Chapter 10

LONG-RANGE FORCES

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How do compounds in the cell move?
What controls the cellular process?

Several parts of this book have alluded to the existence of long-range attraction, effective forces and their ability to control, manipulate, and maneuver the various aspects of biology. Because our treatise has been that statistical mechanics is incomplete in its description of biology, there must be some type of organized information field that accounts for the various procedures within biology. Random statistical effects cannot explain biology.

In developing a computer, we would collect all the materials: copper, gallanium, germanium, etc., and manufacture various circuits. We could not just put all of these together in a mish-mash and allow statistical thermodynamics to make the computer operate. Some type of organization must be applied to the system. Thus just a couple of electrons in the right place at the right time can provoke the needed response to allow the computer to control, transfer and recover its information. The computer is under an energetic control model in which electrical forces of attraction and repulsion are used in a process that accounts for the dynamics of the computer's ability to take in and manipulate data. The cell acts as a mini-computer, and controls the various aspects of manipulation through different matrices.

From Chapter 9 we know that mass, momentum, energy and charge can be controlled through a process of metabolism and reproduction. This very sophisticated system we call life is a finely sophisticated system that can control the processes needed for metabolism and reproduction. The control over the quasi particles in the cell must be such that it is pervasive, nonlocal, and system responsive. The molecular distances are emense comapred to the size of these quasi particles. The subspace Nelson effect is limited to indeterminant levels so another system of control with more meat is necessary. Such are the long range control effects.

Thus oxygen in the air of the room around us is under thermodynamics, or Boyle's gas laws. As it bounds about, the temperature from one molecule can be transmitted to another when they make their collision. This is a statistical mechanical operation falling under thermodynamics and entropy.

As the oxygen crosses the alveoli barrier and is absorbed into the cell, it leaves the world of statistical dynamics and gets into a controlled process. Like taking copper from a mine and making it into the wires for our computer, it now is becoming part of an organized process and must be in a specific location to allow for its best utilization. As covered in Chapter 4, it should be pointed out that there is an organization beyond mere statistical mechanics that occurs even in nonliving systems. This seems to follow a certain pattern that has been explored by fractal and chaos theory in the 1980s and 1990s.

So there appears to be a strong tendency of matter to disobey, or follow a different type of law than statistical mechanics can describe, even in nonliving systems. But in the living system there is an extra gap, an extra jump into a very controlled process, allowing for metabolism and reproduction. This process can be described in quantic terms.

As we have pointed out in other parts of this book, the lock-and-key phenomenon of how a receptor site on a cell is stimulated by a certain chemical has intrigued chemical pharmaceutical companies for years. Under a statistical mechanical dynamics we would have to put lots of keys into a situation so that one of them could have a good chance at hitting the lock. But as we have pointed out several times, biology does not operate by statistical mechanics. Thus the keys of biology must reach their locks via some other process distinctly different from randomization. There must be an attraction, and often a repulsion, that controls the processing of these elements in biology.

Often cells might have one molecule of zinc. Different processes must be guided because of the severe limitations of the *in vitro* number of molecules; whereas if we look at nonliving systems *in vivo*, a tremendous number of certain enzymes are needed and a tremendous number of certain minerals, as well.

In sinthetic chemistry the elements are deprived of the life force or photon reactivity needed for action. Thus lots of keys must be enamored into a system in order to find the lock. However, in biology a control process ensues where our key functions energetically. The key finds the lock via photons. This control process can be interpreted through long-range forces and vionic radiation, described by Dr. James P. Isaacs.

In his book on "Complementarity of Biology", Dr. Isaacs writes that "a prediction may be made that non-Gaussian conditions from molecular motion have an expression of critical significance to biology in the generation of long-range specific additive forces. These forces have the required characteristics for bridging the gap from protein and nucleic acid molecules to macro-molecular aggregates, or vions, to combinants of vions and to combinants of cell forms of tissue in organisms."

In 1957 Hoffman stated, "One speaks of long-range and short-range forces, depending on the phenomena concerned. But the basic problem is how forces come into being that move parts of a living cell relative to one another. The movement is not merely a random wiggling; there are precise and strong forces producing them, and these forces have special properties. The observed biological phenomena, at times, point to forces not yet measured or studied by the standard molecular biological physics." These long range forces are a reaction of certain photon transfers, magnetic action, and perhaps even a variance of the weak and strong forces of the nucleus; a biological counterpart.

