.

Parartha Anumana in Ground Water Ecosystem

According to the Nyaya system, the logic in tropical ground water science may be classified as *Parartha Anumana* which is stated in the form of five *avayavas* (organs) consisting of: [1] *Pratigna* which is the proposition asserted; [2] *Hetu* which is the proposition stating the reason for the assertion; [3] *Udaharana*, the universal proposition connecting the reason and the fact asserted with illustration; [4] *Upanaya*, the application of the universal proposition, and [5] *Nigaman*, i.e., conclusion.

Thus Varahamihira at the outset (*slokas* 1 & 2) makes the *Pratigna* or the proposition of assertion that ground water, as a constituent part of the hydrological cycle, occurring below the earth, like veins in human body, is involved in movements and modifications depending upon the environment; and states in *slokas* 3-5 the *Hetu* or reason that these

variations are due to *Ashta-dik-palakas* or Rules of Eight Directions together with the Vertical. The introductory *slokas* 1 & 2 also include *Upanaya* that this hydrogeological knowledge helps mankind to locate and utilize ground water resources leading to fame and religious merit in the tropics.

As *Udaharana*, for the proposed assertion, he gives a series of sutras dealing with various ecological and environmental indicators to locate ground water in arid and semi-arid regions devoid of surface water sources. These indicators include various species of plants and animals, soils and rocks, including the geophysical (thermal, rigidity, and seismic) properties -- all responding to high relative humidity consequential to ground water occurrence. In all the sutras, the emphasis is placed on the orientation trends of the bioindicators and ground water: Further Varahamihira provides the effective methods of ground water exploitation maintaining perfect and harmonious ecologic balance.

Ashta-dik-palakas

Varahamihira at the outset stated the higher law that the hydrological cycle, involving the occurrence, movement and modification of water are all primarily controlled by the orientation trends of nine directions consisting of the eight cardinal directions (north, northeast, east and so on) together with the vertical. The eight cardinal directions are controlled by the *Ashta-dik-palakas* (Prasad, 1980 a). Based on this higher law, adopting the Inverse Deductive method different overground ecological and environmental effects of ground water of different depths, quality, quantity, and directions of flow, have been clearly enunciated emphasizing influence of the orientation trends in the environment. Thus the logic behind the ground water science in *Jyotissastra* is a combined or complex method of induction and deduction or 'concrete deductive method' falling under the category of a 'Regressive' or 'Prosyllogistic' or Analytic train of syllogistic reasoning. From this, by the Abstract Deductive method (or Geometric method), different philosophic and spiritual aspects may also be logically deduced.

The *Ashta-dik-palakas* consist of: [1] the east represented by Indra (god of Firmament, i.e., the extra-terrestrial radiations from the sky), [2] southeast by Agni (god of Fire, i.e., geothermal energy), [3] south by Yama (god of Death), [4] southwest by Nirriti (god of Disease), [5] west by Varuna (god of Rain), [6] northwest by Vayu (god of Wind), [7] north by Kubera (god of wealth, i.e., ocean) and [8] northeast by Siva (god of

weathering and destruction). Hopkins (1915) discussed the mythological aspects of these gods as the world-rulers of eight directions. These gods actually are the symbolic representations of different natural processes and phenomena, as anthropomorphic forms, controlling the geologic and biologic worlds.

Modern ecology (Clarke, 1954, p.211) also pointed out that the orientation responses of plants and animals are rigidly controlled by the interacting influences of such factors as light, gravity, temperature and moisture. Geological, geophysical, and remote sensing techniques have revealed the most striking orientation trends of the structural features of the earth's crust, including the surface and subsurface water courses. These are developed by the *Ashta-dik-palakas* which are also responsible for the orientation trends in plants and animals acting directly or indirectly on their changing physiological states. Thus these *Ashta-dik-palakas*, as rulers of eight cardinal directions, control the orientation trends of the external and internal environments of both the geologic and biologic worlds.

Polysyllogism of Sutras

Each sutra, according to western logic is a type of syllogism which is a form of mediate deductive inference in which the conclusion is drawn from two premises taken jointly. Such a syllogistic form of *anumana* consists of three terms, viz., [1] *Paksha*, [2] *Sadhya*, and [3] *Linga* (also called *Hetu* or *Sadhana*).

For example, *Brihat Samhita* (54:81) states that knotty *Sami* (*Prosopis speciger*) indicates ground water occurring at a depth of 375 feet. Knots on the trunks and branches are the externally visible, morphophysiological feature of adaptation, formed by high relative humidity consequential to ground water occurrence in dry tracts. In this sutra, *Paksha* is the subject concerned in the inference, i.e., ground water; *Sadhya* is the object i.e., *Sami*, related to *Paksha*; and *Linga* is the mark or indicator characteristic, i.e., knot, which is the basis for relating *Sadhya* to *Paksha*.

Thus in each *sutra*, with reference to each bioindicator, the distance, direction, and depth of occurrence of ground water, together with its quality, quantity, and direction of flow, have been described. Each *sutra* (media axiomata) is an axiomatic aphorism consisting of a real, universal, and self-evident proposition resolvable into some more natural laws of practical importance. All these sutras dealing with several ecological and environmental effects have been arranged in a series with progressively in-

creasing depth of ground water, ranging from 7-1/2 ft. to as much as 560 ft., in arid and semi-arid regions.

'Polysyllogism', a train of syllogistic reasoning, is a combination of two or more syllogisms which are so connected with one another that they ultimately lead to a single conclusion. Thus the series of *sutras* of the ground water ecosystem constitute polysyllogism finally leading to a conclusion that the unseen underground water, as a divine form, conforms to the highest natural law of unity in diversity.

Logic of Scientific Explanation of Ground Water

According to the western logician, Mill, there are three distinct ways in which the scientific explanation of natural laws may take place. These are: [i] Analysis which resolves the law of a joint effect into laws of its causes and the concurrence of those causes; [ii] 'Concatenation' which consists of the discovery of the steps of causation between cause and remote effects; and [iii] 'Subsumption' in which a less general law is brought under a law more general.

All these three forms of logic are involved in the scientific explanation of the ground water ecosystem in Varahamihira's *Brihat Samhita*. It consists of: [i] the analysis of the ground water law as the result of the joint effect caused by the concurrence of hydrologic cycle and the interacting influences of the nine orientation forces and phenomena. [ii] It involves 'Concatenation' as the ecological and environmental indicators are the remote effects of the hydrological cycle operating under the solar and lunar influences, with ground water as the immediate intermediate cause. [iii] Various ecological and environmental effects, as indicators of ground water, lead to the primary or ultimate law of unity in diversity in nature (Subsumption).

Modern science (Health, 1982) also attempted a study of ground water system as in U.S.A. Its comparison with the ground water ecosystem in *Brihat Samhita* reveals the qualitative differences in approach between the modern science and ancient Indian science.

Logic in Brihat Samhita

Brihat Samhita with 100 chapters deals with different ecosystems from microlevel in the terrestrial region to the highest macrolevel of the entire solar system of the universe; and each chapter, as ground water in *dakargalam*, consists of ecological and environmental effects for which the Sun god as procreator is the Supreme Ruler of the

Universe. Each chapter in *Brihat Samhita* is in the form of 'Sorties' which is an abridged train of syllogistic reasoning in which the ultimate conclusion is omitted for self-realization.

II. ANCIENT INSIGHTS AND MODERN DEVELOPMENTS SPIRITUAL IMPORT IN MODERN ECOLOGY

Though modern ecology deals exclusively with the external environment, some of the observations reflect significant spiritual aspects. Dansereau (1957) formulated certain laws of plant ecology; two of them have spiritual import. These are: [a] the Law of Factorial Control which states that although living beings react holistically to all the factors in the environment, there occurs a vital factor which has the controlling power; and [b] the Law of Climax which states that "the processes of succession are not indefinite, for they tend to an equilibrium which is attained through a relay of controls". This equilibrium is what the Hindu philosophy designates as the highest state of *Sattva*, attained through the control of the forces of attraction (*Tamas*) and repulsion (*Rajas*) for living free from bondage (*Jivan-mukta*) as an enlightened or God-realized soul. This is also implied in Villarr's (1929) concept of *Harmony vs. Discrepancy* pointing out that, in a harmonious habitat, there is neither excess nor deficiency of any element.

Similarly Daubenmire (1970, p.338) pointed out that the physical conditions that govern an organism "show a relationship existing between certain atmospheric and certain protoplasmic phenomena, all of which are set in motion by an unmeasured master of forces". Substantiating this, various aspects of human and social interest are discussed in *Jyotissastra*.

PREDICTIONS IN JYOTISSASTRA

Modern ecology states that "man's ability to cope with ecologic problems arising from climatic cycles are not rhythmic hence he can not predict their timing" (Daubenmire, 1972, p.104). Further it has also been pointed out that psychological attributes as motivation and behavior, are not considered in environmental impact analysis "because of the difficulty in relating outside factors to changes in these factors" (Jain et al, 1977, p.292) which are included in the internal environment. But what has been considered as a difficult task in modern science is achieved by *Jyotissastra* through *Raja-yoga* by taking both external and internal environment into consideration for successfully

predicting the ecological and environmental conditions and events (Prasad, 1984, 1986) coupled with Human/Spiritual ecology.

ADAPTATIONS AS UNIVERSAL INDICATORS

[a] The western ecology states (Daubenmire, 1972, p.354): "Man has long been interested in explaining how the adaptations came about, but until recently the interpretations have [been] almost entirely philosophical and not based on a careful analysis of facts". The ancient Indian texts (Prasad, 1984, 1986 b,d) dealt with important aspects of adaptations in plants and animals in true perspective.

[b] Varahamihira's work (Prasad, 1984, 1986 b,d) rationally reveals that the well-defined morphophysiological features of adaptation of the ecological races, consisting of the taxonomically diverse species, are the universal indicators. But the modern texts (Malyuga 1962; Brocks 1963) erroneously classified the taxonomic species as universal and local indicators.

GROUND WATER RESOURCES

Location of Well Sites

Due to adequate rainfall and abundant water sources, location of ground water resources is not a problem of practical importance in the humid west; and hence it has not developed as a science. But in arid and semi-arid regions, particularly in the hard rock areas, location of the well sites for the exploitation of ground water is the most difficult hydrogeological task. In India the well sites are located by either the mystic or magical 'water-divining' methods or the ineffective resistivity survey. Consequently thousands of borewells are indiscriminately drilled without ensuring the availability of ground water resulting in enormous wastage of human and material resources. Varahamihira provided excellent and efficacious methods to successfully tackle this most intricate problem (Prasad, 1986 b,c,d).

World Bank Seminar

Varahamihira dealt with exploration and exploitation of ground water resources applicable to arid and semi-arid regions devoid of surface water sources in the most rational manner. But the World Bank seminar on ground water, held in May 1986 at Washington, D.C., stressed the urgent need for ground water development in the flood-prone river basins of the Ganges, Brahmaputra, and Irrawaddy in the northeastern region of India instead of rationally bestowing attention on the urgent need for the

development of ground water in the *drought-prone* southern and western regions of the country where acute and chronic water scarcity conditions prevail. This seminar, however, revealed that enormous exchequer is wasted due to lack of coordination between the national apex agencies, viz., the Oil and Natural Gas Commission (O.N.G.C.) and the Central Ground Water Board (C.G.W.B.).

WATER SOURCES, INSECT ECOLOGY, AND AGRICULTURE

While dealing with ground water development in the tropics, Varahamihira also stressed the need for developing and protecting the surface water sources for ecologic balance; and pointed out that insects especially are extremely sensitive to desiccation and resort to migration responding to humidity gradients. Modern science (Kennedy, 1927; Allee et al, 1946, p.187) is aware of this aspect of insect ecology but not its applied aspect involved in agriculture and Human Ecology.

An outstanding example in this regard is provided by the current situation in the African continent, which passed through the most severe drought -- the worst in 50 years. To tackle this, borewells were indiscriminately drilled without bothering about the dwindled surface water bodies. The Johnson *Drillers Journal* (1982, vol.55, 3&4, p.19) projected the item "Ground Water, an Answer to South African Drought" and pointed out that the water well drilling contractors in the U.S.A. were enjoying the heaviest work load amassing wealth.

Now the adverse ecological effects are being faced. From Senegal to Ethiopia, new plague developed by billions of locusts, grasshoppers, and other insects devouring the agricultural crops, resulting in enormous damage and destruction as devastating as famine itself; and an estimated expenditure of 19 million dollars is involved during 1986-87 to combat this most serious infestation. In some parts of this continent, it has been found cheaper to bring in food-aid than try to control the adult migratory insects.

ALL WATERS EQUALLY DIVINE

The ancient Indians treated all forms of natural waters, without any distinction as atmospheric, surface, and ground waters, to be of the same divine nature and recited: "The waters which are from the heaven, or those which spring up by themselves, the bright pure waters that tend to the sea, may those divine waters protect me here" (Rig Veda: vii. 49.2).

Bhu-Jal News, a quarterly journal of

the C.G.W.B. (April-June, 1987, vol.2 (2), p.20), projected "Seven Virtues of Ground Water", as suggested by the U.S. National Water Works Association in *Developing World Water*, without considering the problems of ecologic balance and the socioeconomic condition of the developing countries in the tropics (Prasad, 1986 b,c).

Ganga River Cleaning

Considering the River Ganga to be holy, the Government of India has undertaken the project, called Ganga Action Plan, with a total plan outlay of Rs.250 crores for cleaning this river which has been grossly polluted like any other river in the country; it created the Central Ganga Authority which in turn appointed the Thames Water Authority of U.K. for its advisory services with an estimated expenditure of 200,000 Pounds which is provided by the British Govt. as grant-in-aid. In addition to U.K., the foreign offers of assistance for the Ganga cleaning have also been received from the World Bank, U.S.A., France, and the Netherlands.

All waters are holy and divine and all waters need to be cleaned for the benefit of all the people in the country. The total amount, proposed to be spent by India and other foreign countries, can be more profitably spent for cleaning all waters in the country without any superstition that the Ganga River alone is holy and divine.

WATER QUALITY & TREATMENT

Solar and Lunar Treatment

The Ayurvedic texts prescribed that the surface water bodies, exposed to the rays of the sun and the moon (*Amsudakam*), as the sources for drinking and domestic purposes. The ultraviolet radiation in the sunlight kills the bacteria (Salle, 1961). The experiments on solar disinfection, first published in the British medical journal, *The Lancet*, in 1980, carried out subsequently in the Tennessee Technical University, revealed that sunlight provides the low cost method to treat polluted waters (*Futurist*, March-April 1986). The significance of such experiments and their domestic application have been published as a booklet, entitled "Solar Disinfection of Drinking Water and Oral Rehydration Solutions", in English and Arabic by the UNICEF in Amman, Jordan. The medicinal properties of the water, exposed to the moonlight, as suggested in Ayurveda, have yet to be tested by the modern scientists.

Viral Disinfection

In the temperate climates, the water-borne diseases are only bacterial; but in the

tropics, the epidemic and endemic water-borne diseases are caused by viruses, bacteria, protozoa, and parasitic worms. But the modern methods of water treatment do not offer any effective method of viral disinfection.

During the monsoon period, a viral fever called 'brain fever' or Japanese encephalitis, is widely prevalent as a recurring phenomenon particularly in southern India resulting in the severe debilitating effects and deaths of thousands of children. At such times, as a preventive measure, indiscriminate killing of the pigs is resorted to by the municipalities; and the controversy arises between the practitioners of allopathic and homeopathic medicines regarding the efficacy of the treatment each medical system prescribes.

Ayurvedic texts prescribed repeated quenching of drinking water with a red-hot metal (gold, silver, copper or iron) or stone or sand was prescribed for viral disinfection. The virologists may test this method, of course, following the *yuga-dharma*, with appropriate instrumental techniques.

Toxic Metals

Susruta Samhita suggested mosses and twisted roots of lotus or water lilies in water purification. Aquatic plants, such as mosses, water hyacinth, seaweeds, duckweeds (*Lemnaceae*), etc., behave essentially as simple ion-exchangers, and are capable of absorbing and accumulating toxic heavy metals to a spectacular degree. A researcher from the University of New Hampshire in the International Conference on "Innovative Biological Treatment of Toxic Wastewaters" held at Arlington, VA, revealed that the plant *Elodea nuttalli* eliminated copper and zinc in 200 gallons/day domestic waste treatment (*Bio-processing Technology*, July 1986).

Ground Water Purification

Varahamihira suggested a simple biogeochemical method, involving a mixture of *anjanam*, *Musta* (*Cyperus rotundus*) bulbs, *Usira* (*Vetiveria ziznoides*), powder of *Rajakosataka* (*Luffa cylindrica*), and *Amalaka* (*Phyllanthus emblica*), combined with *Kataka* (*Strychnos potatorum*) nuts, to be put into a well. If the well water is turbid, pungent, brackish, and of bad taste and odor, it will become clear, tasty, and aromatic, endowed with other good qualities.

Modern science (Jain et al, 1977, p.202) points out that "when ground water becomes contaminated, water purification is a difficult task".

According to a report of the Swedish

International Press Bureau, released in November 1986, a company, Vyrmetoder AB, near Stockholm, suggested a procedure in which water, enriched with oxygen, is forced down into a well for about 20 hours, once in every fortnight, to facilitate removal of iron and manganese. Such a cumbersome procedure, that too of partial purification, is beyond the scope of practical application under Indian conditions.

Standards of Drinking Water Quality

The World Health Organization (W.H.O.) prescribed the 'International Standards of Drinking Water Quality', in terms of certain hydrochemical and hydrobiological parameters, without sound scientific basis (Prasad, 1986c); and such standards have been blindly imitated by I.C.M.R. (1975), I.S.I. (1983), and Dept. of Rural Development (1986).

The Ayurvedic texts distinguished the quality of rain water of the interior land (*Gangodakam*) from that of the coastal areas (*Samudrodakam*), having marine influence, with a simple test based on osmosis; and prescribed *Gangodakam* as the standard for the drinking water quality in the most rational manner; and suggested the simplest and most effective treatment methods, understandable even to the illiterate rural masses in India, to obtain potable water of the prescribed rainwater quality.

Cohen and Hannah (1971, p.67) stated that "the ancient Sanskrit texts afford the earliest recorded knowledge dating back perhaps to 2000 B.C., and, in addition to heating or boiling and filtration, the other methods of purifying water included the use of a variety of mineral and vegetable substances, principally the seed of *Strychnos potatorum* as an effective coagulant".

MODERN SCIENTISTS ON ANCIENT INDIAN SCIENCE

The ancient scientific Sanskrit works lay buried these many centuries within the confines of mere literary scholarship which had hardly any inkling of the matured scientific knowledge they embody. Hence, the western writers pointed out that the ancient Indian science was not comparable (Anthony, 1957, p.19) but "inferior to that of the West in all respects" (Taylor, 1949, p.54) and that it was borrowed and "debased by the persistence of vedic lore" (Mason, 1957, p.70).

Raja Ramanna (1984), former Chairman of the Atomic Energy Commission, has stated that the sutra method in the ancient texts "constitute an alternative

method of expressing scientific terminology and requires thorough examination because it seems to be simple, more compact than and as accurate as the symbolic method that is currently in use". The significance of the Indian science could not be realized all these centuries of years as the earlier scholars, who provided translations and commentaries, were untrained in science and always gave a philosophical basis to all *slokas* and *sutras*. Raja Ramanna (1976) showed how *Tarka Sangraha*, a 17th century primer of Indian logic by Annambhatta, becomes modern physics if appropriate scientific terminology is used in the translated versions.

While inaugurating the Indo-US Workshop on science broadcasts, jointly organized by the All India Radio (AIR) and the Indo-US Subcommission, in November, 1986 at Bangalore, Dr. H. Narasimhaiah, former Vice-Chancellor of the Bangalore University, has pointed out that 185 world-renowned scientists, including 18 Nobel-laureates, have stated that "those who wish to believe in astrology should realize that there is no scientific foundation for its tenets". Obviously, this is the stupendous superstition of the modern scientists of super-specialities with narrow vision.

III. HUMAN/SPIRITUAL ECOLOGY AND FUTUROLOGY JYOTISSASTRA AND FUTUROLOGY

The Sanskrit *sutras*, evolved through the rationalist philosophy of *Raja-yoga*, are the "synthetic a priori" axioms which constitute the knowledge of the external physical world as experienced by sensory perception. These *sutras* deal with the natural processes and phenomena, such as those of water, which conform to the divine law of unity in diversity; and various ecological and environmental effects or responses, developed by the regulatory control of the natural object, under study, as a divine form, are used as *bioindicators* for exploration and exploitation of the natural resources, maintaining perfect ecological balance and harmony in nature, without any adverse effects. The characteristics of these *bioindicators*, reflecting the divine attributes, are selected to imply the human values ethical principles with a series of norms and standards logically and practically leading to a goal, or an end in both scientific and spiritual worlds. Such *sutras* are built up in a progression for the evolution of man ultimately as a God-realized soul. Sinnot (1955) has also similarly attempted to "elevate biological regulation to the 'Principle of Organization' first

as an attribute of God and finally as God Himself".

HUMAN ECOLOGY IN MODERN WORLD

In the modern world today, over-exploitation of natural resources, in an indiscriminate manner, has led to pollutions and perversions in the advanced affluent countries in the humid west, while under-utilization of the resources has led to poverty, hunger, and disease, with the accompanying social evils, in the developing or under-developed countries in the tropical east. In both cases, the root-cause is the faulty application of applied ecology devoid of human/spiritual ecology. Roger Revelle of Harvard University (*Bulletin of Atomic Scientists*, March 1968, p.19) is deeply concerned and critical about the "irrelevant technology of the west" applied in the poor countries in the tropics by many visiting "experts" with assignments under the technical assistance and developmental aid.

Modern scientists, of late, have realized the paramount importance of ecology for the welfare of the mankind. "Ecology is the science of all the relations of all the organisms to all their environments" (Taylor, 1936). It included "a wide variety of messages to man. These should be interpreted as skilfully as possible if man's future is to be assured" (Jain et al, 1977, p.54); and "It would be a suicidal oversight to let technology become prepayment over ecology" (Wallia, 1970, p.12).

But modern workers (Margenau, 1964), hold the fallacious notion that scientific laws and ethical laws are evolved by distinctly different processes and hence they are unable to bring out any correlation and integration between physical sciences and humanities/social sciences; and it is a misperception of Allport (1959, p.137) that "moral values can not be derived from natural data nor from science".

Bugental (1970, p.291) pointed out that "in the physical sciences the great leaps forward have been made" without any significant progress in the human race which, for its welfare, will be heavily influenced, according to the prediction of Watts (1970), by the Indian philosophy.

FUTUROLOGY OF MODERN INDIA

India gained freedom politically but not from science and technology points of view. Its numerical strength of the scientists occupies the third position in the world. But research in India generally is imitative or repetitive but not innovative; and it is a chief factor for the present misery in the country.

The western commentators have noted that the year 2000, as a millennial year, invites an assessment of the progress that mankind has made and predictions of what the future will be like. In this context Stanford University has carried out during 1968 a futurology project on "Technology and Human Values" towards 21st century. Hence such projects have recently been started in India also. In this connection, it is relevant to recall what Swami Vivekananda stated about a century ago which holds good even now. His quotable quotes are:

"The nation is sinking, the curse of unnumbered millions is on our head -- those to whom we have been giving ditch-water to drink when they have been dying of thirst and while the perennial river of water is flowing past."

"What we want is not so much of spirituality as a little of the bringing of the Advaita into the material world. First bread and then religion. We stuff them too much with religion, when the poor fellows have been starving. No dogmas will satisfy the cravings of hunger."

"You may have thousands of societies, twenty thousand political assemblages, fifty thousand institutions. These will be of no use... It is bread that the suffering millions of burning India cry out for with parched throats."

"Take your universities. What have they done during...their existence? They have not produced one original man. They are merely an examination body."

"We Indians are so weak today, because large numbers of us are trying to build up our edifice of glory on entirely western ideas which have begun to eat into the vitals of our nation. India can never generate strength, nor can the attitude of a beggar elicit respect from the nations of the west."

The fond hope of Swami Vivekananda was to build up material civilization for creating work for the poor to make a European society with Indian philosophy. This can be achieved only through the indigenous science, expounded in Sanskrit, with *sruti-smriti* concept.

These ancient scientific Sanskrit texts consist of the **People's Technology**, involving an innovative, user-oriented mass approach, with appropriate low-cost techniques, understandable to the general public and flexible for modification at local level, for self-help even in the remote rural areas in the poor tropical countries.

IV. CONCLUSION

The U.S. Environmental Policy Act

(NEPA, 1969), emulated by other nations (Munn, 1975), is to "encourage productive and enjoyable harmony between man and his environment". Such a harmony can be rapidly and successfully achieved by science and technology, appropriate to the environment, including the internal spiritual environment as revealed through the ancient insights of *Raja-yoga*.

Modern science involves deterministic reduction of man to the status of a rational animal; and Cassirer (1953) has suggested: "Instead of defining man as an animal rationale, we should define him as an animal symbolicum". But *Raja-yoga*, through perfect scientific induction and deduction, elevates man as a symbol of God, conforming to the ultimate goal of the Indian philosophy: *Tat tvam asi* ("That thou art").

ACKNOWLEDGEMENT

This work has evolved primarily through three research projects, viz., [a] 'Geology of Termite Mounds, sponsored by the University Grants Commission, [b] 'Environmental Geoscience of the Sriharikota Area', by the Indian Space Research Organization (I.S.R.O.), and [c] the Bookwriting Scheme of 'Hydroscience in Ancient Sanskrit Literature', sponsored by the Department of Environment. The author places on record his deep sense of gratitude to these national apex agencies.

Text added to the proof in the press

(a) World Commission on Environment and Development

This commission has been constituted by the U.N. General Assembly in 1983 to re-examine various problems on environment and development and promote international cooperation in these matters. It has held, since 1984, public meetings in the five continents where people emphatically expressed their apprehensions over the dismally degraded environment. Based on these hearings, the report, entitled *Our Common Future*, has suggested that the nations should base their policies of economic growth for sustaining and expanding the environmental resources.

(b) Water Supply

Most parts of the arid and semi-arid regions, which constitute nearly one-third of the total land area of the earth, are acutely and chronically drought-stricken; and the problem of water supply, in both urban and rural areas, has become crucial, enormous in scale, and not being solved by the present strategies, policies and programs.

(c) Futurology & TIFAC

Recently, [1987] the Prime Minister, Mr. Rajiv Gandhi, has exhorted all the publicly-funded organizations to develop perspective plans of futurology, and set up the Technology Information, Forecasting Assessment Council (TIFAC) under the auspices of the Department of Science and Technology. The objective is to carry out research for formulating active, creative, and viable policies and programs related to the future aspirations of the people at all socio-economic levels.

Excellent and efficacious solutions for such complex national and international problems of practical importance of the present and the future can be easily and readily obtained through the intuitive insights in the ancient scientific Sanskrit texts, consisting of the *people's technology*, for all-round progress and prosperity in the East and West.

REFERENCES

- Allee, W.C.; Emerson, A.E.; Park, T.; and Schmidt, K.P. (1949) *Principles of Animal Ecology*. W.B. Saunders Co., Philadelphia and London.
- Allport, G. (1959) Normative compatibility in the light of social science; In: *New Knowledge in Human Values*; (ed: Abraham Marlow) Harper & Row Publishers, New York.
- Anthony, H.D. (1956) *Science and Its Background*. MacMillan & Co., London.
- Bonner, J.T. (1955) *Cells and Societies*. Princeton Univ. Press, New Jersey.
- Brooks, R.R. (1983) *Biological Methods of Prospecting for Minerals*. John Wiley & Sons, New York.
- Bugental, J.F.T. (1970) Changes in inner human experience and the future; In: *Toward Century 21*; (ed: C.S. Wallia), Basic Books Inc., Publ., New York/London.
- Cassirer, E. (1953) *The Philosophy of Symbolic Forms*. Yale Univ. Press, New Haven.
- Clarke, G.L. (1954) *Elements of Ecology*. John Wiley & Sons, Inc., New York.
- Cohen, J.M. and Hannah, S.A. (1971) Coagulation and flocculation, pp.66-122. In: *Water Quality and Treatment*, McGraw Hill Book Co.
- Daubenmire, R.F. (1970) *Plants and Environment*. Wiley Eastern Ltd., New Delhi.
- Denseureau, P. (1957) *Biogeography*. The Ronald Press Co., New York.
- Dept. of Rural Development (1986) *Technology Mission on Drinking Water in Villages and Related Water Management*. Project Document. Ministry of Agriculture, Govt. of India, New Delhi.
- Heath, R.C. (1982) Classification of Ground Water Systems of the United States. *Ground*

- Water, 20 (4): 393-401.
- Hopkins, E.W. (1915) *Epic Mythology*. M/s. Verlag von Karl J. Trabner, Strassburg.
- I.C.M.R. (1975) *Manual of Standards of Quality for Drinking Water Supplies*. Indian Council of Medical Research, Special Report Series No. 44; New Delhi.
- I.S.I. (1983) *Indian Standard Specification for Drinking Water*, Indian Standards Institution, IS: 10500-1983.
- Jain, R.K.; Urban, L.V.; and Stacey, G.S. (1977) *Environmental Impact Analysis*. Van Nostrand Reinhold Co., New York, London, and Toronto.
- Kennedy, C.H. (1927) Some non-nervous factors that condition sensitivity of insects to moisture, light, and odors. *Ann. Ent. Soc. Amer.*, 20: 87-106.
- Kern, H. (1870-74) Brihat Samhita (English Translation). *J. Royal Asiatic Soc. London*.
- Kovalevskii, A.L. (1979) *Biogeochemical Exploration for Mineral Deposits*. Oxonian Press Pvt. Ltd., New Delhi and Calcutta.
- Malyuga, D.P. (1964) *Biogeochemical Methods of Prospecting*. Consultants Bureau, New York.
- Margenau, H. (1964) *Science and Ethics*. D. Van Nostrand Co. Inc., Princeton.
- Mason, S.F. (1956) *Main Currents of Scientific Thought*. Abelard-Schuman, New York.
- Munn, R.E. (1975) *Environmental Impact Assessment: Principles and Procedures*; United Nations, SCOPE, Secretariat, 551, Boulevard de Montmorency 75016 Paris, France (Report 5, Toronto, Canada).
- NEPA. (1969) National Environmental Policy Act. PL 91-190; 83 stat. 852; USA.
- Prasad, E.A.V. (1980a) *Ground Water in Varahamihira's Brihat Samhita*. Sri Venkateswara University, Tirupati.
- Prasad, E.A.V. (1980b) External features of vegetation as hydrologic indicators in Varahamihira's Brihat Samhita. *J. Indian Inst. Sci.* 62 (B): 123-144.
- Prasad, E.A.V. (1980c) Termite mound in Varahamihira's Brihat Samhita. pp. 61-66. In: *Management of Environment* (ed: B. Patel). Bhabha Atomic Research Centre, Bombay.
- Prasad, E.A.V. (1984) Varahamihira technology for the tropics, In: *Souvenir, Int. Natl. Seminar: Geobotany and Biogeochemistry in Exploration for Ground Water and Mineral Resources*. Sri Venkateswara Univ., Tirupati.
- Prasad, E.A.V. (1985) Bioindicators for Nonbiotic Natural Resources in Varahamihira's Brihat Samhita; pp. 205-206. In: *Biological Monitoring of the State of the Environment (Bioindicators)*. Indian National Science Academy, New Delhi.
- Prasad, E.A.V. (1986a) *Water Quality in Ayurveda*. Tech. Report., Dept. of Environment, New Delhi.
- Prasad, E.A.V. (1986b) Bioindicators of ground water in Varahamihira's Brihat Samhita. *Ground Water* 24 (6): 824-828., (*Groundwater News*, Jan-Feb. 1986).
- Prasad, E.A.V. (1986c) Hydrosience in Ancient Sanskrit: Its Relevance in Modern context, *Aquaworld*, December pp. 195-198.
- Prasad, E.A.V. (1986d) Plant indicators. *Indian Rev. Life Sci.* 6: 253-271.
- Raja Ramanna, (1976) *Dilip*, 3 (3): 31, quoted in Raja Ramanna (1984).
- Raja Ramanna, (1984) Sanskrit and science. pp. 1-16; In: *Sciences and the Vedas*. So-maiya Pub. Pvt. Ltd., Bombay.
- Salle, A.J. (1961) *Fundamental Principles of Bacteriology*. McGraw Hill Book Co., N.Y.
- Sinnot, E. (1955) *The Biology of the Spirit*. The Viking Press, Inc., New York.
- Taylor, F.S. (1949) *A Short History of Science and Scientific Thought*. W.E. Norton & Co. Inc., New York.
- Taylor, W.P. (1936) What is ecology and what good is it? *Ecology*, 11: 333.
- Villar, E. Huguet del (1929) *Geobotanica*. Editorial Labor. Barcelona-Buenos Aires.
- Wallia, C.S. (1970) Science, technology and human values. In: *Toward Century 21*: (ed: C.S. Wallia). Basic Books Inc., Publ., New York/London.
- Watts, A. (1970) The future of religion. In: *Toward Century 21*: (ed: C.S. Wallia). Basic Books Inc., Publ., New York/London
- W.H.O. (1971) *International Standards for Drinking Water*. World Health Organization, Geneva.



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SOME CONSIDERATIONS CONCERNING ANTI-GRAVITY AND RELATED MATTERS

by Joel A. Wendt

from *Projective Geometry: Creative Polarities in Space and Time*

by Olive Whicher

"GRAVITATIONAL AND ANTI-GRAVITATIONAL FORCES"

The study of this negative Euclidean type of Space, with the planar movements involved in its forms and transformations, gave... access to a theory of the anti-gravitational forces, of which Rudolf Steiner always spoke... If the physical forces are measured according to the thought-forms of point-centres, areas and volumes, the ethereal forces must be described according to their own nature... In describing the opposite types of force in the two types of space, Rudolf Steiner used the expressions "Schwere" and "Leichte"... We have our English words "weight" and "lightness" or "gravity" and "levity"... It must be understood that "lightness", in the way we use it here, does not merely mean the absence of weight; it qualifies a force. The shot from a gun may have the quality of lightness in contrast to a heavy cannon-ball; but both are in the same physical space and obey the physical laws -- both centrifugally and centripetally.

The ethereal forces also operate in these two directions, but with an entirely different effect; they are linked to phenomena for which the word "plane" gives a truer picture, in contrast to "point". The ethereal planes hover inward and outward. For want of a better word, Rudolf Steiner often used the word "suction" to describe the activity of the ethereal type of force. The ethereal planar forces have a moulding, formative power, and at the same time they draw or suck the substances which have come under the sphere of their influence away from earth gravity. The levitational force is polar in all respects to the force of gravity."

Since beginning to read science fiction in my early 'teens, I have dreamed frequently of actually building some kind of machine which would enable me to overcome my earthbound nature and permit the travel to strange worlds and the meeting of unusual beings. The fascination with this literature seemed to follow the loss of a peculiar experience, which I had had regularly as I was dropping off to sleep. Just for a moment, before the entry in unconsciousness, there

would be this experience of a reorientation in space, such that all the normal relations were reversed. This was not merely a visual experience, as my eyes were closed, but involved all of my senses, including my feeling of weight.

The Moody Blues, a rock group which came into existence in England in the 1960's, has clearly had some spiritual experiences of one kind or another. There is no other way to interpret their work. On their album In Search of the Lost Chord the first song is entitled Voices in the Sky, and is followed by The Best Way to Travel, whose opening lyrics are: "And you can fly high as a kite if you want to / faster then light if you want to / speeding through the universe / thinking is the only way to travel..."

"But thought is actually ethereal in origin -- it is of the light; and it must awaken in its own primal element..." (Olive Whicher, *ibid*)

With my dream, and the dream of countless others as evidenced by the popularity of science fiction, the main idea is that somehow or another, we utilize the anti-gravity forces, when discovered, to cause spatially extant bodies to move free of the gravity well of the surface of planets. What if this is unnecessary? What if travel to strange and alien places does not require the movement of physical bodies, but is to be found through another doorway. Have The Moody Blues tried to tell us something? Is the ethereal realm truly, as Olive Whicher says it is, the "primal element" of thinking? Is thinking "the only way to travel"?

Consider this possibility. Man is a being of soul and spirit, living in a time when the direct knowledge of this is not only hard to come by, but which is dominated by a way of thinking which denies even the possibility of such realities. Nevertheless Man's unconsciousness remembers its spiritual origins, and yearns to return to this realm. We dream of flying. We buy books by the millions which take us to far places of the imagination; worlds of

magic and sorcery, of alien creatures and faster than light spaceships, of times past, of times future and of times never been or ever to be.

In fact the boundary between science and fiction is increasingly blurred; just consider the works of Carlos Castaneda and Lynn Andrews. Here are works which pass themselves off as a kind of participatory cultural anthropology. The authors not only study modern shamanistic practices, they engage in them as well. The public's appetite for such works seems insatiable.

In the circles of followers of Rudolf Steiner, one will hear the following idea. Mankind, in mass, consciously and unconsciously, is crossing the threshold between the material and the immaterial worlds. Here lies the "explanation" for the phenomena of UFO's; which are said, in these circles, to be materialistic interpretations of supra-sensible experiences. This crossing for many, due in part to karma and secondarily to moral choices made in the present, will take a course in which the soul, rather than develop further, will in fact fall back, into older and now decadent spiritual ways. So will say many anthroposophists, and certainly it was in this way spoken of by Dr. Steiner.

I have taken this approach to the question of "anti-gravity" because I felt it would be helpful to appreciate that the process of understanding such a force would involve certain subtleties, and temptations. We need to recognize that our attempts to appreciate the nature of the ethereal or anti-gravity 'force' will be made difficult by several tendencies already existing in the soul. One will be the tendency toward spiritual materialism, the tendency to think and imagine these facts and ideas using the habits ingrained in us by our education and culture.