The processes of cellular life, given the small size and amount of certain proteins and enzymes that exist there, could only be explained through long-range forces. The existence of the quantum electrical force and its prediction of the dependency on photonic radiation and absorption is the new answer for biology and the description of the forces that could make accountable and understandable the interaction of life.

In 1937 and 1942 London postulated that these forces might arise from induced dipole interactions of fluctuating electronic charges within these cellular systems. This is a variation of one of the forms of Van der Waal's forces. London describes a quantum mechanical connection with these forces, showing how at ordinary temperatures the oscillators could exist, transmit and receive these types of information. London found that these forces would fall off very rapidly with distance, to the seventh power. This is similar to the inverse square law: when we move further away from light, the power of that light diminishes by the inverse square. Here, instead of the square, this would be a power to the seventh.

$$\text{Force} \;.\; 1/R^7 \quad R = \text{Distance}$$

Thus from the microscopic electronic polarizability, biology can use a dipole to induce another dipole into a specific action.

London also found that these small forces that fall off so rapidly could also be additive; that is, force A added to force B could render force C, which would be more powerful than forces A and B.

Derjaguin, Abrikossoba, and Lifschitz found that through quantum electrodynamics they could account for the dipole antenna of the molecules and their ability to radiate and absorb these virtual photons. These interactions will allow for a force of attraction that we can calculate through knowledge of microscopic electronic polarizability.

A key in this type of transmission dipole antennae forces is on the ability of these forces to remain coherent; that is, within the correct phase for maximum interaction. Thus the forces will not be indefinitely additive. They are additive in a small amount, and as we approach statistical mechanics the forces will not be additive. The distance of the effect is correspondent to R being greater than or equal to the wave length divided by two, for simple vibrational molecules or atoms.

Spheres - R^{-1}
Rods - R^{-2}
Platelets - R^{-3}

Large molecules, having a large number of vibrational oscillators, can give attractive forces that are greater due to the electronic polarization at moderate distances. The total energy of attraction is ten times the Boltzmann constant times the absolute temperature; the formula 10KT, where K is the Boltzmann constant and T is the absolute temperature.

$$E > KT$$

This is for oscillators that are polarized in the classic regions. Also where E is less than KT, and where E is equal to KT, vibration rotation modes will vary in the infrared region.

The attractive distances of the electronic polarization will also be reflected, where spheres will vary as R^{-1} broads as R^{-2}, and platelets as R^{-3}. This is the simple variation of how the more spherical and tightly packed the

items, the further their force of attraction will reach. The relationship of B is thus accountable to the power of electronic polarization and relative to the energetic values of the external electrons.

Proteins are shown to have a very large number of states of these Van der Waal forces, and these Van der Waal forces are considered to be specific in that the molecules possess such a wide range of polarizabilities over a wide range of vibratory modes. Also, there could be a strong individuality in the type or the extent of an attraction force or repulsion force implied by an activated dipole. In a universe where irrational numbers are significant to primary intervention, determinism must take a back seat. The effects of B, R, F and other irrational numbers dictate an irrational aspect of the universe.

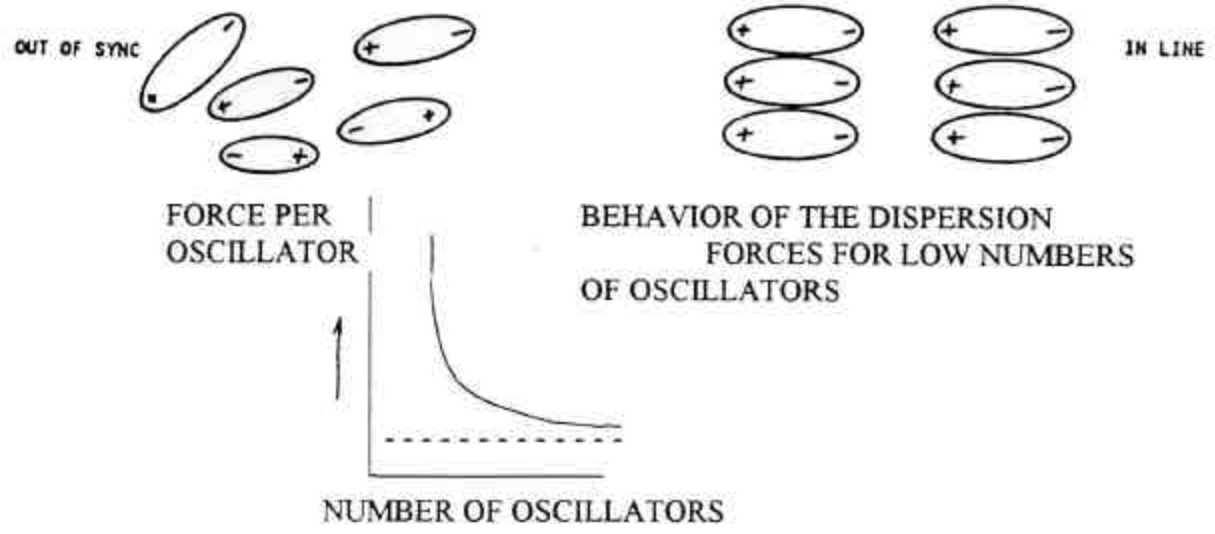
Isaacs speculates that if we extend Lifschitz's treatment of long-range radiators, it would give us forces and components that would fall off slowly and be extended over very long distances. Thus a polarized, electromagnetic radiation could have a longer range of extension to act as these long-range forces occur and are transmitted through greater distances.