Another tendency in the soul will involve a kind of spiritual laziness, what Steiner called the phlegmatic nature of soul life today. It is very difficult to move the soul, to bring about real inner transformation of the soul life (not just acquiring new ideas). Yet, the hunger of the soul for contact with its unconsciously remembered spiritual life, leads it to accept intercourse with spirit guides, to serve as a channel, to try to reanimate all kinds and types of spiritual ways out of the past, out of the time when the soul life was essentially different then it is today. This turning away from the difficulties of the present and the future and toward the past of the soul life was called by Steiner, atavism.

The question can be fairly put: will the soul under the influence of either or both,

spiritual materialism and atavism, find its way to the truth? Will we come to a true knowledge and understanding of the ethereal or anti-gravity force(s) by methods which rely on habits of thought trained in the materialistic education of the time, or by methods which accept as valid, encounters with the spiritual world that use faculties of the soul no longer appropriate and occasionally dangerous.

The real question comes down to what do we want, and what price are we willing to pay to achieve that goal.

Now some may think that these atavistic soul capacities are not occasionally dangerous, besides their being inappropriate to the soul's potential development in our time. Let's take a closer look at just one of these soul faculties, channeling.

Channeling, what was earlier called mediumship, was not unknown to the spiritual savants of the middle ages. The object of such an act is to open a 'doorway' for the entrance into this world of a discarnate being. It was this object, in fact, which was the central purpose of ceremonial magic. We wonder today about this ritual magic, and most of the civilized world disbelieves it entirely. Regardless of that, within the teachings of these disciplines one will come upon the idea that one of the main purposes of the ritual, of instruments and incantations, was to serve to control and set limits on the activity of the sought after discarnate being. In the same literature (c.f. The Practice of Ceremonial Evocation, Franz Bardon) one will find that the very worst thing that can happen is if the operator were to lose consciousness and become possessed by the discarnate being.

Yet, just this is considered the height of the channeler's art, to lose consciousness and allow the being to use the operator's body.

Rudolf Steiner has pointed to Goethe's Faust as the archetypal artistic representation of the soul's path of temptation, fall and redemption, at least in the context of our time. Faust is alone when the tempter, Mephistopheles, comes to him, first as a bodiless voice promising knowledge, power and riches. This is a mirror image of a primal temptation (one of three) offered Christ Jesus during the forty days in the desert, following the Baptism at the Jordan.

If you read the description of many channeler's first encounter with their "entity", you will find just such a dramatic scene. The channeler is alone, and the voice comes and offers the arrangement, including

the payoff, the image of wealth and importance.

Not all channeling has this characteristic. Even among channelers there is spoken of degrees of consciousness, not always pure unconsciousness. It is not my intention to denigrate a whole class of spiritual experience. The main problem with these 'new age' faculties, these essentially atavistic -- old soul -- capacities, is their fruit. There is a direct correlation between the method and the ends. The knowledge we gain about the ethereal, anti-gravity forces will be affected by the means we use when we seek it.

"Enter by the narrow gate. The gate is wide that leads to perdition, there is plenty of room on the road, and many go that way; but the gate that leads to life is small and the road is narrow, and those who find it are few." (Matthew 7:13)

"Beginning... (in the present)... definite forces will become prominent in the evolution of humanity... such forces, which will transform life on earth... known in secret centers... British secret societies... by means of certain capacities that are still latent but evolving in man, and with the help of the law of harmonious oscillations, machines and mechanical constructions and other things can be set in motion... Motors can be set in motion, into activity, by an insignificant human influence through a knowledge of the corresponding curve of oscillation. By means of this principle it will be possible to substitute merely mechanical forces for human forces in many things. Mechanical occultism will not only render it possible to do without nine-tenths of the labor still performed at present by human hands, but will give the possibility also of paralyzing every uprising attempted by the then dissatisfied masses of humanity." (Rudolf Steiner, The Challenge of the Times, lecture III given December 1, 1918)

My own view is to give as much trust as possible toward my fellow human beings; to deny them no knowledge for which they seek (as opposed to 'secret' societies whose very lifeblood is to withhold and otherwise control knowledge). The capacities mentioned above by Rudolf Steiner for knowledge of "mechanical occultism" are especially inherent in the soul life of English speaking peoples, particularly Americans. My recent discovery of the work which finds its voice in the Journal of Borderland Sciences has led me to the conclusion that the Journal is the organ for the birth of these capacities in America, the organ for the coming to consciousness and birth of these capacities in a

free way.

The fascination with free energy, radionics, ethereal forces, orgone energy and so forth, coupled with the impulse to experiment, that is the impulse to work directly in the practical element, without much thought given to the theoretical side, this is a very healthy and typically American approach, which I have no doubt can lead to genuine knowledge of these matters. As I expressed in the essay, "There Is No Free Energy" (Sept-Oct 1990 JBR), the whole thing comes down to a moral problem, both as regards method of investigation, and the goal and/or use of the knowledge thereby gained.

Now this moral dimension has little to do with some kind of authority telling us what is right, and everything to do with us assuming to act in a responsible matter. In this, we as individuals become creators of the future, determiners of the future's moral characteristics. The responsibility we freely choose in the expression of our search for knowledge and its resultant applications 'stamps' the future with its character and qualities.

"...an act is not, as young men think, like a rock that one picks up and throws, and it hits or misses, then that's the end of it. When the rock is lifted, the earth is lighter; the hand that bears it heavier. When it is thrown, the circuits of the stars respond, and where it strikes or falls the universe is changed. On every act the balance of the whole depends... [and]... we, insofar as we have power over the world and over one another, we must learn to do what the leaf and the whale and the wind do of their own nature. We must learn to keep the balance. Having intelligence, we must not act in ignorance. Having choice, we must not act without responsibility... do nothing because it is righteous or praiseworthy or noble to do so; do nothing because it seems good to do so; do only that which you must do and which you cannot do in any other way." (Sparrowhawk, Archmage, to Arren, future King of Earthsea, from the book The Farthest Shore by Ursula K. LeGuin, Bantam Books, 1973)

In the aid of the desire of readers of the Journal for knowledge of the ethereal mysteries I can offer little in a practical vein as I am no experimenter and have no technical knowledge. What little I do know concerns method, which I have learned in practice and applied to other goals. This concerns the how of knowing, which I have come over time to appreciate as Sacramental Thinking. About this I will write next...

MAGNETIC ENERGY TAUGHT ME NEW BASIC CONCEPTS

Part IV: MEDIUMS OF EXCHANGE OF ENERGY

Larry Spring

I am sure I have gone this route before, but come along with me, as there may be new things to see along the way.

RADIATED MAGNETIC ENERGY moving at close to the speed of light across a conductor moves electrical fields, along with their associated electrons and protons, out of the way, sideways along the conducting path. This is an exchange of energy. Radiated energy is massless and therefore does not acquire momentum, yet, when moving, it moves electrons.

PROTONS AND ELECTRONS passing through a radiated magnetic field, a permanent magnet field or an electromagnetic field are driven sideways. A varying electromagnetic field is used to cause electrons to scan the whole face of your television picture tube thirty times a second. Which way they move sideways depends on the orientation of the magnetic field. Positive protons move one way while negative electrons move the opposite way. Protons are 1840 times as heavy as electrons so, when moving at high speed, have a great deal of straight line momentum and deviate only slightly from that straight line of flight. Electrons being very light move readily sideways.

ELECTRONS CAN BE DRIVEN along a conductor by a radiated magnetic field moving at high speed across the metallic conductor. A permanent magnet with its magnetic field, when moving at high speed, will also move electrons in a conductor when that conductor cuts the permanent magnet's magnetic field lines of force.

Conversely, when an electrical current moves along a conductor, magnetic fields are driven perpendicular to and in all directions radially around the electron and resulting electrical current path.

SO SPEEDING MAGNETIC FIELDS can drive electrons and resulting electrical current sideways, while speeding electrical currents along a conductor can drive magnetic fields sideways, and on a return trip, forming a reverse magnetic field inside the previous field, cause radiation. The speeding magnetic fields and speeding electrons and electrical field are the medium of exchange. Electrons are exceedingly light mass and only move a short distance; so consume only a small amount

of energy to move them that very short distance. The effect of the electron movement, a sort of weightless relay effect, moves along the conductor from atom to atom at close to the speed of light of 186,000 miles per second. This is the electrical current which progresses from electron to electron without physically bumping, as like charged particles have a surrounding electrical field which repels another like charged electrical field. Only the electrical fields bump or repel each other and transfer energy in a forward direction. The progress of this electrical field bumping takes place at about the speed of light.

THE RADIATED MAGNETIC FIELD does not require a space of its own. Magnetism can pass through anything like gravity does. The protons and electrons are probably an exception to the aforementioned "anything" and therefore move sideways out of the way of the magnetic field's component parts, tentatively described as lines of force. Radiated magnetic fields pass between nucleus and electrons driving them sideways in rapid alternating movement causing atom expansion.

NOW AN ATOM OR MOLECULE, no matter how much it is expanded by heat excited electron movement, does require a space of its own, like two automobiles which crash if you try to put them in the same space at the same time.

SOUND TRAVELING at 1100 feet a second actually uses molecules as its medium of exchange, by bumping, like billiard balls on a pool table. The molecules travel only a short distance and rebound from the molecules it bumped into causing a compression and rarefaction of the molecules in the medium through which the sound is traveling. This molecular action, bumping a diaphragm of a microphone or the human eardrum, transfers its vibrations so can be heard. Molecules and atoms are the medium of exchange for sound.

THE DRIVEN BALL'S MOMENTUM against the balls on the pool table transfers its energy from one ball to the next. The whole billiard ball is the medium of exchange. The ball is a large spherical group of atoms.

CONFINED IN A SMOOTH METAL TUBE just large enough to accommodate the

1/2 wavelength diameter spheres of magnetic energy, electromagnetic energy can be conducted long distances with minimum loss. In its original frequency microwave magnetic energy cannot pass through polished metal walls.

CONFINED IN A METAL CONDUCTING WIRE from which the electrons cannot normally escape, the electrons can cause the electrical current to be conducted long distances without much loss. The effect of the electrical fields surrounding the moving electrons can be observed a short distance outside the wire conductor in which the electrons are moving.

SOUND CAN ALSO BE CONDUCTED through a tube of any material that will rigidly confine molecules. This sound will spread as soon as it escapes its confinement like at the end of the tube. PVC pipe will not confine magnetic fields but works good for sound.

BILLIARD BALLS can pass through a tube large enough to accommodate them. The force of inertia or momentum is directed in one line as long as there is only one line of balls confined in the right sized tube.

THE BROADCAST WEIGHTLESS MAGNETIC SPHERES OF ENERGY varying in size in proportion to the frequency, the spherical shaped protons and electrons enveloped in their spherical electrical fields which propagate the electrical current, the spherical atoms and molecules which propagate sound and the spherical billiard ball, a group of atoms and molecules, which convey momentum all are mediums of exchange of energy.

MASS OF ANY TYPE IN MOTION CONVEYS ENERGY. Air in motion turns windmills and move sailboats. Water in motion turns turbines coupled to generators to convert that physical energy to electrical energy. Electrical energy can be converted back to physical energy by the electric motor.

MAGNETIC ENERGY (HEAT) can expand gas atoms causing pressure on a cylinder, piston and connecting rod to drive a heat engine into rotary motion which can be used for many purposes like automobiles, airplanes, steam engines and turn generators to produce electricity.

GRAVITY acting mainly on the proton and neutron nucleus of an atom can accelerate a falling quantity of matter by 32 feet per second per second. The accumulation of this momentum can convey a large amount of energy to the point of impact.

SO WE SEE energy comes in different forms and are all used to move mass by various medium of exchange.

Larry Spring, 225 Redwood Avenue
Fort Bragg, California, 95437

THE SPIRAL COIL MULTI-WAVE OSCILLATOR

Louis A. Schad

DISCLAIMER

Let me make it perfectly clear, I present this information for information and research purposes only and I make no suggestions or recommendations as to its use for healing or medical purposes whatsoever. If you are sick see your doctor. I present to you only what I have learned in my research and observations. I am not a medical doctor and the information I give should be used for education and research only.

To preface this, I have been interested in and studied and collected articles on the unusual sciences for over 30 years and have built many unusual devices. My attention was directed to the Lakhovsky M.W.O. by an article given to me by a friend. I read it several times and studied it and then put it away, (punched holes in it and put it in a notebook). I don't know why -- I can't tell you -- but I couldn't get it out of my mind, so I got it out again and read it some more -- this time going through it sentence by sentence digesting it -- now I was hooked!

I tried to gather all the information I could on the M.W.O., and as usual it wasn't easy -- I had to dig. Bottom line, I started to build Bob Beck's high power multi-wave oscillator -- I still haven't finished it, but I will. The more I studied the M.W.O. (being an average person -- not an electrical engineer, but a mechanical engineer) it seemed to me, complicated, difficult, and had to be adjusted for each person and circumstance. Looking at it now I see that isn't all true -- it was me. Back to square one -- I search for some way simpler, and out of it came the spiral coil M.W.O.

I am a recent member of Borderland Sciences and I have read many fine articles published in this Journal. Many of the articles are very high-tech and delve

into the how, where, when and why, and that is how it should be if one is to research. Questions have to be asked and answers have to be found. I am not a professional writer and it isn't one of my greatest talents, so I ask that you have patience with me and I will do my best to tell you about my spiral coil M.W.O.

When I was trying to develop this spiral coil M.W.O. all I wanted was results and I didn't really care how or why it worked, my goal was results, and in doing so I tried many things that I wouldn't have normally tried had I planned each step and tried to fight my way through with pure brain power. In retrospect, I can see that I approached this project with a more light hearted attitude and I have enjoyed developing and building this M.W.O. But at times I did have problems to work out.

I experimented by winding coils, and coils, and coils. I got to be the electric supply house's best copper wire customer, or at least it seemed that way. After boxes and boxes of copper coils, I was ready to throw in the towel and give up -- but having the handicap of being stubborn like I am, I decided to wind one more coil, so I went out to the garage and wouldn't you know it, no more wire. I looked around and all I could find was some old solid strand 16 gauge house wire. It was too light and flimsy for what I wanted, so in desperation I decided to take 2 pieces and twist them together to make 1 heavy piece of wire. Well -- bingo -- I made a coil and got a tingle, that did it. After winding more coils and more coils and experimenting I got to where I am now, so I present to you the Spiral Coil Multi-Wave-Oscillator.

Warning -- this unit is deceiving (it just sits there and looks innocent like it couldn't do much), in fact some of my friends upon first seeing it have laughed at

it, and commented you have to be kidding. Another friend of mine asked me to help him build one -- which I did -- and he was lying on his bed in his shorts with a sheet over him and had the unit about 2 foot above the bed and he fell asleep for about 3 hours (he had an infection from a wound in his leg). When he woke up he had a white blister on him about the size of a nickel -- he has done this twice. I warn you, use it with care, it is more powerful than it seems. I think he percolated the infection up out of his leg, as he is fine now.

Now, I know someone is going to say -- I made mine from an old coat hanger and hung it off the coiling with a piece of string, and I'll say -- gee that's nice, do what you wish -- but if you want it to work and work properly build it as it is, use it, experiment with it, and then change it as you wish.

Warning -- persons who have or are diabetic should not use this unit, as it may change the blood sugar level in some people. Diabetes is one of the few things that a M.W.O. will not correct or help. Lakhovsky states this in his book **THE SECRET OF LIFE**. I think I know why but I won't get into it now.

NOTE -- The spiral coils of this unit work all the time -- that is -- they never stop -- they work with or without the vibrator. Who said there is no free energy? If you put it over a bed with an electric blanket, it will charge the blanket and you will probably have difficulty sleeping. If you do not swing it far enough away from the bed at night it will cause unusual dreaming.

As near as I can tell this coil broadcasts at about 120° angle, although its peak energy is centered straight down from the small coil.

Question: is it patented or am I going to patent it? Answer: NO -- as far as I'm concerned it's free to everybody and that's as it should be.

The advantage of using a spiral is that one should get all the frequencies up to the maximum diameter of the outer diameter (O.D.) of the spiral. If you draw a spiral on a paper and place one point of a compass at the center, you can choose any diameter you wish up to the coil O.D. diameter and the scribing diameter will

fall some place on the spiral.

This unit can be operated in 6 modes:

1. The coil only.
2. The coil plus the vibrator.
3. The coil plus the vibrator plus the coil shocker.
4. The coil plus the vibrator plus constant coil charge.
5. The coil (no vibrator) plus the coil shocker.
6. The coil (no vibrator) plus the constant coil charge.

So as one can see there is plenty to experiment with here.

NOTE -- I also tried connecting a ion generator to mine -- that really blows me away -- try it if you have one.

If you are experimenting with magnets -- be careful if you use them with this unit as some people get bad reactions. I personally have used magnetic water and this M.W.O. and have had no bad reactions.

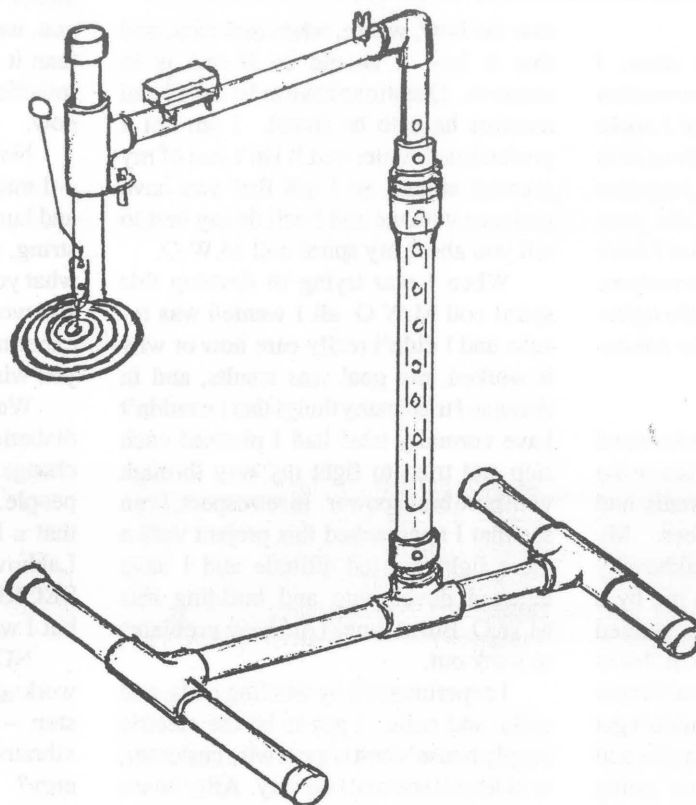
Warning -- although I have -- I suggest you do not use this on the head or above the neck.

Warning -- if you have a heart problem do not use this unit as in some people it tends to reduce blood pressure and lower the pulse or heart rate.

Well -- now that I've scared the hell out of you, if you still want to build it I'll tell you the good side. In most all people who have used it or tried it they get a tingle or a feeling of heat (light). Most people get a boost of energy when they use it and it seems to help circulation. I am not sure why. I don't know if it tends to dilate the blood vessels or not. One man that used it can now wiggle his toes and he hadn't been able to do that for about 3 to 4 years.