Isaacs relates that inside the vion there are many variables that can add flavor to the variants of the long-range force: one, the smallest of the volume; two, the largest of the molecular sizes; three, the smallest of the molecular numbers and four, the limitation of the time intervals. All will contribute to these forces in biology.

Thus we can see that these Van der Waal dipole forces have their roots in the uncertainty relationships, and we will not be able to measure accurately all the conjugate variables that arise from these energy states. If we try to examine energy and time, we will not be able to measure the variables exactly. The inequality will show us, from the Heisenberg uncertainty principle, that the accuracy of knowing energy times the accuracy of knowing time is greater than or equal to Planck's constant divided by 4B.

$$) T @) E \$ h/4B$$

If we look at a living situation in which there are a small number of oscillators, the amount of energy will not fall under Gaussian statistics. From our formula for uncertainty, Planck's constant will become a factor. If we increase the number of oscillators, Planck's constant then will affect this by showing a decrease in the amount of force.



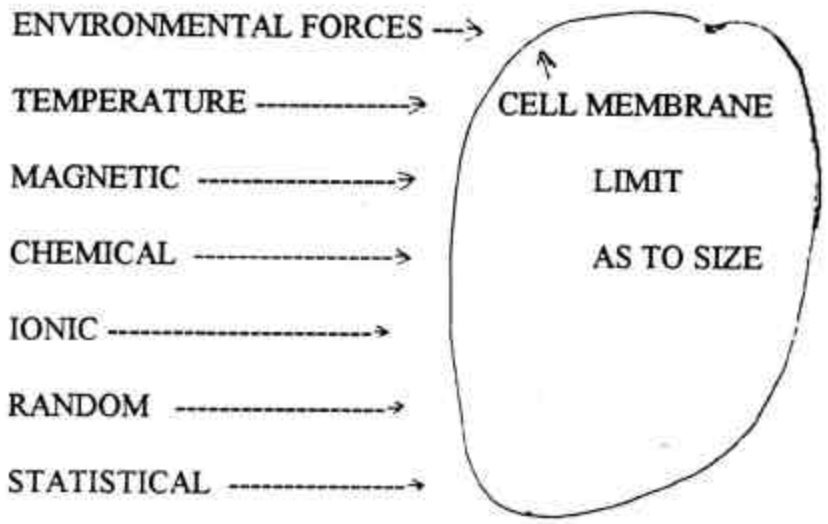
Thus we can see that as we increase the number of oscillators, we decrease the amount of force *per* oscillator. The inverse is true; as we decrease the number of oscillators, we increase the amount of force per oscillator. This is biology's way of compensating for small systems and allowing for life within a cell; *maximum utility with minimal mass*.

Isaacs remarks that "...the existence of directionalizing long-range bonds in the biological process does not eliminate the need for an important operation of short-range bonds of the covalent, ionic, and hydrogen types, or even shorter length Van der Waal's bonds."

As we develop more long-range effective forces, we do not do away with the need for the Van der Waal dipole effects, which are of short distances. These are still needed for mid-course correction modalities and end-system regulation.

Here we have some of the forces that help to hold the process of biology together. Biology fights against the thermodynamics of nonliving systems. This is the fight we call life. If an organism should die, it would succumb to the statistical mechanics and fall back into entropy and fractal polarity.

All the molecules, and atoms within a molecule, will be driven at their periphery by the forces of room temperature, the environment, and other statistical dynamics. These forces are trying to dispel or dislodge molecules and atoms from their balanced state, and the internal, long-range forces and bonds of life, as well as the short-term bonds of dipole interaction, are fighting to hold these atoms and molecules together.



Thus as a unit of living molecules grew larger and larger, there would come a certain point where it would be very difficult for these forces to hold that process together. Thus we would find that there is some range or maximum size that these molecules might attain. Each macro-molecule will develop its size to the functionality of the components within that system.

Isaacs makes the postulate that there are other functions of the protein portions of enzymes, other than that which is providing just a skeleton to the enzyme. Isaacs then proposes that the rest of the protein provides a large surface area for the impact of solvent molecules, which have high kinetic or thermal energy. This energy is absorbed by the protein and allows it to initiate the reaction. We must understand enzyme threshold energy.

As we have outlined before, to initiate enzyme action we need to have a certain mass, momentum, heat, charge, or other form of electromagnetic force necessary to allow this to happen. It is Isaacs's contention that this large protein complex attached to the enzyme can act as a receiver of this type of energy, and help to initiate the various reactions needed.

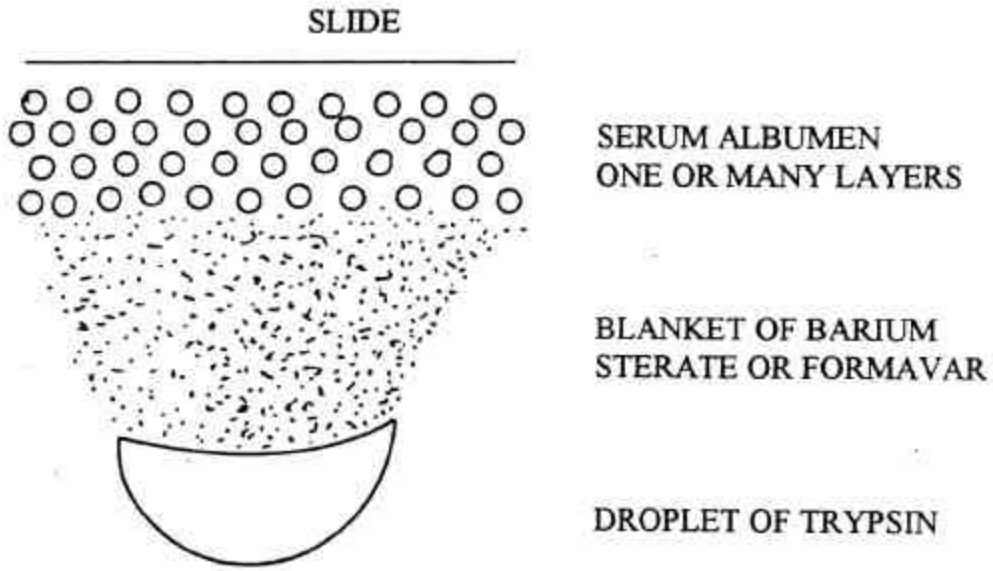
The long-range coupling of these forces that exist between their vibratory modes can be seen to provide and access a communication route favorable for transmission of activation energy between the protein surface and the active cell. Such an increase in the effective circuits of an active site would greatly increase the rate of the reaction compared to the situation in which the surface of substrate would be only the receiver of the impact of thermal colliding reaction.

Thus many students of biology have found that the surface area of enzymes is not sufficient to explain its action regarding the large number of catalyzed substances. It is Isaacs's postulate that the protein part acts as an antenna to absorb energy, and also to play for position, as the key moves toward the lock. And just as the key moves toward the lock (via the photon receptors of the human entity) these protein receptors also have a photon transmission and receptive capability, which allows for its key to find the lock. Thus the energy of reaction, instead

of being degregated by heat, or degregated *to* heat, can be made available over intermolecular coupling to serve as the activation of the enzyme reaction.