I know someone will ask what type or kind and amount of energy is emitted by these coils and the answer is I do not know, but I do know that it works. I will leave that to someone who has the proper

instruments and the know how to check it, so there is still a lot of work to be done here if someone wishes to do it. Now, before someone starts climbing my ladder, let me say that I give the credit to Lakhovsky -- what I did was to modify, update and expand upon the base of some of his work. You do not have to be gifted in the knowl-



SPIRAL COIL MULTIPLE WAVE OSCILLATOR

edge of the sciences to build this M.W.O. and do not need special equipment or tools. However, there are little tricks that I have learned that make it easier to build that I will give in another article. The body or base of this unit is made of P.V.C. pipe, also the vertical and swing arm, the vibrator base and also the drop tube that hangs the coils. We want a unit that is low in cost, tough and durable, light in weight, corrosion resistant, portable, easy to fabricate (and repair if necessary) and looks nice, so we will build our unit out of P.V.C. pipe.

ALL COILS ON THIS M.W.O. MUST BE RIGHT HAND COILS, IN

RELATION TO THE UNIT AND EACH OTHER. If they are not you will get negative energy. (I'm not speaking of polarity here.)

I use a fish tank air pump (modified) -- (Challenger 1) about \$8.50. This provides the oscillatory motion to the coils. I'm not in love with it and would like to find something better -- something of higher frequency, but it works. If anyone has any suggestions on this I would like to hear from them.

I chose to design the unit so it can access any part of the body freely without a lot of excess adjustments. The body when lying down is in one plane or height (approximately), so I built the unit so it would extend over a bed or table, added a swing arm, and a vertical adjustment (holes in the vertical tube arm and a wood dowel or pin stop) -- that seemed simple enough, remember we're trying not to get complicated here.

If you are going to build this M.W.O. I strongly suggest that you read Lakhovsky's book, *THE SECRET OF LIFE*. When I finally decided to try to build an alternative type of M.W.O., I read everything I could get my

hands on about the subject. I read carefully and took notes of key points, functions etc., then I put my books away and studied my notes -- the basics.

M.W.O. -- MULTI-WAVE OSCILLATOR

MULTI -- meaning more than one or many.

WAVE -- energy (given off)

OSCILLATOR -- I looked this up in Webster's -- and simply stated it says -- motion deflected from center to one side -- back to center -- deflected to the opposite side -- back to center, OR -- Vibration.

Now, Lakhovsky in his book stated he made an oscillator of 1 loop or coil of wire

of a given diameter that overlapped. Also, I have read that it isn't the intensity or power of the unit that is desired, but the quality of the signal and also the number of frequencies, signals or waves, as the power can be offset by a longer exposure time. It seemed obvious that a spiral should produce all or most of the waves or signals desired and that it would be better than one loop with a limited signal effect. If Lakhovsky could cure cancer in plants and people with one loop it is logical that a spiral should be even better. OSCILLATION -- how about inducing it artificially -- vibrate or agitate the coil or coils.

This unit produces it's peak energy at 12 o'clock at night, but it can be used during the daylight hours too; it's energy diminishes some toward mid-day. Lakhovsky stated this and he is right. I've got to give it to him, he did his homework. Exposure rates or time of treatment with an electronic double screen M.W.O. is said to be 10 to 15 minutes every 3 to 4 days. Exposure time for a spiral coil M.W.O. (rule of thumb) is about 20 to 25 minutes or 45 minutes maximum per day, or less, depending on what is treated.

Lakhovsky also stated that he treated plants, animals and people with belts, collars, bracelets etc., consisting of a single loop of copper wire. From what I can gather, if a subject was wearing a Lakhovsky coil they never took it off.

My spiral coil M.W.O. is half and half -- part 1 loop + of wire, and part electronic. If a subject got 1 exposure every 3 to 4 days with a conventional M.W.O., it means that the subject's system was hit hard or shocked, and it needs time to adjust. A spiral coil M.W.O. requires a longer or more often exposure and this can be an advantage as it gives us more control of the research subject's requirements. The negative side is that the subject has to spend more time more often.

There is one unusual thing that I and others have experienced with this unit. When you first use it the sensation of heat or tingling is light and you require longer exposure time, like about 25 minutes before you feel that you have had enough. After you use it for about 1 to 2 weeks you will find that after 10 to 15 minutes you feel that you have had enough. Simply stated Lakhovsky said that a M.W.O.

activates or excites the cells. It's kind of like pushing a car, it takes a lot of energy to get it started, but once it's rolling it's easier to push. Maybe the body just becomes more sensitized to the energy after the M.W.O. is used for a while. In Lakhovsky's THE SECRET OF LIFE on page 75, "The circuit is subjected to any kind of electric or magnetic shock it is then said that it vibrates according to its natural period." So, now what do we have?

1. A spiral coil (Providing Multiple Frequencies)
2. Vibrator (artificial oscillation).
3. Electric current (D.C.) (shock to the coil) provided by a small transformer limited by bulbs turned on and off by a Christmas light blinker or winker.

Now I said previously that most of the unit is made of P.V.C. schedule 40 pipe (white). P.V.C. pipe being what it is has the tendency to sag if placed in a horizontal position, fastened at one end with weight suspended at the other end. We can correct this by inserting a piece of 1 inch diameter .050 aluminum tubing inside the P.V.C. and gluing it with an adhesive or simply by drilling a 1/8 inch hole through both pieces and inserting a #8 sheet metal screw. Remember also I said there were little tricks you can use to build it as given above, so before you get too anxious to build, wait till I can write the HOW TO BUILD article, it may make your job easier and you will not have to change or rebuild the second time. I am trying to save some of you all the mistakes I made.

The heart of this M.W.O. is the large main spiral coil. This coil is in simple terms an antenna. It is a dual antenna, that is, 2 in 1 as it is a receiving antenna and also a broadcasting antenna. The antenna can be shaped in many forms and still retain the right hand spiral. Do we wind it tight toward the center and increase the spacing as we go out? This configuration I have found best, but other configurations can be formed to achieve different effects. I have experimented with different shapes and some have given unusual results. There is still a lot of work that could be done here also. I wound a 3 wire coil that was very effective but I had problems twisting the copper wire and

lost several of them. I would suggest that the first coil you make be a 2 wire twist coil. If you want to build the M.W.O. complete you will have a total of 4 coils.

- 1 large main spiral coil.
- 1 small spiral coil (that is mounted under the large coil).
- 2 straight tube coils.

We use these coils because they all have independent functions. We are going to squeeze it and milk it for all we can, to get everything we can out of it. The main spiral coil produces most of the waves or energy, however, due to its design and nature the inside of the spiral cannot be wound tight to create small loops in the coil, so we will add another smaller spiral coil under the large main-spiral, this will give us the higher waves or frequencies we desire. We drill 2 small holes in the main spiral and tight wind a piece of 19 gauge coated coil wire around the twisted copper wire, and pull the wire up through the holes, leaving 2 standing 19 gauge wires. We sand the ends of these and fasten spring clips that hold the tube coils. The other end of the tube coil wire is connected to a banana plug -- into a receptacle, we connect our coil shock to these.

I know there are some of you out there who are like I am, (impatient) and are curious and would like to try this to see if this guy is telling the truth or if he is just full of it. I am aware that the Journal is published every 2 months and maybe some of you don't want to wait 2 months, so for those of you who are like I am -- let me tell you how to build the main spiral coil. This one coil in and of itself won't knock you over -- but you can get started, and you can play with it until I can write the HOW TO BUILD article. This coil will emit energy by itself if suspended horizontally. Fasten it to something, a piece of plastic tube or wood dowel etc. Try it on your feet as the feet seem to be sensitive to these energies. Well -- here we go.

HOW TO BUILD THE MAIN SPIRAL COIL

You will need to purchase a few things.

1. You need 17-1/2 feet of 10 gauge (solid) bare copper wire (cost about 14 cents per foot). You can get this at any

electrical supply house. If you cannot get bare wire, you will have to get plastic coated and strip the coating with a sharp jack knife, taking care not to nick the wire, or yourself.

2. You need a piece of aluminum bar 3/16 x 1-1/2 inches, 20 to 24 inches long.
3. You need a medium size pair of pliers.
4. Soldering iron and acid core solder.
5. Small coil of 19 gauge coated (shel-lacked) copper wire.

Now -- we have 17-1/2 ft. of 10 gauge copper wire, lay it out on a flat clean surface and straighten it out taking the curve out of it and the kinks and bends. Next we need a secure and strong place to fasten the ends of the wire to -- like a trailer hitch or bumper of a car or truck etc. After you have found a place to secure your wire, fasten both ends of the wire to it as shown in Fig. 1.

Slowly pull the center of the wire so that you have 2 pieces of wire, put your aluminum bar in the loop and pull tight. With a pair of pliers close the wire down on the bar tight so that it passes between the screws. Pull hard on the wire with the bar -- it won't break. Start twisting as shown in Fig. 1 -- always keep tension on the wire -- do not let go of the bar. (COUNTER CLOCKWISE). Twist the wire, stopping at time, give the wire a couple of good yanks. NO, it won't break. Twist the wire until you have a good tight twist on it. When you think you have twisted it enough -- twist it a little more. When you get it where you like it -- SLOWLY back the pressure off of the bar.

Remove 1 screw on the bar and slide the loop out or off of the bar. Unfasten the wire where you secured it and cut the spiral wire as close as possible at secured end. Lay the twisted wire down flat. Measure 3" down from the top of the loop as shown in Fig. 2 and mark it with a pencil or pen. Hard or tight bend the wires as shown in Fig 2, 90 degrees. Grip the twisted wire at the bend point with a pair of pliers, and start forming the spiral. Continue forming 1 or 2 loops. Remove the pliers, grip the wire and hand form the spiral as shown in the drawing #2. When you have formed about 4 loops of the spiral, stop and apply light heat to the coil with a hair dryer or similar device to relieve some of the stress in the wire, so

that the loops that you have formed will stay where you have bent them. Repeat the operations and continue forming until you have your spiral.

DO NOT BEND END OR TIP IN YET.

Put your spiral in the freezer of your refrigerator for 30 to 45 minutes, and freeze it. This will tend to stabilize the copper some and relieve some more of the stress.

In Fig. 4 we can see that if we bend a piece of metal the inside of the curve is compressed and the outside is stretched, this stress is what we are trying to get rid of. About now some of you will be thinking -- GAD -- he even tells us how to hold the hammer. I am sure that some of your who are pro's at metal forming and fabrication can build this thing -- WHAM-BANG, but please have patience, not all are gifted in some of these skills.

When you have formed your spiral and it is shaped as you want it, hold the loop of the spiral with your thumb and point fingers at eye level height and sight across the spiral, it should hang so that all coils are level and even with each other, so that it is flat -- if not form it so it is. Put the coil in the freezer again, repeat freezing operation several times, this tends to age harden the coil some.

With a very hot soldering iron solder the end of the coil, wash it in warm water, dry it, and bend end in as on drawing #2. After you bend the tip in, bend it down a little bit so the bent in tip clears the crossed coil by about 1/4 inch.

Drill 2 small holes in the spiral at points marked on Fig. 6, taking care not to break the drill, use light pressure. Cut 1 piece of coated coil wire (19 ga.) about 4 1/2 feet long. Push one end of wire (about 1-1/2 inches) up through bottom of hole in spiral, and wrap wind (twisted) loops of wire to second hole. Straight wrap 1 loop at hole area, this locks the standing wire. Pull standing wires tight with pliers and cut standing wires to about 1-1/4 inches.

Refreeze spiral and warm to room temperature. Sand or remove shellac from standing wires down about 3/4 of an inch, this makes electrical contact for the coil shocker. You have finished the main spiral coil. You have just done the hardest part, the rest of it is easy. Save your

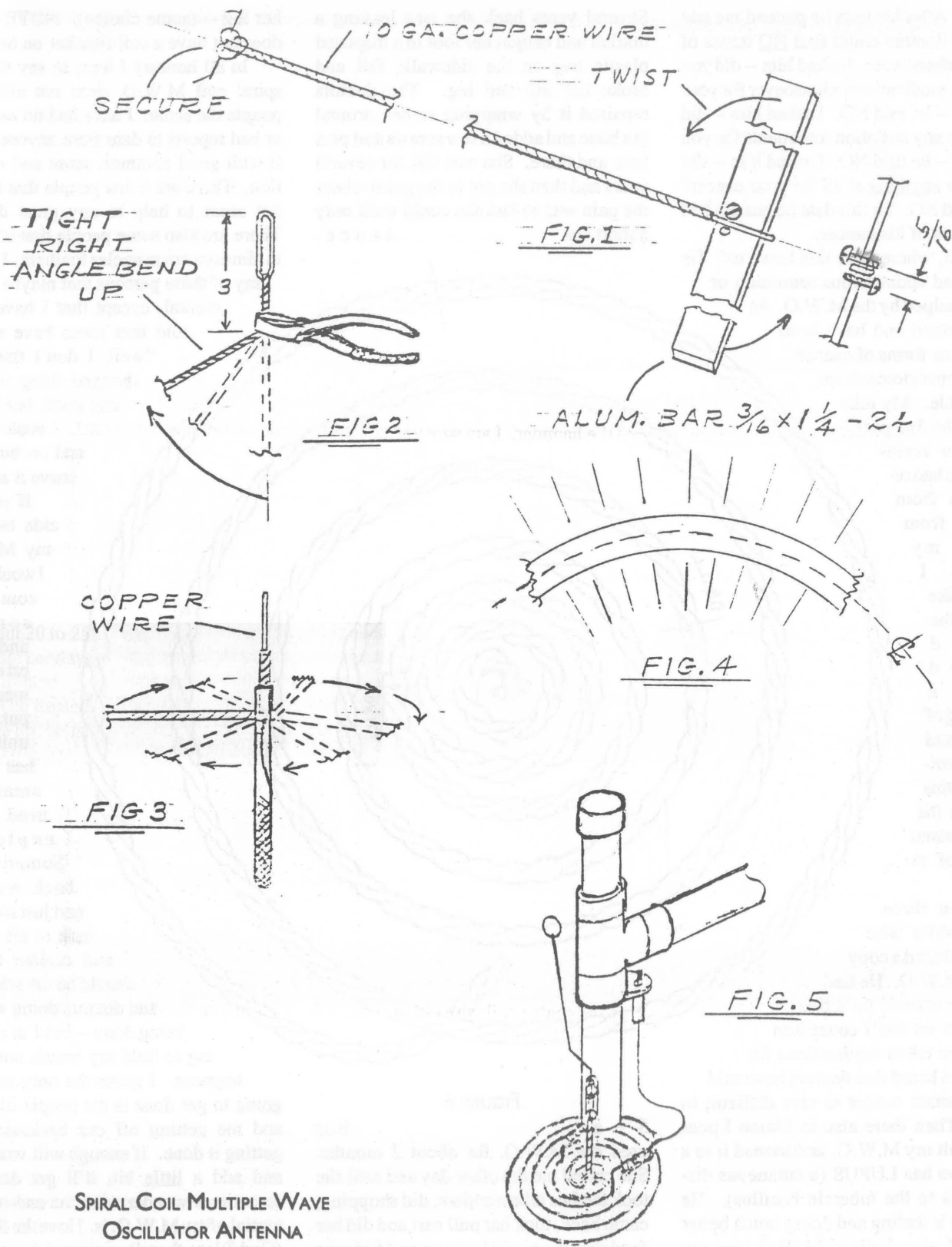
aluminum bar; you may want to build other types and shapes of coils and spirals to experiment with. I have wound and tried 2 wire coils, 3 wire coils, cone shaped spirals, step spirals, spirals with wires attached and hanging down with soldered tips etc. There is no end -- you can experiment to your heart's delight, it's only limited by your imagination.

In closing, I would like to tell you a story -- a true story about a close relative who gave me permission to tell of his experience with my M.W.O., but prefers to remain anonymous. I will not elaborate, but just state the facts as told to me by him and his nurse.

This relative took a trip by car to the southwest part of the U.S. with some friends. Before he left he called me and said that he would come to California and would stop to visit with me. This was in the late summer of 1990. After arriving at his destination in the southwest, the weather turned very hot for the whole western U.S. Due to this extreme hot spell, he phoned me and said he was returning home and would not come to California.

When I talked to him on the phone before he left, I told him I had built a Multi Wave Oscillator for him and I would give it to him when he came to see me, and he could take it back with him. He did not make it to Calif. but returned to his home in the midwest. After returning home he became ill and went to see his doctor. After being checked by his doctor, he had tests, and the doctors discovered that he had cancer of the large intestine. When I phoned him and found that he had cancer, I asked him if he wanted to try my M.W.O. I told him that I could not guarantee that it would help him -- but I said -- what do you have to lose. He said yes, he wanted to try it, so I sent it to him.

When he received the M.W.O., it was assembled from instructions I sent him. He used it twice a day for approximately 6 weeks. He had additional medical problems, he had diabetes and congestive heart failure plus the cancer plus a back problem. I had made the M.W.O. for him in hopes that it might help his back. When he went back in 6 weeks to see a cancer specialist doctor they gave him extensive tests and could not find any traces of



SPIRAL COIL MULTIPLE WAVE
OSCILLATOR ANTENNA
CONSTRUCTION DRAWINGS
FIGURES 1-5

cancer. After his tests he phoned me and said the doctors could find NO traces of cancer whatsoever. I asked him -- did you take any medications whatsoever for your cancer? -- he said NO. I asked him -- did you take any radiation treatments for you cancer? -- he said NO. I asked him -- did you take anything at all for your cancer? -- he said NO. To this date he has not had any return of his cancer.

Now, where does this leave us? He either had spontaneous remission or he was helped by the M.W.O. As I understand and have been told, some forms of cancer in the upper stomach are inoperable. My relative is the 3rd person who seemingly has had remission from cancer from using my M.W.O. I do not like to use the word cured when speaking of cancer, and I say seemingly as this is all in the experimental stages of research.

Then there is Al Mills who built and used a copy of my M.W.O. He had prostate cancer; he's fine now, but we can't count him as he has taken medications for it. I have heard that doctors have said that prostate cancer is very difficult to treat. Then there also is Simon Lucas who built my M.W.O. and loaned it to a lady who has LUPUS (a cutaneous disease due to the tubercle bacillus). He said she is feeling and doing much better now. I also built a M.W.O. for my mother who lives in So. Sioux City, Nebraska, across the river from Sioux City, Iowa. I sent it to her -- she could not assemble it so I flew back to do it for her.

Several years back she was leaving a market and caught her foot in a disposed plastic bag on the sidewalk, fell and broke her hip and leg. The doctors repaired it by wrapping screen around the bone and added a few screws and pins here and there. She was OK for several years and then she got to the point where the pain was so bad she could walk only a short dis-

her leg -- (some choice). NOTE -- She does not have a coil shocker on her unit.

In all honesty I have to say that my spiral coil M.W.O. does not affect all people the same. I have had no negative or bad reports to date from anyone using it with good common sense and discretion. There are a few people that it does not seem to help to any great degree. There are also some people that it seems to almost work miracles for them. I would say of these persons that maybe it was

mental, except that I have been told that some have said --

"well, I don't think the damned thing will do any good, but I'll try it". I could go on and on but we'll leave it at that.