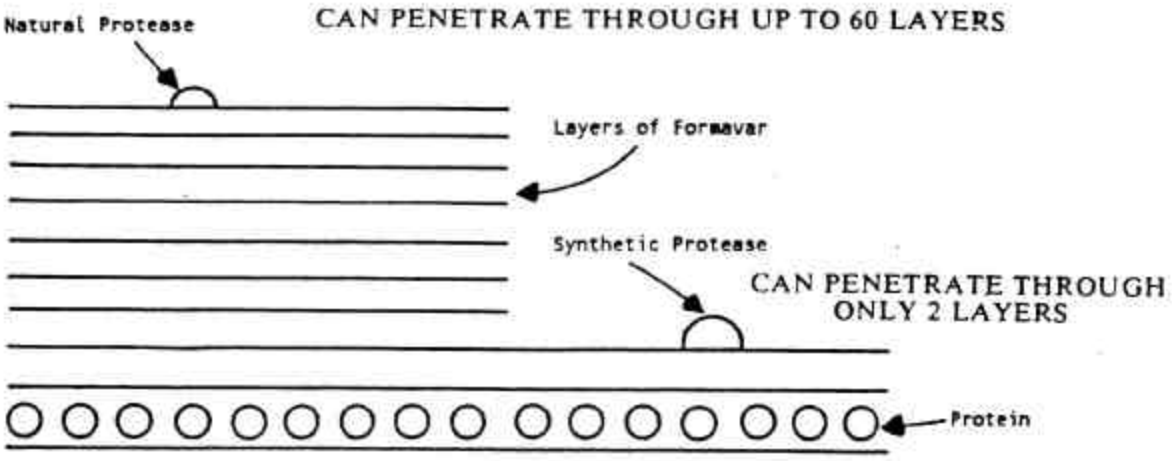
As we have seen, proteins will increase dipolarized effect when in smaller numbers. Thus we can see how a small amount of an enzyme performs differently from a large amount. We can see the need for an *in vivo* analysis rather than *in vitro* in our pharmaceutical development.

Rothen (1948, 1950, 1959, 1962) performed a series of careful experiments that are meant to show us the existence of long-range forces. By using different compounds and measuring their reaction through certain films, Rothen found that there were certain conditions in which enzymes could produce reaction, even though they were separated through many layers.



LONG-RANGE FORCE OF TRYPSIN ON ALBUMIN
THROUGH LAYERS OF AMORPHOUS MATERIAL

In one study Rothen put a layer of serum albumen over a glass slide. He covered this with blanket layers of barium sterate, or formavar. On top of the blanket of formavar he put a droplet of trypsin. The enzymatic effect of trypsin on albumen is well known. The effect of the trypsin on the albumen through the layer of formavar was proven effective. The minimum thickness of the plastic blanket required for total protection from the trypsin's effect on one layer of albumen was found to be twenty angstroms. He also found that it took over six hundred angstroms of formavar to protect six layers of albumen.



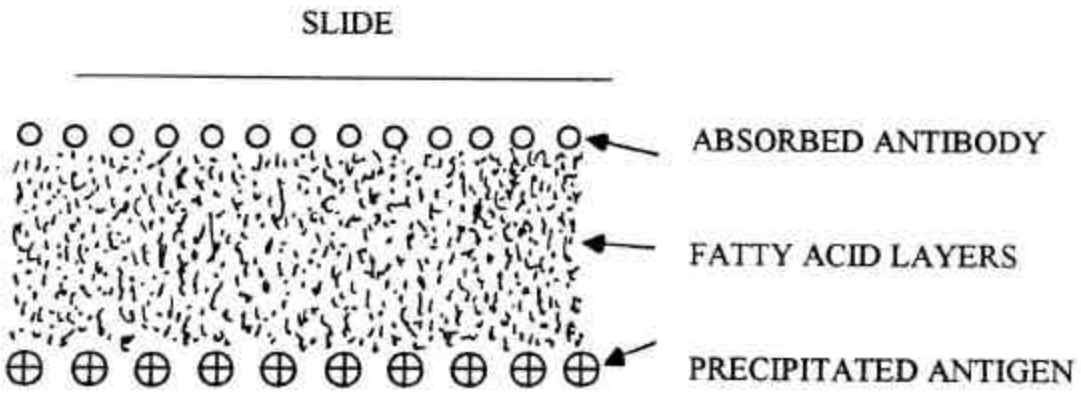
Thus the action of the trypsin depends on the number of fatty acid layers below the protein layer.