If you decide to build my M.W.O.

I would welcome any serious and honest experimental input as this unit still has many areas that need to be explored.

Sometimes I back way off and just stop and look at all this -- and realize that it should be the scientists and doctors doing what is

being done -- but I'm not going to hold my breath until that

happens. I guess the only way it's

going to get done is for people like you and me getting off our backsides and getting it done. If enough will work at it and add a little bit, it'll get done. I sometimes wonder what the end-run potential of my M.W.O. is. I love the doctors (God Bless them!), we need them, but I wish they were more open minded and that they were not so profit orientated and stigmatized by their organizations. I think these ideas I present here will help.

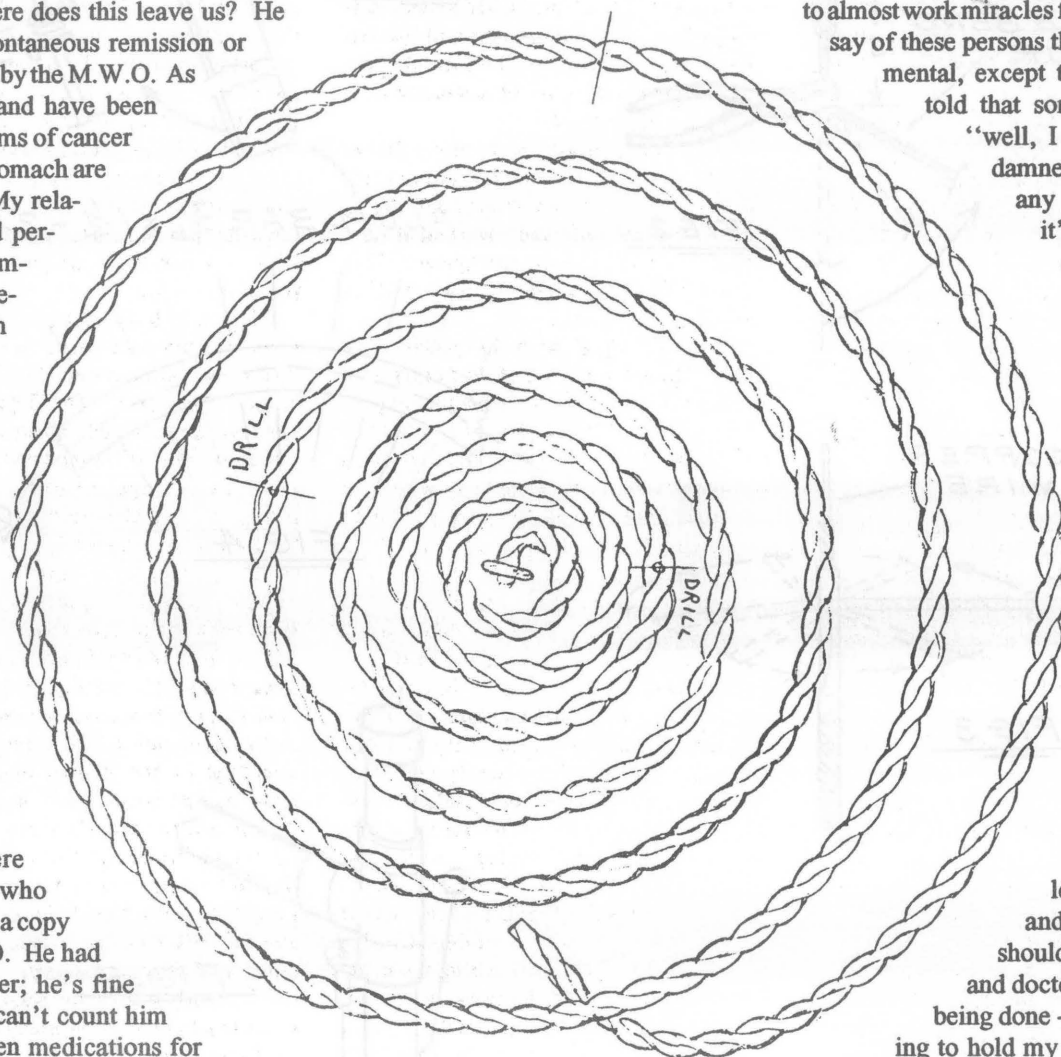


FIGURE 6

She has used the M.W.O. for about 2 months. She called me the other day and said she took the bus all over town, did shopping, came back, took her pull cart and did her food shopping -- 6 blocks up and 6 blocks back -- and then walked up to the restaurant and got her dinner, all in 1 day and she said she feels fine. The doctors gave her the choice of pain shots or cutting off

PSYCHIC SURGERY

Harvey Martin III

There is a lot of confusion and misinformation surrounding the phenomenon of "Psychic Surgery" and the Filipino healers in general. In spite of the many dramatic cures that have taken place through the efforts of the healers and the worldwide popularity the healers have gained, the healers are generally dismissed as con men who use sleight of hand to perform placebo operations that are effective mostly in psychosomatically induced illness.

Though there are psychic surgeons who are con men and do use sleight of hand there is a lot more to the story. The best part of the story hasn't been told yet and I hope to shed some light on the spiritual beliefs and practices that have led to the most controversial spiritual healing method being practiced today.

I had the good fortune to be allowed to observe and participate in the inner workings of the Philippine healing ministry as the vice-president of, "The Philippine Healers' Circle Inc. (PHCI)". The "PHCI" was founded by Rev. Alex Orbito and is the largest organization of its kind in the world. The "PHCI" was established to promote the Philippine healing ministry in general and psychic surgery in particular on an international scale. Rev. Alex Orbito is the psychic surgeon who worked with Shirley MacLaine who later wrote about him in her book "Going Within".

Living and working with the healers was enough to make a believer of anyone. In the year I spent in Manila I saw one plane load after the next of patients arrive from around the world. I heard the same story over and over of recovery and a new lease on life after having lived through medical horrors and the failure of doctors to cure them. I was able to observe the condition of the patients from the time they arrived and it was apparent that a large number were experiencing dramatic results from the treatments they were receiving from the faith healers and psychic surgeons. It was also clear that the healers themselves were under constant pressure to heal as large numbers of patients arrived daily and were obviously staggered by the endless life and death situations they faced in healing the terminally ill. The patients who were healed became staunch support-

ers of the healers and their methods and those who didn't experience any relief from the ailments that afflicted them either felt that they lacked sufficient faith or that the healing was fraudulent. Nevertheless, during the time I spent at the center in Quezon City a large majority of the patients professed a great deal of relief and many were spontaneously healed.

As I am a healer also, the Filipino healers asked me if I would offer my healing services at their center and I agreed. In the months that followed I worked at Rev. Orbito's healing center in Quezon City three days a week and immersed myself in their world.

At the healing center in Quezon City large numbers of people arrived daily with the hope that they could be healed by psychic surgery. Psychic surgery is a controversial spiritual healing method that cures through the opening of the body with bare hands and once opened visibly removing the diseased tissue from the body. Upon removal of the diseased tissue the opening would be closed without a scar.

In most cases the first reaction to hearing about psychic surgery is to brand it as a fraud because it sounds so impossible, but as outrageous as it sounds, when you are in the center in Quezon City, psychic surgery is a reality. It is a reality supported by the testimonies of the healed. The healing is done in the open with no apparent attempt to hide anything. As the patients watch their friends get operated on the first reaction is amazement and the next is awe inspired reverence combined with a large dose of revulsion at seeing the copious flow of blood and the extracted tissue. What impressed me as much as the psychic surgery was the fact that the technique seemed to be equally effective whatever the religious persuasion of the patient. In many cases Moslems would receive treatment after listening to Christians singing the Lord's Prayer during a Christian worship service with a high incidence of relief, the same fact applied to the many Buddhists who came from Japan and other countries. At the center it wasn't uncommon to hear enthusiastic testimonies to the psychic surgeons being offered in Japanese, Arabic, Chinese, English and many

other dialects.

The healers professed Christ and claimed to derive their power from the Holy Spirit but they instructed those of other religious persuasions to surrender to God in whatever way they perceived God before receiving the psychic surgery. As I witnessed the amazing results of the efforts of the psychic surgeons I decided that if possible I would like to learn to become a psychic surgeon myself. Since I knew many of the most famous and powerful of the psychic surgeons I approached them and asked them directly if they would teach me how to become a psychic surgeon. I was told that there were many different types of spiritual gifts and that the ability to perform psychic surgery was a gift of the Holy Spirit, that they had been born with the gifts they possessed and it wasn't possible to teach someone how to become a psychic surgeon.

Much to his credit Rev. Orbito sponsored healing congresses each year in Manila which were attended by people from around the world. The congresses were very informative and featured a number of lecturers from different countries who lectured on the experiences that they had in bringing the healers to their countries and the follow-up studies that had been done in their countries on the cures affected by the psychic surgeons. A large number of the lecturers were scientists and parapsychologists who were very interested in discovering the scientific principles that made psychic surgery possible. A number of these researchers saw psychic surgery and the openings of the human body with bare hands as a physical manifestation and were determined to unravel the mystery through the laws of higher physics. Others saw the psychic surgery as a metaphysical phenomenon and applied their own theories and disciplines in an attempt to solve the enigma of psychic surgery.

The only theory that wasn't being seriously considered by the many doctors, psychologists, and others who I met and studied with was the theory put forth by the healers themselves. The healers unanimously taught that the psychic surgery was a gift of the Holy Spirit. In the years prior to my experience with the psychic surgeons I was a practising Mahayana Buddhist of the Tibetan tradition. Central to the practice of Mahayana Buddhism is the Bodhisattvic oath. The crux of the oath is the mission to enlighten all sentient beings and eliminate suffering. What attracted me to the healers more than anything else was

the bodhisattvic nature of their activities and the transformational power of their methods. I kept bringing up the point to various researchers I worked with that the more I learned about the religious practises of the healers and their followers the more the evidence of a secret Christian tradition accumulated. I found however, that if I even mentioned Christianity I was immediately dismissed as unscientific, irrational and looked down on by the scientists as well as the parapsychologists.

Unfortunately, the lesser known healers who worked with Orbito were jealous of him and his success and these healers would do anything in their power to secure a foreign sponsor so that they might enrich themselves by performing their healing abroad. From the first day I arrived at Orbito's center I was shocked that the other healers immediately began to try to undermine Orbito's authority and usurp his role as the one and only true healer. It was quite clear that competition and jealousy were rife among the healers. I finally told Orbito that his fellow healers and members of P.H.C.I. were trying their best to convince me that he was greedy and oppressive and was using them to his own advantage. He shrugged his shoulders and told me that he knew what the situation was but that his policy was to ignore his detractors and to concentrate on his work.

It was one of his fellow healers who first told me that even though the ability to perform psychic surgery was a gift of the Holy Spirit that it wasn't necessarily one that you had to be born with. The healer told me that it could be developed through undertaking a certain type of training that had been developed in the Christian spiritist church. The healer also told me that the policy of the P.H.C.I. was to discourage any foreigners from trying to learn the technique. This healer then invited me to a service of his church and assured me that he would teach me how to become a psychic surgeon. At the time this particular healer was training another young Filipino to be a psychic surgeon and at the service I attended the young Filipino performed the psychic surgery. It was all very convincing but by the time that happened I had learned to suspect the motives of the healers.

As I studied with and came to know the various healers I noticed that in all of their healing chapels there was a banner that hung on the wall behind the pulpit. I eventually learned that the healers all belonged to an organization called the "Union Espiritista Christiana de Filipinas Inc."

(Christian Spiritist Union of the Philippines Inc.) I decided to go directly to the Union Espiritista as it was known and see if I could find out any information about the elusive training methods that would enable one to perform the miracles of the Holy Spirit.

I was well received at the Union Espiritista and upon meeting with the archivist of the Union I asked him directly if the Union offered any classes or instruction in the development of healing gifts and he told me that the Union offered instruction in what he called Christian mediumship training. The Christian mediumship training according to the archivist of the union had been received directly from the Holy Spirit through sanctified Christian mediums. The archivist explained to me that through the Christian mediumship training the Holy Spirit that lives within each of us could be brought into active use in any of the traditional functions attributed to the Holy Spirit in the Bible, such as healing, exorcism, and the performance of miracles. The archivist also told me that many of the practising psychic surgeons had been raised as Christian spiritists and had received the training during their youth.

I was elated, the implications of the existence of a training program that facilitated the development of the gifts of the Holy Spirit were profound. I told the archivist that I wanted to be trained as a Christian medium and he graciously invited me to his house to discuss the matter further. Several weeks after our first meeting we met at his house in Manila. He told me that the Union Espiritista had changed a lot over the years and the Christian mediumship training was taught differently in the present time than it had been taught in the past. After he explained to me the steps I was to take to begin the training I told him that the requirements sounded a lot like Hinduism. Even though I had nothing against Hinduism I wanted to take as close to the original training as possible. He told me that the original training was only taught in the remote provinces and he assured me that, as a foreigner it would be much too dangerous to attempt to find the trainers and receive the training.

During our conversation the archivist told me that in the early days of the Union Espiritista the Christian spiritists, through their sanctity and devotion to God had developed a special relationship with the Holy Spirit and had learned many secrets of the spirit. Among these were special prayers that facilitated divine intervention

in healing and other Christian practises and what he referred to as Keys which were given to the church. He didn't speak English well enough to explain the use of the Keys. I asked him if there were any records of the early church and he left the room and returned with a very old book. He told me that the book had been found in an old church in the province of Pangasinan buried under the altar. The pages of the book were written in old Spanish in a beautiful cursive style and were cracked and brown from age. The archivist was totally in the dark as to the contents of the book but suspected that some of the spiritual secrets might very well be recorded in the book. I was fascinated and offered to hire a translator to find out what the book was about. He agreed and told me that as long as I gave him a copy of the translation that I could have the book. I agreed and began my search for a translator. Shortly after the visit to the archivist I found an excellent translator and rented a house in the mountain city of Baguio in northern Luzon where we began the translation.

As the translation got under way I was anxious to see the results. At the end of the first day the translator seemed to be troubled and uneasy so I tried to find out what was troubling him. He told me that he had never seen anything like this book and that he felt unworthy to translate it. I reassured him and asked him what it said. He explained that it was a book of corporate minutes but the format of the business meetings was very unusual. In the book the business meetings were held between the president of the Union Espiritista and the Holy Spirit who was addressed as the protector or comforter and who revealed himself through one of the sanctified mediums. During the meetings the president of the Union Espiritista presented the agenda of the meeting to the spirit through the medium and the spirit would answer through the medium and address the issues brought forth. A study of the translated minutes revealed an organization that was founded and operated by people who had developed the ability to let the spirit work through them. The group of spirits that worked through them identified themselves as the "spiritual messengers of Christ". Every detail of virtually every aspect of the organization, from deciding where the centers were to be located and who would receive the charters, to testing the progress of aspiring mediums of the Holy Spirit was carried out by the spirit acting through the Christian mediums. It became clear that

the Union Espiritista was established and led by the forces of Christ from the world of the spirit. The members of the Union Espiritista made few decisions on their own and were very careful to follow all instructions received from the spiritual messengers of Christ to the letter.

While the translation was being done I visited a friend in Baguio who was also a member of the P.H.C.I. and I told him about the translation that was underway and he was fascinated. I told my friend of my desire to take the Christian mediumship training with an authentic provincial spiritist. He told me that he knew someone who could help me. Several weeks after our meeting I had a visitor, an older gentleman dressed in a suit who introduced himself as Rev. Benjamin Pajarillo. He gave me his card and presented himself as the national director of Christian mediumship training for his church which was called, "The Christian Spiritists of the Philippines Inc.". He explained to me that he had been raised as a member of the Union Espiritista but that there had been a schism within the Union and a large number of members of the Union had broken away from the Union and formed a new church. The reason for the schism was that the Union Espiritista had become dominated by non-Christian elements and in so doing had offended the members who chose to practice Christianity as their forebears had done before them. The man who lead the schism was the Rev. Eleuterio L. Terte. Terte was also the first Filipino known to have performed psychic surgery. I knew that I was on the right tract.

The C.S.P.I. is truly a Christian organization in every sense yet it is very different from the forms of Christianity practised in the west. The primary emphasis of the C.S.P.I. is in the development of the gifts of the Holy Spirit for the purpose of functioning as fully empowered members of the body of Christ on earth. The fact that Jesus used specifically these gifts in the development of his ministry and promised that we would do his works and greater is the cornerstone upon which the Christian spiritist practises are founded. The C.S.P.I. is the contemporary repository of authentic Christian spiritism.

The Christian spiritists teach like most Christians that God is three persons in one. God manifests as the Father, the Son, and the Holy Spirit. The Bible as a book is divided into three parts, they are 1) the Old Testament, 2) the New Testament, and 3) the Pentecost. The Old Testament is the

record of the dispensation of the first aspect of God the Father, the New Testament is the record of the dispensation of God the Son, and the Pentecost recorded the dispensation of God the Holy Spirit which exists to this day. According to the Christian spiritists we are now living in the third dispensation, the dispensation of the Holy Spirit.

Most Westerners have problems with spiritualistic practises because of the abuses of mediums who are the instruments of the lower earthbound spirits and are quick to disclaim any sort of spiritualistic practice. Yet it is clear that there must be some way to skillfully handle spiritual for worldly ends such as the healing of the sick and the edification of the body of Christ on Earth simply because Jesus demonstrated these powers himself and encouraged his apostles to develop themselves as instruments of the same power as Jesus himself demonstrated time and time again. In John 4:23&24, Jesus does a very significant thing, he identifies the nature of his Father and then specifically states the proper form of worship that is pleasing to God. Jesus states, "the time is coming and it is here when the true worshippers will worship the Father in spirit and in truth; for the Father desires such worshippers as these". He goes on to say, "For God is spirit; and those who worship him must worship him in spirit and truth". If God is Spirit and Jesus is Christ and we are indeed in the dispensation of the Holy Spirit then the Christian spiritists certainly have named themselves correctly.

After I received the Christian mediumship training from the Rev. Benjamin Pajarillo and experienced for myself the truth of the ministry of Christian spiritism I told Rev. Pajarillo that any further information I could get about the formative years of the Union Espiritista would be very helpful in the work I have to do as a writer. He managed to obtain a copy of the original spiritist doctrine that had been written in 1909. It took a year to have it translated as it was written in a combination of Spanish, Ilocano, and a provincial dialect called Pangasinense but it was worth the wait. In the book the differences between Christian spiritism and other types of spiritualistic practises are clarified. The book of doctrine was written in question and answer form in much the same manner as the corporate minutes was. Here is an excerpt; Q) "Why was the third dispensation initiated by the lower spirits that used phenomenon such as table-rapping, knocks

from invisible sources, and other coarse forms of spirit communication?" A) "It did not come from their own desire because they are under the power of brilliant spirits who are called the spiritual messengers of Christ and the manifestations of the lower spirits are to call the attention of the masses of innocent people and the curious and onlookers. In this manner, the people learn of these aforesaid rough phenomenon and gather to witness thus opening the door for yet greater manifestations."

Quoting from that same book written in 1909 the author states in his introduction that, "Fifty years have passed since the dawning of spiritualism in 1848. Spiritualism has gained ill repute in the western nations where it occurred. Christian spiritism has flourished as the other forms of spiritualism have gone into decay. Here in the Philippines the forces of Christ in the spirit world made themselves manifest through our mediums as medicine in the form of magnetic fluid which flows from the spirit world through the mediums to introduce Christian spiritism through healing". He goes on to say that, "The pulpit and the learned claim that the appearance of the spirits was the work of the devil who settled in the Philippines. Nevertheless there is an increasing number infused with the presence of the Holy Spirit which is spreading to the provinces and its result is none other than morality and sanctity and the knowledge of God's spirit. So it has become clear that Christian spiritism is a good tree because its fruit is good. It is apparent that God has manifested in the third person of the Holy Spirit announcing to the world that he is the embodiment of the Holy Spirit and those who believe will be saved. Those who are fortunate enough to become the mediums of the Holy Spirit will serve as the gateway of the revelation and plan of God that mankind will pass to reach the spiritual world."

To close this introduction I will say that in the chapters to come, I will outline the historical development and practises of the Christian spiritists. I will also explain the phenomenon of psychic surgery and how it relates to the revelation of the sign/gift ministry of the Holy Spirit that is destined to bear great fruit in the years to come. I will close as the author of the 1909 text closed his introduction by saying, "May the reader accept this which I dedicate to you, because if you follow what has been written here you will realize when you are face to face with God how fortunate you are indeed."

DISTANT VISION

Romance & Discovery on an Invisible Frontier

By Elma G. "Pem" Farnsworth

PEMBERLYKENT PUBLISHERS

Salt Lake City, Utah

Book Review by Tom Brown

"Some time ago a Utah born Idaho farmboy was daydreaming while disk harrowing a potato field with a two horse team. The year was 1921. The boy was 14 and the substance of his dream was so far reaching as to alter the shape of civilization! The ideas of modern television really began that day."

This is one of those rare books that combines a true life story of the struggle to develop world-transforming concepts with the awesome vision of potential technologies which have lain hidden from view. *DISTANT VISION* is a first rate biography that belongs on your bookshelf next to *PRODIGAL GENIUS*, that insightful biography of Nikola Tesla written by John J. O'Neill. Pem Farnsworth has done us all a tremendous service by sharing the story of her life with her husband Philo "Phil" Taylor Farnsworth III, the Father of Television. After reading this story it became obvious that Pem can rightfully be called the Mother of Television! This book is a valuable insight into the struggle of the inventor against the storms of life, and into technologies involving vacuums and electron guns.

Philo Taylor Farnsworth II, (1906-1971), was a person with an inquisitive mind and incredible persistence which carried him far beyond his invention of television. But I'm getting ahead of myself...

As youths the families of Phil and Pem were very close, even sharing a duplex apartment in Provo, Utah for a while. They were both descendants of the original Mormon pioneers who crossed the country to build their lives around the Great Salt Lake. Coming from hardy pioneer stock was a definite asset to their lives together which took them to great heights, but also dashed them hard on the rocks a few times, always to rise and carry on.

Young Phil was always reading what he could of the exciting new field of electricity and felt that as radio transmits audio signals visual signals could also be transmitted. This problem occupied the mind of the young Farnsworth and while plowing a field at the age of 14 he got the concept of electron beams creating a picture, row by row.

It took many years of leaping hurdles to

bring this dream to reality. After their marriage Pem and Phil moved to Hollywood, California where the first attempt at testing the television theory was foiled by a simple mistake. Undaunted, with the help of some good friends, they continued on, eventually moving to San Francisco and getting some basic funding. The quest for financial backing of what sounded to many like a 'hair-brained' idea was a constant diversion from the primary goal of the wireless electronic transmission of pictures.

Cliff Gardner, Pem's brother and Phil's longtime friend, joined them in San Francisco and a lab was acquired at 202 Green Street, now a historical site. Cliff, with agile mind and keen learning abilities, soon educated himself in glass blowing, becoming quite skilled, and he began making the necessary tubes to test Phil's television concepts. (Years later Cliff became head of the vacuum tube department at Raytheon.)

First a line was broadcast, then a basic geometric figure -- a square. The lab team wanted to try to broadcast a triangle, to make sure the visible square wasn't an electronic effect, so Cliff went into the transmission room to switch the figures. As everybody watched from the receiving room a puff of smoke filled the screen. Phil raced to the other room in horror, thinking that everything was going up in smoke, but it was the good natured Cliff just blowing smoke from his cigarette toward the camera tube. The model worked better than they expected!

The main problems with getting television to the commercial stage were that it was hard to convince people with money that there was commercial potential in it, and RCA, who controlled most of the radio patents in use, wanted control without licensing Farnsworth's patents. This is a complex story describing the clash between new ideas and powerful entrenched interests and I would recommend its reading to all inventors who think that by simply building a better mousetrap the world will beat a path to your door.

Television attracted international interest with major projects going in England and Germany. One exciting part of the story involves Phil and Pem barely escaping being kidnapped by the Nazis while in Germany.

This book would make a great screenplay (for television, of course)!

Can we fully assess the impact of Phil's inventiveness on our society? Television is a great gift to the world, and it has become, in partnership with electricity, a tremendous cultural force bringing blessings and curses. Turning on the TV and scanning the channels I can't help but think that the fruit of Farnsworth's mind is being wasted in a curious paradox, that it has lowered human's cognitive capacities while pouring forth information at an incredible rate. If Farnsworth himself would have been able to hold control of television, at least one network, I think that a much higher quality of information would be broadcasted. Seeing the earth from space is a consciousness-raising event. We're circled by satellites scanning the globe and all we get is a 30 second view on the weather report for our local region. A more sane and intelligent world would have a channel that broadcast views of the global weather patterns, real news from all countries around the world, solar and terrestrial energetic activity, in essence what is really happening (anything other than violence and sitcoms!). Phil invented TV, he did not exploit the invention, and in fact came up quite short considering present value of the industry. But he had to sell off large parts to get initial funding in the '20s and '30s.

Farnsworth developed a tube called the Multipactor, which involved electron multiplication. That is one electron strikes a surface and makes two, they strike the second surface making four, back to the first surface makes eight, on and on into the millions in a flash of time. Engineers of the time described this tube's workings as "almost magical", and it operated at 100% efficiency not counting the heat! (This astounding effect has been reproduced by others in experiments with radar tubes.)

Phil began to notice certain curious happenings in the multipactor tubes, especially a bright blue spherical glow. "A virtual spherical cathode was being formed in the volume close to the center of the tube, with an enclosing virtual anode between it and the real cathode." In effect Phil was getting 'containment' effects giving promise to fusion power. Phil chased this dragon through many ups and downs of life, and moves around the country, but it was persistently present somewhere in his complex mind. He caught the tail and in 1964 he produced *WORKING* nuclear fusion in ITT/Farnsworth labs in Indianapolis, Indiana. The key to this low cost fusion power, which Farnsworth proved to be a reality, involves the geometry of electron guns in a vacuum.

Phil saw through fusion the ability to transform the world within his lifetime, and it was quite possible, but blocked by corporate bureaucracy, following the natural progression of the organism of society, which trails behind inventors -- sometimes far behind. He envisioned free energy leading to space travel and was ready to go. He said that travel to other stars would be much easier than previously conceived. He said it would take very little time to cross the vast reaches of space because there was nothing to cross! He knew his dreams could have been achieved within a few short years if he could have kept up research. But that was not to be and Phil's health failed him, the inventing process, being at the forefront of an advanced new technology, wore out his strong body. **DIS-TANT VISION** preserves his legacy for future generations of inventors. Phil always knew the impossible is possible and his life is a testament to that. He is a true legend.

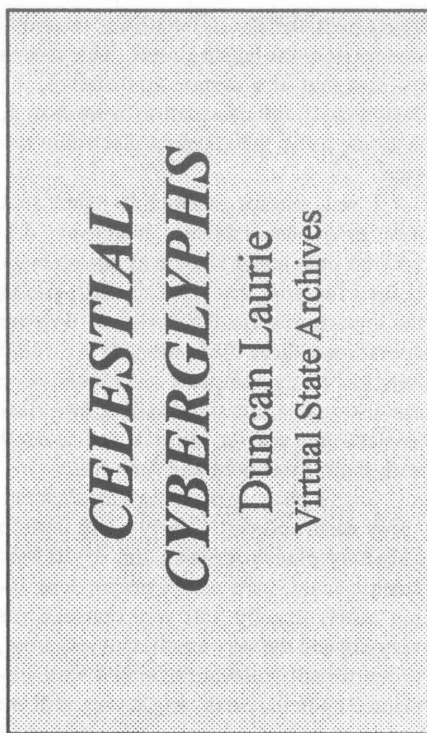
While Pem writes this book from the non-technical, biographical standpoint, she was also deeply involved in many of the projects and she gives important keys to understanding what Phil's mind was producing. This is essential reading for the energy researcher who wants to understand the unlimited energy potential locked in the vacuum. I have barely scratched the surface of the story in this review.

One correction should be noted, and will probably be noticed by many energy researchers: As this book describes Farnsworth's rightful place as the inventor of television it ranks him with Marconi as inventor of radio. But, as all borderlanders know, it was Nikola Tesla who invented radio, and the Supreme Court ruled in favor of Tesla's patents over Marconi's a year or so after Tesla's death. An understandable error as Tesla and Farnsworth, perhaps our two greatest inventors, are both noticeably missing from the history books.

One of the outstanding qualities of the Farnsworth family that is apparent from this book is their self-sufficiency and determination in achieving a goal. The publication of this book follows in that tradition as it was self-published by Pem and son Kent, hence **PEMBERLYKENT**. It is hoped that this book will broadcast its message far and wide.

And it would be nice to hear more from **PEMBERLYKENT** Publishers, perhaps a book of Farnsworth Patents, or maybe some of the fusion notebooks!

DISTANT VISION (ISBN 0-9623276-0-3) is \$24.95 + \$3 P&H from **PEMBERLYKENT** Publishers, 2121 Garfield Avenue, Salt Lake City, UT 84108-9908. Order line: (800) 829-2931.



It is a curious artifact of our time that with all the sophisticated scientific probing of space for extra-terrestrial life, the most dramatic evidence currently before us now is not scientific but artistic. I am referring to a recent airing on a television show called "A Current Affair" of the extraordinary hieroglyphics impressed onto wheat fields by some unknown agency, not far from the megalithic ruin, Stonehenge.

The television commentary went on to explain that up to four such sites per week were currently being discovered, and that witnesses reported seeing lights like "ferris wheels" in the sky above them. Scientists were setting up elaborate mobile laboratories in the area in an attempt to isolate the phenomenon.

Remarkably enough, the incidents had evolved from disc indentations in the wheat, gentle enough to not kill the plant, but forceful enough to push it to the ground in a rotated fashion, to elaborate lines of glyphs, geometrically precise curves, bars, circles and crosses that appear to spell out a mysterious message. My immediate impression was of the plain at Nazca, in Peru and of the mounds there, with one important difference. These indentations had no artistic curvature or decay to the image; they were precise, like printed letters or numbers, with hard edges and symmetrical curves all in balanced proportion to one another.

The implication cannot be dismissed that the message conveyed by such a configuration is deeply seductive to the imagination and highly reminiscent of earth work art and ancient architecture and design. It also bears resemblance to the circuit board design in its more glyph-like manifestations. Such a message seems to totally bypass a rational, political agenda for communication. Whatever is producing these remarkable designs, it is clearly a link from known to unknown, artifact to archetype.

Should one choose to extrapolate from this observation, it is possible to surmise several things. One is that for once UFO contact or whatever it is, has chosen an aesthetic rather than a technological *modus operandi*. The public imagination is lured back, by proximity to Stonehenge, to pre-historical associations and lore, the power of symbol and stone, to some mysterious origin. By casting its reflection back into time rather than ahead, we the observer are caught by surprise, at one in the same time pleased but in awe, somehow internally gratified that our intruders have taste, subtlety and artistic vision.

Another observation is that this departure from the current horror surrounding the UFO mystery is remarkably playful without compromise to its numerous overtones. This fact brings it much closer to Jung's link to the collective unconscious and all his extensive research between consciousness, symbol, archetype and unknown source. As an art object, these glyphs and forms are monumental repudiations of a science that will not or cannot explain their origin, and as such, cast extensive doubt upon our modern religion of rationalism and materialism.

Yet these displays are designed to human scale in the same relative proportions as Stonehenge. A person can walk among the circles and lines and be thoroughly conscious of their scale -- not too big to see, not too small to discard. Just right to impress a human mind. And since they read from the air a few thousand feet up, just the correct size for aerial reconnaissance and video photography. One might suspect that information of this type injected into the mass media might act like a virus of sorts, undermining the dogmatic position scientific materialism and Madison Avenue commercialism have worked to erode our sense of the mysterious, the mythic and the pure. For once, something of the unknown seen in the sky and felt on

the ground has not been co-opted into some Hollywood horror.

Viewed from another perspective, we are being given an analogue rather than a digital message. For years, historians have poo-pooed glyphs as linguistic vehicles, in their repudiation of the ancient culture's relative sophistication, as proof of minimal technological expertise. However, today we witness our own culture depending more and more upon glyphs in signage where language presents a barrier to communication. I would imagine the glyph codes of computers function in similar ways. So it is quite possible from a design point of view the glyph can at a certain level or to a particular viewer, become discernible as a coherent message.

To add an additional dimension to this possibility, let me add some fragments of a conversation I had at one time with an electrical engineer trained to understand, construct and detonate a nuclear weapon. His education and security clearance gave him access to very sophisticated weapons technology.

I was asking questions about circuit board construction and the relationship of the design to the way energy was manipulated in the circuit, looking for some clues that would break the language barrier between his field and mine.

We are all familiar with the circuit boards in radios and T.V.'s where little parts, transistors, capacitors, resistors etc. mitigate the flow of current, tuning it and directing it to specific design intentions. What I didn't know, but was informed about in that conversation, was that at a micro scale, the scale and proportions of the circuit actually substitute for the components that at a bigger scale are soldered in. That means that the lines themselves,

by element, thickness, length and interruption serve as the entire circuit. This means (to me) that at a certain finite level, the design itself, the information in the design, is acting as an independent electronic device.

I was further startled to learn that these microscopic devices, which may differ with only one molecule of one element in their function, are often stacked, giving the opportunity for the design to become operational three dimensionally. I could imagine vastly complex, minuscule three dimensional holograms swirling into view as electronic shapes, mimicking life itself with their movement and function.

So is it entirely possible that when one views earth and particularly a hay field in Salisbury plan from the point of view of cosmic scale, with man's proportions lying nearly exactly half way between the very big and the very small, that a symbol, proportionally relevant to man's scale imprinted upon the earth, might very well act in some hitherto unknown way, to conduct or transduce information and/or energy?

Perhaps that aside from their impact upon the psyche of man, these symbols, lying so close by one of the world's most enduring enigmas, Stonehenge, could in fact be moving energy into some as yet undiscovered configuration?

The whole notion of how geometry and proportion conditioned man's world view in antiquity has been exhaustively pursued by John Michell, in his books, The New View Over Atlantis and Proportions of Paradise. Here, Michell sets forth his thesis that design that was in proportional harmony with natural units of measurement, like the distance from earth to moon, earth to sun etc., played a decisive role in harmonizing man to nature, consciousness

to unconsciousness.

As architects pursue Bauhausian minimalistic formulas in their design construction, forever eroding the life enhancing materials, decorative and geometrical potentials available to them in the name of cost effectiveness and utility, it becomes more and more imperative to search for design element that can replenish the natural conductors of life energy afforded by the materials and methods of the past.

It is with this in mind that I offer the following observations. Perhaps we are being collectively modified, behaviorally, by these designs in a manner similar to the way a radionic practitioner accesses the energy field of a patient with a design or a numerical rate. Is it all that different than the way a musical scale or melody alters our behavior, or the aesthetic content of a work of fine art? Since we are joining information (the glyph) to energy (the earth) to man (via electronic media) we are obviously impressed in the workings of a circuit of some kind.

What is its purpose? Obviously to look for answers aesthetically, rather than scientifically. Who wants us to look there? A part of ourselves that has been lobotomized by rationalism and materialism.

As artists, if we mimic these glyphs in our work, they become absorbed in us and meaning is gleaned that is not intellectual as much as subliminal. Even to see the image is to absorb it into ourselves. How that design works electronically at a deep level of brain functioning we cannot guess, only we can say it is there once we perceive it. If it is indeed an enzyme or a catalyst to our psyche, our imagination, then perhaps what we do with the information is the only way we can discover what the information really is.

"Nature is an infinite sphere whose center is everywhere, whose circumference is nowhere."

Pascal

"God is an intelligible sphere whose center is everywhere and whose circumference is nowhere."

Corpus Hermeticum (Third Century)

"We can assert with certainty that the universe is all center,
or that the center of the universe is everywhere and its circumference nowhere."

Giordano Bruno

"For I am everywhere the center, the circumference nowhere to be found."

Liber AL

WATER AND CALCIUM MANAGEMENT

52nd Annual Bio-Dynamic Conference

October 1990, Kimberton, Pennsylvania

Reported by Tom Brown

The 52nd Annual U.S. Bio-Dynamic Conference was held at the Kimberton Waldorf School about an hour's drive outside of Philadelphia, Pennsylvania. It was an excellent location for the theme, as the east coast of the U.S. is more calcium/water oriented, and it was an interesting polarity to last year's conference on Silica which took place on the west coast, the silica polarity of the North American continent. Calcium is closely related to water in the plant and calcium oriented plants such as cabbages or spinach have broad leaves that hold more water than silica oriented plants like asparagus or rice that are finer in structure.

Jennifer Green gave the opening presentation on Friday evening. Her subject concerned the vital life of water and she showed a great number of slides on hers and related work. Waste water management is a primary project and the use of various reeds are used to clean heavy metals from toxic sludge. Flow forms, developed by John Wilkes and George Adams are used to treat water. These are concrete forms which allow the water to flow in an energetic pathway forming spirals and vortices, thus reproducing the purifying actions of natural flowing streams. Jennifer's presentation described the archetypal form of water, from the snake-like curve of rivers to the water drop which attempts to form a perfect sphere as it falls through the air. Jennifer introduced what is called the water drop method for testing water quality. In this method a sample of water is tested by mixing it in glycerin and dropping a sequence of drops of purified water. Each successive drop forms a different pattern and pictures of sequences of the first thirty drops of each sample are studied. Pure water is also used during periods of planetary alignments and it is found that various cosmic geometric relationships have a profound effect on the water patterns! Pictures from the water drop method may be found in *WATER - The Element of Life* by Theodor and Wolfram Schwenk (Anthroposophic Press, Hudson NY).