Rothen also found that there were different effects of certain qualities of trypsin, and that natural trypsin could force its effect through layers of formavar even over one thousand angstroms thick; whereas sinthetic trypsin could not force itself through even fifty angstroms of formavar. Rothen tested for the residual albumen on the experiments with a titrating antibody preparation to the albumen layers. This allows for one of the first cases in which we can see the effect on albumen by trypsin at a distance without chemical contact.

Rothen's study is one of the first that accounts for a true accountability field that is much bigger in natural biology than sinthetic. Here we can see that our natural trypsin has a much larger photon field and dipole attraction than a sinthetic substance. This field was found to be isolated in the virtual photon field coming off the natural agents. The high-tone natural agents are made with a resonant outer layer of electrons that are capable of producing this powerful virtual photon field.

In 1962 Rosenburg related another experiment about the relative abilities of long-range forces. He accounts that long- and short-range can be demonstrated as having an effect through fatty acid layers. These forces act by successive polarization of the adjacent molecules, and can have effects over considerable molecular distances. Rosenburg found that serum fractions, surface charges, basic peptides, divalent ions, electric double-layers, Van der Waal's forces and others were considered, but still were inadequate to account for the long-range forces found in his experimentation. In Rosenburg's experiment he laid out a different number of model layers of a fatty acid. There was an absorbed antibody on the slide and a precipitated antigen separated by layers of fatty acids.

LONG-RANGE ANTIGEN--
ANTIBODY PRECIPITATION THROUGH FATTY ACID LAYERS



Here, antigens could have an effect on antibodies that could be detectable with precipitated antibody results. These effects were measured through layers of fatty acids. This type of experimentation brings into consideration the fact that antigen reaction and surface receptor triggering of antibodies by antigens might happen through long-range forces, and might not necessarily follow statistical mechanical rules. This would account for how sometimes so small an exposure to an item can induce allergic activity, as a small amount of an item might set up a cascading field that would cause difficulty and possibly a cascade toward the allergic systemic reactivity of antiphalatic shock. These and other speculations of an energetic medicine, or a photonic activity of cells, have been largely rejected by a chemical society and a chemical pharmaceutical concept that is contingent on sinthetic chemistry.

In 1957 Hoffman related that the only way of properly explaining the pairing of chromosomes was through long-range and specific forces. Statistical dynamics could not possibly explain this type of phenomenon, even in an open system. Specific pairings of these chromosomes in early meiosis states of animals such as the diptera fly have shown a reversal of such forces, and there is indeed repulsion and attraction that guides the pairings of the chromosomes. Electrostatic and short-range forces cannot be used to totally explain this phenomenon. Additive long-range and specific forces that offer directionalized influence have a more likely possibility of explanation. The long-range forces are coherent, and thus must be directionalized. Since they are directionalized, they could bring a specific item to a specific field for a specific event.

Electrostatic and short-range forces are incoherent and extend in every direction equi-potentially. These long-range forces, being coherent, are directionalized and can be used to direct specific pairing of the chromosomes. Gegion (opposing positive and negative ions) effects cannot be ruled out as to their possible effects in guiding specific reactions. Weiss and Mascona found that the reaggregation of cells, which happens with hydras, sponges, and other mammalian organs could eloquently be explained through these long-range specific additive forces.

One other phenomenon that would be very eloquently explained by this process is a part of synchronization of individual wave movements between undulating organisms. This happens with viruses such as spermatozoa, and even within cells of the body, such as the peristalsis action of the large intestine and the cilia action of the lung. One only has to feel the bottom of a starfish or a sea dollar to see the effects of the muscles and how they react through these types of cilia. The effects of long-range forces could also account for this, as it turns one cell on, then off, then on, accounting for the pattern of behavior.

Another extreme example of where long-range forces could be applied to biology is in the phenomenon of the *acupuncture meridian*. The idea of an acupuncture meridian system running through the body is one that is indeed intriguing, and could only be explained through long-range forces. Molecules or acupuncture points are stimulated by what happens to one along an entire meridian chain. It must be pointed out that this phenomenon of what happens at the acupuncture point is a phenomenon of coherence. Activity at an acupuncture point does not spread out incoherently in all directions; it follows the acupuncture line of the meridian.

It must be pointed out that Vega practitioners and others made their mistake in thinking that the body energy field has equi-potential in all directions, and that one point could give us all the information. This is ludicrous in light of the coherence of the long-range forces, which is directionalized. What happens to an acupuncture point is directed down the acupuncture meridian, and *does not* proceed out like ripples from a rock thrown into a lake. This is the coherent part of biology, in the quantic direction of the energy force.