Jennifer also gave a two-hour workshop on the Water Drop Picture Method. She discussed the precise lab bench, camera, lenses, and water drop arrangement to produce the pictures, which show a metamorphosis of form. Other experiments were shown such as dropping a coloring solution

of potassium permanganate (into vortices created in lab beakers. These experiments show INTERIOR processes and Jennifer discussed that interiorization is the basis of life processes. This workshop touched on a number of important subjects and the works of many current and past researchers (including Viktor Schauberg) were mentioned. Jennifer is a very interesting researcher whom we hope to hear more from in the future. She can be contacted at Flow Research Lab, Box 930, Blue Hills, Maine 04614.

Walter Goldstein gave a talk on the role of calcium in the generative and life functions of the plant world. As an active Bio-Dynamic researcher he was able to broadcast much from his range of experience. The audience was extremely interested in this presentation and a lively discussion on the pros and cons of liming the soil and/or compost piles ensued, with much practical knowledge discussed and dispensed.

Andrew Lorand gave a workshop on the contributions of Lilly Kolisko (1889-1976) to Bio-Dynamic Agriculture. Lilly was the stenographer for Rudolf Steiner's Agricultural Course, and was handpicked by Steiner to undertake the scientific experimentation necessary to check out the practical value of the concepts presented in his Course. The Agriculture course was originally titled: SPIRITUAL SCIENTIFIC FUNDAMENTALS FOR THE WELL BEING OF AGRICULTURE, and was divided into three main sections: 1. Conditions for the well being of agriculture; 2. Observation of macrocosmos as a task of spiritual science, Earth and Plant Growth; 3. The individualization in the activities of agriculture. Lilly probed the veil of matter to discover the hidden forces of the cosmos and how they imprint their subtle signatures into earthly substance, that is how heavenly forces work through matter. Readers of the *Journal* have been introduced to Lilly's crystallization of metallic salts during various planetary alignments, but she carried this process a bit further to what is known as capillary dynamolysis. Capillary dynamolysis uses crystallizations of metallic salts, with organic compounds added in, to produce qualitative analysis of the compounds. For example, Lilly did a number of crystallizations with honey from various plants and parts of the world. Each shows a distinct

pattern modulating the regular crystallization of the metallic salt. This method was used extensively with diverse organic substances to describe qualities of plant and animal life which cannot be easily quantified. Capillary dynamolysis is described in detail in her book *THE AGRICULTURE OF TOMORROW* (Kolisko Archives, Bournemouth, UK, available from the BD Association, Box 550, Kimberton PA 19442). Lilly was a dynamic and tireless researcher whose work was of profound scope, but who nonetheless was somehow ignored for many years in the spiritual scientific circles who worked along similar lines. Andrew Lorand wishes to bring her important work to a larger audience and he is to be commended for undertaking such a valuable task.

Hugh Courtney and Ruth Zinniker gave a hands on workshop on the BD Camomile and Oak Bark preps, both of which are rich in calcium. The Camomile prep is made by stuffing camomile flowers into bovine intestines like sausages, a process Steiner referred to as "a charming operation", which are then buried in the earth over winter. The Oak Bark prep is made by stuffing ground oak bark into cow and sheep skulls, which are then buried. They are then dug up and are inserted into compost piles with the other BD preps. This was not for those with weak stomachs but it was very interesting to participate in, and is a regular function of the Bio-Dynamic agricultural method as presented by Steiner.

I've been questioned by many people as to the reason for the use of animal sheaths for the BD preps. People who believe in unmitigated kindness to animals question the use of the BD preps on their fields. I also believe in kindness to animals, but I use the BD preps on our garden. Rudolf Steiner gave his course in order to renew agriculture and heal the earth. These preps are a medicine for the earth and they use animal parts, regularly available in our present society, in order to bring in the correct energies. If this planet was in balance then this medicine would not be needed. For those who prefer the simpler method, there are always the compost and field sprays devised by E. Pfeiffer which are easier to use and easier to understand to the average farmer.

Hugh Courtney gave the Saturday evening talk on the BD 500 prep, (cow manure stuffed into a cow horn and buried for the winter months) and its relation to calcium. As Hugh is a man of action the talk was short and sweet and at its end everyone was invited to a cow horn stuffing party in order to make the BD Association's year's supply of BD 500. With musicians playing everyone had a grand time packing cow horns with manure. May have been the social event of the year!

ENGINEERING CONSIDERATIONS FOR MAGNETIC LEVITATION VEHICLES

by Michael Riversong

Magnetic Levitation Vehicles (MLVs) are now theoretically possible. Work by many scientists, including Iverson, Corum, and Rodin, has culminated in the formulation of several principles that collectively point to this development.

Several drive mechanisms have been proposed. In this paper, we will explore a few of these, and note engineering considerations that must be addressed in order to make these vehicles work properly and safely.

EARTH MAGNETIC DRIVE

This should be the simplest and lightest weight of all the configurations proposed. In fact, it may be possible to use a bicycle-like mechanism to get the magnetic wheel spinning fast enough to tap into the Earth's magnetic lines of force. The wheel itself will probably settle into one of the many proposed configurations that involve a series of magnets arrayed around the outside edge.

The idea here is to create a counterbalance to naturally existing lines of force near the surface of the Earth. A magnetic flywheel could do that, allowing for some lift off the ground, to an estimated height of five to twenty feet. Early models of this vehicle should have a top speed of about 40 miles per hour. Its efficiency is gained in two ways -- first, by being airborne, and thus not subject to ground friction, and second, by being able to use very little power to generate the lift and directional effects. After initial design of the flywheel, navigation and steering become the most difficult problems to address.

Navigation is a serious problem, because these vehicles cannot travel everywhere. They will probably only be able to use certain routes, similar to auto highways today. This is because of the variability of magnetic field lines at the Earth's surface. This is not as bad as it sounds, because many existing highways are built along old trails, which in turn often followed natural magnetic lines. Most cities have also been built in areas of high geomagnetic density. Regions of magnetic force will tend to be variable with geography and weather, so some kind of indicator is needed. Geomagnetic

indicators will be very tricky, because they must somehow be designed to read subtle variations in local fields while the flywheel is spinning and generating its own field. A possible direction to look in solving this problem is radionics or Molecular Emissions Scanning technology.

Because of the high-density field generated by the flywheel, conventional navigational instruments will be worse than useless. So will most forms of electronic equipment, including radios, computers, and even watches. Microprocessors simply cannot work reliably in the immediate vicinity of a magnetic flywheel. Compasses will, of course, spin around trying to follow the wheel. This means that any navigational instruments will have to send something other than magnetic fields. Old sailors know how to use a mechanical watch along with the sun's position, as long as the general latitude is known, in order to determine their current position. This could be the basis for whatever system is adopted in MLVs.

Steering mechanisms must be strong enough to compensate for crosswinds and headwinds. They also can have no electrical components. This indicates that hydraulic logic may be the solution to steering problems in these vehicles. Lockheed has been a pioneer in this field, having developed a system used on advanced jet fighters as a protection against possible wartime electromagnetic pulse situations. Some of these systems should be adaptable to the smaller scale of these personal MLVs.

IMPLOSION ENGINES

Here we will encounter a completely different set of considerations. The antigravity effect generated within a twist pipe will be difficult to control. We won't be using pre-existing lines of force for propulsion or steering. Sonic-type forces that are liberated by these engines will present unique engineering problems. Sometimes, we will see these forces seeming to act like electromagnetic waves. At other times, they will act more like sound waves. This implies that behavior of these vehicles may seem unstable until we

have overcome these problems.

Again, Molecular Emission Scanning technology may help. These devices, as developed by Bob Dratch, may be the most reliable way to look at what is happening inside an implosion engine. Indications from these devices can then be used to feed back parameters to an operator, who can adjust controls accordingly. Controls will be used to determine spin rate, depth of antigravity, and possibly size of the twist line inside the engine.

Another problem with implosion engines will be unexpected harmonics coming from the selection of alloys currently available. Since the vibrations inside the engine sometimes act like sound, we will have to carefully select the precise mix of elements in metals enclosing the implosion twist line. Otherwise, the metals could literally disintegrate. We can expect body-centered metals like Magnesium and Molybdenum to add instability. Cobalt and Zinc, because of their hexagonal crystal structure, will probably make metal enclosures more stable under operating conditions.

PURE SONIC MOTORS

This category is the most mysterious of all right now. Keely's motors fit here. Design and instrument considerations will be somewhat similar to those for Implosion Engines, but the actual harmonic proportions of all parts, including accessories, must also be considered. Present experiments with Keely's motors have indicated that the mathematical proportions of enclosures and parts are actually a working part of the motor itself. In fact, the mind of the user may be an influence on the operation of these as well!

There seem to be no Gauss-type magnetic fields implied by the design of these motors, so it is possible that some electronic circuitry should work, with the exception of devices emitting radio frequencies below 3 kHz. Low radio frequencies are definitely bioactive, and, since these motors resemble living beings in some harmonic (mathematical) aspects, we need to be very careful in terms of proximity to these electromagnetic waves.

In order to successfully design a vehicle based on Keely's principles, a person will have to be part mathematician, part musician, and be skillful in a machine shop. It is possible that using musical notes will be the key to controlling these motors, and so all designs must take the possibility into account.

MEASURING MOTION through the LUMINIFEROUS ETHER by COMPARING its EFFECTS

by Richard W. W. Allen

ABSTRACT

In this article, the existence of the ether and the results of the Michelson-Morley Experiment are both taken as premises.

Formulas for effects due to motion relative to the ether are derived.

Finally, predictions are made for experiments which will attempt to measure the velocity of the lab relative to the ether. Precise predictions are derived for an experiment in which two slowly revolving clocks transmit light signals to a central phase comparator.

The accuracy of the predictions will be determined by experiment.

The Michelson-Morley Experiment was an attempt to measure the velocity of the luminiferous ether (or the absolute velocity of the earth with respect to the ether which may be considered to be at rest). As such, it failed. The velocity of the ether was not measurable in that manner. However, the experiment did succeed in proving that motion is not as relative as some "Newtonian" physicists had naturally imagined.

Let us interpret the results. No matter which way the apparatus was facing, light travelled to the distant mirror and back in exactly the same time. Similar experiments have yielded the same or similar results. For example, the rate of a clock does not depend on its orientation relative to any motion through the ether, and the laser interferometer as a distance measurement tool is not disturbed by motion through the ether. My own personal experiments with a laser, beam splitter, mirrors, and interference fringes have not been affected by motion through the ether either.

A popular interpretation of these results is that it is impossible to measure motion with respect to the ether or absolute rest and that therefore there is no such thing as the ether or absolute rest, so that only relative motion is meaningful.

I disagree. The experiments show that the speed of a clock does not depend on its orientation relative to the velocity of its motion through the ether; that light travelling back and forth on a closed path takes the same amount of time for the round trip regardless of the orientation in any frame of reference that is unaccelerated. I predict the more general result that if two paths are compared for the difference in time it takes for light to travel the two paths, each path having a starting point and an ending point; then, that time difference will be unaffected by any motion through the ether so long as the vector from the starting point to the ending point for each of the two paths is the same. That is to say: the effect that motion through the ether has on the time that it takes for light to travel from point P to point Q is a difference in the total time that depends only on the vector from P to Q; and does not depend on what path the light takes from P to Q or on the time it takes for light to travel by that path.

I will propose an experiment to measure motion with respect to the ether or with respect to absolute rest (or to measure the velocity of the ether relative to the lab if you'd rather put it that way), but first let me digress to a classical interpretation of the Michelson-Morley Experiment.

Consider the apparatus in which light is bouncing between two mirrors such as in the Michelson-Morley Experiment or such as in a laser, to be a clock

or frequency generator, whose rate or frequency is independent of orientation; and suppose light itself to have a constant speed c with respect to the ether as Maxwell proposed. The time it takes for light to travel back and forth between the mirrors of the clock is the same regardless of whether the path of the light is parallel to the direction of the ether or perpendicular to it. Let t be the time as measured by a stationary observer and let t' be the time as measured by the travelling clock. Suppose in one case that the clock happens to be oriented perpendicular to the motion of the ether, or to the direction of travel through the ether. The distance that the clock travels in time t becomes $d = vt$ (all in stationary units). As the clock moves along distance d , the observer travelling with the clock observes light to have travelled a distance of ct' which he observes to be perpendicular to the direction of d (if he's able to observe the direction of d or v) in which c is the constant speed of light and t' is the elapsed time on his clock. The stationary observer observes the same light path to have a length of ct . The Pythagorean theorem provides the following relation:

$$(ct)^2 = (ct')^2 + (vt)^2$$

$$\text{thus } t' = t \sqrt{1-v^2/c^2} \text{ and } t = t' \div \sqrt{1-v^2/c^2}$$

The t' as measured on the traveller's clock is measured between the same two events as t on the stationary observer's clock. In another nomenclature establishing synchronization of clocks at various locations, expressions such as $t_2 - t_1$ might be substituted for t . t' and t are coordinates in differing coordinate systems. t' will be referred to as the apparent time for the same interval as the actual or rest time t . The above relation involving t and t' will be referred to as the time warp.

Consider what happens to the length of the clock if it is turned so that the light inside it bounces back and forth parallel to its direction of motion through the ether. Light inside the clock bounces forward distance A which is longer than backward distance B ; but since the frequency of the clock does not depend on its orientation, $A + B$ must equal $2ct$. Let l be the actual length parallel to the direction of motion and let the apparent length as measured by the traveller moving with the clock be ct' . Our purpose now is to determine length l and compare it with ct' . Euclidean geometry gives us the following relations involving clock length, bounce length, speed and time (v is the speed of the clock's motion relative to the ether. It's direction is taken into account in arriving at the relations.):

$$\begin{aligned} l &= 2AB/(A+B) \quad \text{where} \quad A+B = 2ct \\ &\quad \text{i.e.} \quad A-B = 2vt \\ &\quad \quad \quad A = ct+vt \\ &\quad \quad \quad B = ct-vt \end{aligned}$$

$$\text{thus } l = \frac{2(ct+vt)(ct-vt)}{2ct} \text{ or } l = ct(1-v^2/c^2)$$

Substituting $(ct')^2 = (ct)^2 - (vt)^2$ yields:

$$l = (ct') \sqrt{1-v^2/c^2}$$

This is the Fitzgerald Contraction. If x represents distance as measured by a traveller parallel to his own direction of motion through the ether, and x' is the same distance as measured by a stationary observer, the Fitzgerald contraction becomes:

$$x = x' \sqrt{1-v^2/c^2} \quad \text{or} \quad x' = x \div \sqrt{1-v^2/c^2}$$

If motion through the ether were meaningless or if motion were entirely relative; if so called "Newtonian" relativity were preserved, there would not be any so called "relativistic" effects. Such effects as the Fitzgerald contraction and its corresponding time warp are due

to motion through the ether. Although they do cancel in an attempt to detect such motion by the method of the Michelson-Morley Experiment, which fact is a basis of their derivation, they don't have to defeat any attempt to measure the effects of such motion, of which they are examples. In fact, experiments can be designed to take advantage of the time warp and the Fitzgerald contraction in order to measure motion through the ether.

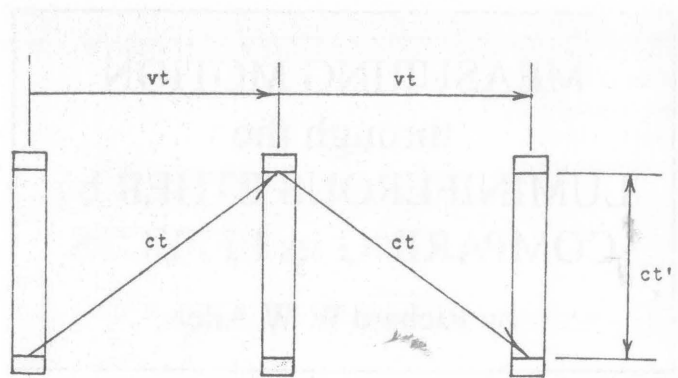
I propose the following experiment. Attach a monochromatic light source to the end of a spoke. (Sodium vapor, having two known bright lines near the middle of the visible range and close together will work well if a visual indicator is desired.) Provide the spoke revolver light (or sprite) with a vacuum container, noncontacting bearings, and counterweight; so that the light can be made to revolve at very high RPM. No electrical contacts need be used between the rotor and the stator. The motor may have a permanent magnet rotor and the power for the light may be transmitted from the stator to the rotor by a transformer. The bulb for the light can be small and the tensile spoke strong so that the bulb may be made to revolve at very high speeds without breaking anything. Run the sprite in different orientations and receive and analyze the light from the bulb as it speeds in different directions. The receiver for the light should be on the axis of rotation so that there is no Doppler effect. From the differences in the frequency of the received light, the velocity of the lab with respect to the ether may be computed. A similar experiment may be arranged with, for example, a clock in polar orbit and a receiver on the moon or in a higher orbit.

I propose a second experiment. Build or obtain two short cavity, single resonant mode, tunable lasers. Set them on opposite ends of a rod with a pivot at the center. They should both be aimed at the center where a beam combiner produces interference fringes that may be counted. Adjust them so that they are identical in frequency and the interference fringes don't move. Spin the rod on its pivot and notice how the fringes move back and forth as the rod makes the two clocks revolve. This will happen unless the apparatus is not moving through the ether or is moving parallel to its axis of rotation. Suppose for example that the motion relative to the ether is in the plane of the rotating rod (perpendicular to its axis of rotation). The rod is getting longer and shorter and the frequencies of the two clocks are increasing and decreasing, but not in such a way as to cancel each other out in detecting v . The following discussion is devoted to this second experiment.

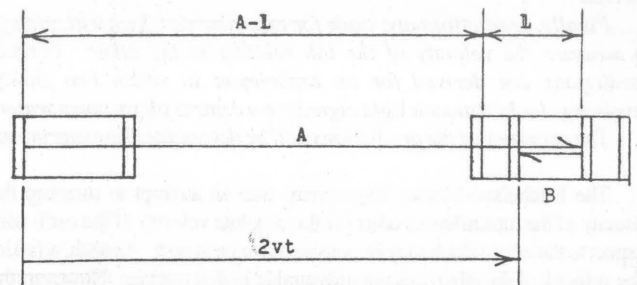
Consider the behavior of light in a laser that is moving through the ether so that the light in the resonant cavity is bouncing back and forth between the mirrors parallel to the direction of motion through the ether. If l is the actual length of the laser cavity as in the equations above, the light that travels forward against the flow of the ether must cover an actual distance of A and the light that travels backward must only cover an actual distance of B . Both the forward and backward beams have the same apparent frequency.

When light is bounced off the advancing back mirror, its actual frequency is increased (the Compton effect) but the traveller looking at it is receding from it (the Doppler effect) and the two effects must cancel with regard to frequency in order for the apparent frequency to be independent of orientation, if the observer is moving with the same velocity as the mirrors. When light is bounced off the front mirror, that mirror is actually receding from the light so that its actual frequency is decreased by the bounce, but the apparent frequency is still unchanged so the Doppler effect must again cancel the Compton effect with regard to apparent frequency. Light from a laser will appear to have the same frequency when viewed from any direction so long as the observer has the same velocity as the light source.

With regard to wavelength, these two effects do not cancel. The



$$(ct)^2 = (ct')^2 + (vt)^2$$



$$A+B = 2ct$$

$$A-B = 2vt$$

$$v/c = (l-B)/B = (A-l)/A = (A-B)/(A+B)$$

$$l = 2AB/(A+B)$$

actual wavelengths of the forward and backward beams are affected inversely as are their actual frequencies. The effects on apparent wavelength, rather than being cancelled, are compounded. The light travelling forward over the longer distance A (actual distance) takes longer and its actual wavelength is shorter. Since the apparent length of the forward bounce is shorter than the actual length, the apparent wavelength is even shorter than the actual wavelength.

On the backward bounce, the actual wavelength is increased and the apparent length is longer than the actual length, so that the apparent wavelength is even longer than the actual wavelength.

In the proposed experiment, the forward wavelength and the backward wavelength are compared by slowly rotating the apparatus and counting the number of fringes passing the combiner midway between the two lasers. If the lasers are revolved slowly, the time warp will have minute effect on the instantaneous apparent frequencies of the two lasers. The total number of waves along the length between the lasers and the combiner is invariant because the combiner is equidistant from the two lasers; but the number of waves is divided differently between the two halves depending on the orientation, because on one half the light is travelling in the opposite direction as on the other half. When the rod is perpendicular to the ethereal velocity, the number of waves between laser #1 and the combiner is the same as the number of waves between laser #2 and the combiner. When the rod is oriented parallel to the direction of motion through the ether, the ratio between the number of waves on each half is maximum.

We may now formulate how the ratio between the two numbers of waves, and the ratio between the two wavelengths depends on v . Let the actual time it takes for the forward journey between bounces in a laser oriented parallel to v be t_A and the actual time for the backward trip be t_B . Let the actual length be L as above. Actual times and lengths are related by the speed of light c :

$$t_A = A/c \quad \text{and} \quad t_B = B/c$$

Substituting the equations for A and B from the equations above:

$$t_A/t_B = A/B = (c+v)/(c-v)$$

Since apparent frequency is invariant so long as the observer has the same velocity relative to the ether as the light source, and since light has a constant actual speed c relative to the ether; we may use the Doppler effect to determine the ratio of the actual frequencies for the two paths.

It is true that c is also the apparent speed of light c' if it is measured over a closed path or measured by clocks that are synchronized in such a way as to make c' independent of direction so that $c'=c$ for all observers, and that such a convention is the most natural and convenient one for synchronizing clocks at various locations; but this will not interfere with our application of the Doppler effect.

Since c is also the actual speed of light relative to the ether, and since the actual speed of the apparatus relative to the ether is v in the direction of path A ; the actual speed of light relative to the apparatus is $c-v$ along path A , and $c+v$ in the opposite direction along path B . The Doppler effect gives us the formula for the ratio of the apparent to the actual frequency for the same beam of light so that:

$$f'_A/f_A = (c-v)/cK \quad \text{and} \quad f'_B/f_B = (c+v)/cK$$

K is the effect of the time warp on frequencies measured by the traveller. Since in the experiment both beams have the same apparent frequency, we can substitute f' for f'_A and f'_B :

$$f'/f_A = (c-v)/cK \quad \text{and} \quad f'/f_B = (c+v)/cK$$

If we now divide the second equation by the first, cKf' cancels out and f_A now appears in the numerator:

$$f_A/f_B = (c+v)/(c-v)$$

The two actual frequencies are different because of the Compton effect. That is, when light bounces off of a mirror that has a component of its ethereal velocity perpendicular to its surface, the frequency of the light is shifted according to the formula for f_A/f_B derived above. This is the same as the formula for $t_A/t_B = A/B$ derived earlier; therefore, actual frequencies are related by the same ratio as actual times:

$$f_A/f_B = t_A/t_B = (c+v)/(c-v)$$

The definition of frequency gives the formulas for the number of waves along length A and length B :

$$n_A = t_A f_A \quad \text{and} \quad n_B = t_B f_B$$

The well known formula for actual wavelength from actual frequency and the actual speed of light yields:

$$\lambda_B = c/f_B \quad \text{and} \quad \lambda_A = c/f_A$$

but these equations will not work for computing the apparent wavelengths λ'_B and λ'_A . However, we may compute apparent wavelength

from the ratio of the apparent length to the number of waves present along that length so that:

$$\lambda'_B/\lambda'_A = n_A/n_B = (c+v)^2/(c-v)^2 = Z^2$$

which is the predicted Allen effect. One may then compute one's velocity from the measured ratio of $\lambda'_B/\lambda'_A = Z^2$ (if one can somehow measure that ratio) by the equivalent equation:

$$v = c(Z-1)/(Z+1)$$

By taking the ratio $Z^2 = \lambda'_B/\lambda'_A$ in different directions, the above formula may be used to compute the components of the velocity vector. Alternatively, the direction of maximum λ'_B/λ'_A is the direction of the velocity vector and the formula gives its magnitude or the speed.

One might expect that as the apparatus is rotated, the changes in the wavelength of the light cause the interference fringes to move so that Z^2 can be measured by rotating the apparatus and counting the fringes. In attempting to measure Z^2 by said method, a difficulty arises. In changing the orientation of the device, the two lasers are revolved so that their actual frequency changes. Although the difference in frequency is small when the difference in v is small, the effect this has on the number of fringes counted still depends on the difference in frequency times the duration of that difference. If the device is revolved slowly, that effect depends primarily on the component parallel to v of the laser's or clock's change in position. Thus a clock that is advanced in position is retarded in time and vice versa.

We can derive a formula for the total change in the number of cycles on a clock due to a slow change in position as follows:

$$f = f' \sqrt{1-v^2/c^2}$$

$$f^2 = f'^2(1-v^2/c^2) = f'^2 - f'^2 v^2/c^2$$

$$2f df = 0 - 2f'^2 v dv/c^2 \quad (\text{differentiating})$$

$$df = -(f'^2 v / f c^2) dv$$

Substituting $f = f' \sqrt{1-v^2/c^2}$ into the denominator:

$$df = \frac{-f' v dv}{c^2 \sqrt{1-v^2/c^2}}$$

If L is the actual distance a clock is advanced in position and T is the time it takes for that to happen, then $T = L/dv$. The total phase change of the clock, or the number of cycles it is advanced is $\Delta_t = T df$. Combining the last three equations:

$$\Delta_t = T df = (L/dv)(-f' v dv)/(c^2 \sqrt{1-v^2/c^2})$$

$$\Delta_t = -Lf' v/(c^2 \sqrt{1-v^2/c^2})$$

The observer travelling with the apparatus will measure the apparent length of actual length L . Let $H = L'$ be the apparent length between either clock and the combiner as measured by the traveller having the same velocity as the apparatus. Substituting the Fitzgerald contraction, the formula for Δ_t in terms of H is:

$$\Delta_t = -Hf' v/(c^2 - v^2)$$

The minus sign shows that when the clock is moved in the direction of v , it loses time; and when it is moved in the direction of $-v$, it gains time. (v is the velocity relative to the ether of the frame of reference in which such clocks are moved.)

In the experiment, if the apparatus is revolved so that one clock's change in position has a component along v equal to H , then the other clock has a component along v equal to $-H$. The number of fringes passing the combiner when one clock is advanced distance H and the other clock is retarded the same distance, due to the effect of the time warp on the frequencies of the two clocks, is therefore 2Δ .

Suppose the distance from each light source to the combiner is H and that the apparatus is oriented perpendicular to v . If N is the number of waves between each light source and the combiner, then $N = H/\lambda' = Hf'/c$.

Let Δ_λ be the number of fringes that are counted due to the effect of motion through the ether on the difference between forward and backward wavelength when the apparatus is turned parallel to the direction of motion through the ether.

$$\lambda'_B/\lambda'_A = (N+\Delta_\lambda)/(N-\Delta_\lambda) = (c+v)^2/(c-v)^2$$

$$(c-v)^2(N+\Delta_\lambda) = (N-\Delta_\lambda)(c+v)^2$$

$$\Delta_\lambda((c-v)^2+(c+v)^2) = N((c+v)^2-(c-v)^2)$$

$$\Delta_\lambda(2c^2+2v^2) = N(4cv)$$

$$\Delta_\lambda = 2Ncv/(c^2+v^2)$$

Substituting $N = Hf'/c$ and adding $2\Delta_\lambda$:

$$\Delta = \Delta_\lambda + 2\Delta_\lambda = 2Hf'v/(c^2+v^2) - 2Hf'v/(c^2-v^2)$$

$$\text{or } \Delta = -4Hf'v^3/(c^4-v^4)$$

If I'm not mistaken, this equation for Δ takes all of the ethereal effects into account. The first term is due to the Allen effect and the second term is due to the time warp. Notice how similar they are. One is positive and the other is negative. Aside from that, the positive term has c^2+v^2 in the denominator instead of c^2-v^2 as in the negative term. When v is small, the two terms are almost equal and Δ is very small. As v approaches c , the first term approaches Hf'/c and the second term approaches negative infinity. In other words, when the velocity with respect to the ether is small, the Allen effect and the time warp almost subtract out with regard to Δ , and as v becomes comparable with c , the time warp overwhelms the Allen effect thus making v vastly more measurable.

Notice how the first term approaches N as v approaches c :

$$\lim_{v \rightarrow c} \frac{2Hf'v}{c^2+v^2} = \frac{2Hf'c}{2c^2} = \frac{Hf'}{c} = N$$

N is the number of waves between one light source and the combiner when that number is unaffected by motion through the ether. One should expect this to be the limit because the total number for both halves is invariant. Thus as the apparatus is turned, waves are counted as interference fringes as they are transferred from one side of the combiner to the other; N being the number so available. While N is the limit on the number of fringes counted due to the Allen effect, the number of fringes counted due to the time warp is not expected to have any such limit because it is not due to a change in the apparent length or the actual length of the waves, but rather is due to a shift in the phase of their source.

A good mathematician can probably predict how these effects depend on the RPM of the apparatus if it is not turned slowly. A high RPM will make the device more sensitive in measuring small values of v . It would affect only the second term so that the two terms would not almost subtract out when v is small.

Whatever the sensitivity, it may be increased by amplifying the output

signal if the signal to noise ratio is good. For example, if the apparatus is turned slowly as in the above discussion, and if v is small compared with c ; the output may consist of a fractional change in the position of a fringe. If the light from the edge of a fringe passed through a narrow slot to strike a photosensitive device, any change in the position of the fringe would result in a change in voltage. The voltage could then be amplified and measured. Alternatively, the image of a fringe could be magnified and focussed on an electronic image sensor. The voltages from the sensor could be processed by a computer to extract the signal from the noise. Sources of noise could be minimized. Sensitivity also increases with rod length.

In summary, the Michelson-Morley Experiment showed that any observer will measure the same constant speed of light c if he measures it by taking a special distance weighted average over opposite directions by computing c from the time it takes for light to travel to a distant mirror and back as in the experiment. To measure the speed of light in one direction only might require a convention of synchronicity such as that employed by the Lorentz Transformations. One should of course expect light to have speed c in every direction if that speed has to be measured by the time it takes to reach clocks that were synchronized by the arrival of such light signals. In the proposed experiment, the clocks are not synchronized by light signals as in the synchronicity convention of Lorentz (which could easily be done by using the fringes as a source of feedback to keep the two lasers phase-locked). Such a convention would certainly prevent the fringes from moving. Instead, precise free running clocks are employed. The equations that were used by Fitzgerald and Lorentz (and by Einstein as a basis for his Special Theory of Relativity) are based on the premise that light has a constant speed relative to the ether. The same equations can be used to predict the behavior of the free running clocks. Clocks may be synchronized as suggested by Lorentz, and it may be impossible to detect motion relative to the ether by employing only such clocks; but that does not imply that such motion cannot be detected or that it is meaningless. For example, free running clocks exist.

The fact that the existence of the ether serves as a basis for the predictions of the experiments described in this article proves that the existence of the ether is not a meaningless hypothesis. In fact, one may argue well that the existence of the ether has already been verified experimentally. For example, the predictions of Einstein's Special Theory of Relativity were based at least in part on his acceptance of the Lorentz Transformations, which were based on the ether and v . The claim that v is a widely relative velocity (as in Einstein's "The 'principle of relativity' in its widest sense") is unfounded. The hypothesis that the Lorentz Transformations are reflexive (i.e. that v is the velocity of one observer relative to the other) leads to a contradiction. If v cannot be applied as a widely relative velocity without reaching a contradiction, then there must be some frame of reference that v can be defined in so that the Lorentz Transformations will yield consistent results. The most obvious way to accomplish that is to have said frame of reference be universal.

The predictions of the results of the proposed experiments in this article are based on the same hypothesis that Lorentz used in deriving his famous transformations; which is that v is the velocity of the observer relative to the luminiferous ether, which is defined as the medium through which light propagates and relative to which its speed is a constant.

In conclusion, although the theory of the ether has some degree of experimental verification in the verified predictions of Einstein's Special Theory of Relativity; it will have a high degree of verification if the predictions for the experiments proposed in this article are proved to be correct. No experiment ever quite proves a theory unless that theory has no generality and only predicts the results of that one experiment. I can't think of an experiment to verify the existence of the ether any better than to employ the predictions of the theory to measure the velocity of the ether.

REFERENCE:

- 1) OUT OF MY LATER YEARS, Albert Einstein, Citadel Press 1956, p.41.

THE INTANGIBLE ETHER

by Leonard G. Cramp

From an article titled
"Gravitation: The Unsolved Mystery"
from World Science Review, April 1956.

Michael Faraday was perhaps the first eminent scientist to suggest that gravity was directly related to electrical phenomena. In a paper which was not generally given to the public, he spoke of his belief that gravitation, magnetism, electricity, and light were in some way synonymous; that in some common denominator they found their existence and for this Faraday reached out for the "intangible" ether -- that elusive state which was said to permeate all space.

In 1886, an attempt was made to measure the velocity of the earth through the ether. Known as the Michelson-Morley experiment after its inventors, it was hoped to prove or disprove the existence of an ether once and for all (this may be considered the starting point of Einstein's relativity theory); but the results of the experiment were negative.

If there was an ether, then it must move along with the earth, which was, of course, extremely unlikely. Since then, various experiments have been made to detect an ether, but always the results were the same -- there was no tangible evidence of it.

Despite this, few of us find it acceptable to be told that all matter is surrounded by an empty void. We cannot help feeling that there is truth in the old beliefs, that, in some way, the apparent emptiness of space is closely related to matter. We reason that there is indisputable evidence to show that light behaves as an electro-magnetic wave, therefore there must be a medium in which these waves are propagated, but if there is, then the medium is intangible -- at least to our physical powers of detection.

THE STARTING POINT

Now that is the whole point, for we cannot correctly assume that outside our particular dimension of matter, no other condition exists. This then must be the starting point of our investigation: the realization that we must find a theory which will embrace the tried and proved annals of physical science, whilst permitting drastic extensions to it.

Today, more than ever, Faraday's belief

seems to be substantiated; for although most schools of scientific thought have yet to reconcile the behaviour of such phenomena as light, electricity, and gravitation, there is a good deal of experimental and theoretical work in progress which is helping to establish the fact. It is significant that although those who are carrying out the work have their own individual approaches to the subject, their conclusions are ultimately the same. It is evidence of this nature which offers just as much support and encouragement as the experimental results themselves.

THE UNITY OF CREATION

One of the most beautiful and complete works which embraces this logical conception of Gravitation is The Unity of Creation Theory, by Anthony Avenel, which, in addition to reconciling natural physical phenomena, offers an explanation for the creation of the physical universe as well. The pattern of Unity which it reveals is significant to say the least. As we unfold the theory, we cannot fail to appreciate the limitless field of vision with which the great mind of Michael Faraday was equipped. For, even in his day, there is no doubt that his beliefs would have led to the same conclusions which we now hold.

Let us, for the time being, accept this old belief that matter and all space are synonymous; that space in itself is not a negative quantity but a positive something which, for the want of a better word, we call "ether", that matter and ether are but different expressions of the same thing and, further, that they are interchangeable.

But if we try to imagine an all-pervading ether without a structure, we are immediately faced with the difficulty of visualizing the process by which ether is formed into matter and, further, we must find a theoretical process which fits the observed scientific facts.

We must find a reason for inertia and gravitation, electricity, light, and electro-magnetism, and, at the same time, reconcile them into a pattern of unity; for such they obviously are.

We must explain how it is that an intangible ether can possess wave propagating characteristics and magnetic permeability which are, in essence, physical properties. We can do all this by interpreting the ether in a different way.

A NEW CONCEPT OF SPACE

This new concept suggests that the ether does exist, but in the form of a multiple system of high frequency rays which interlaces and permeates all space and matter in every conceivable plane. So that at any single point in space we care to choose (whether it be in a vacuum or solid) there are radiating radially outwards from it "etheric" rays reaching out and penetrating deep into space. In his book Mr. Avenel suggests that these "creative" rays originate from a point or source in remote space, reaching out and bending back towards their starting point, thereby forming vast ray circles. If we examine this principle on a piece of paper it follows that in this manner every fraction of the surface encompassed within the resulting circular boundaries will be covered.

NOTICES

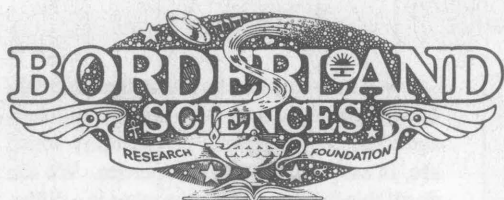
B.S.R.F. Bulletin Board will return next issue with new ideas, suggestions and far reaching conceptions supplied by our members. Thanks for all those letters, clippings, articles, etc. and keep it all coming.

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We get many requests for back issues. With over 45 years of back issues it is a formidable task to catalog and sell individual issues. We have put together bundles of available back issues from 1970-1990. That is an amazing mass of far out, stimulating, and enjoyable information you won't find anywhere else! The first 10 bundles we put together have over 60 different Journals each and are \$100 postpaid. They're available till we're out -- earlier orders will have more issues. Offer open until Dec 31, 1991.

GOLDEN C CRYSTALS

During rearranging, a small batch of **Water Jug Golden C Crystals** has appeared. These are definitely the last of the rare lithium/beryllium/gallium crystals written about in LITHIUM AND LITHIUM CRYSTALS by Haroldine (BSRF). Lithium Labs has shut its doors and when these are gone, they're gone. \$25 pkg of 3 plus \$2 P&H. Used for charging water for experiments into subtle energies. Will probably all be gone by May 31, 1991.



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NATURE WAS MY TEACHER

The Vision of Viktor Schauberger

In what was to be the last year of his life a little known man of great vision received an invitation from America he simply couldn't refuse: complete and ample financial support to carry on the work of *Project Implosion* -- a project which promised to give humanity free, clean energy while allowing for the return of balance in nature. And so, despite his deteriorating health, an elderly Austrian Forester, Viktor Schauberger, gathered all the materials of his life's work and made the trip to America -- at last Viktor Schauberger was to receive the long-overdue recognition for his awesome discoveries! Unbeknownst to Viktor however, there was no money, only a well planned set-up that kept him in virtual imprisonment until every bit of his incredible data was signed over to these Americans. Completely crushed and dismayed, Viktor returned home to Austria where he died five days later.

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