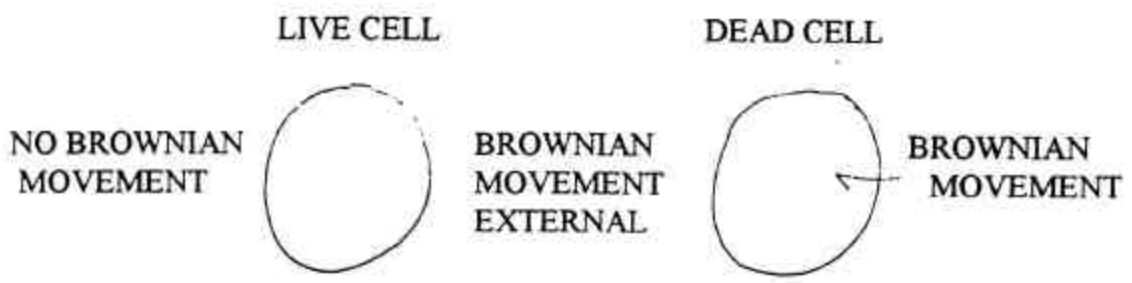
Thus biology has a strong, coherent factor. What is found at the liver meridian might not be found at the kidney meridian or the lung meridian. *There is definite directionality*, and individuality of meridians. These long-range forces, in their coherent factor, could account for the phenomenon of the directionalized acupuncture meridian system. Vega systems exist because of time savings. Any Vega practitioner depends on the partial gestalt field effect of information theory. Information theory relies on two components:

1. Overall gestalt effect (endocrine)
2. Directionalized specific effect (exocrine)

To depend on one or the other is to ignore biology's truth. Vega practitioners save time, but sacrifice effectiveness. Our patients deserve more.

Different types of slime bacteria or slime mold, such as myxobacteriales, cystophaga, navicula, oscillatoia algae, fungi, and many other bacteria have different communal effects. These effects can occur as the slime mold takes in a very large state in which all the cells get together. Even though they are independent, they share some information, and move in pursuit of food and/or water. This is another phenomenon that can be accounted for via long-range communicative forces.

Isaacs recounts another paradox that can be explained in these long-range forces: the paradox of the maximum viscosity that bacteria suspensions have when they approach an isoelectric point. Colloidal solutions, however, have minimal viscosity when they are near the isoelectric point. Why do bacterial suspensions have maximum viscosity at the isoelectric point? The bacterial sizes are approximately equal to that of the colloids, and the suspensions collectively demonstrate many similar properties, such as light scattering effects, Brownian motion in the external fluids, viscosity, increased by suspending the media; magnetism in the electric fields, and agglutinization by salt air dehydration.



The absence of Brownian mo tion within living cells, along with the maximal viscosity of bacterial suspensions at the isoelectric point, both point to a fundamental fact: that the basis of the physical nature of protoplasm is not encompassed by the laws of ordinary chemistry.
Long-range forces factor in, but offer little advance for the scientific explication without some appropriate and nondualistic theoretical grounding in quantum biology.

Another phenomenon that can be explained by these long-range forces is the phenomenon of acceptance or rejection of transplant tissue. When tissue is removed from the human body and put into a different place within the *same* human body (plastic surgery), the new cells arriving in the new area sometimes can make rather severe changes. This is because they are getting a different long-range factor, or long-range force, supplying information to the DNA and RNA as they split and make new cells.

The two criteria on which this is based are: one, volume of cells transplanted from one area to the other; and two, the health of the organism in making enough energy to supply the long-range forces that can reacclimate the new cells to their new function. If we take cells of a tremendous difference, such as bone cells to epithelial, this would take a lot of energy to make the change. But epithelial cells can become skin cells very easily.

In the idea of transplants from one item to another we also account some different phenomena. The Nobel Prize in Medicine in 1990 was received by a group of practitioners, including a doctor in Seattle who found an easy way to transplant certain cells. The cells easiest to transplant were those of bone marrow.

These bone marrow cells are highly responsive, since bone marrow is the father of all of our blood cells. There, stem cells are made, which are later determined by the body to become red or white, or whatever type of white blood cell is needed by the body. The bone marrow is also a lymphatic in part of the infection system, and thereby highly responsive. We can look at it in light of the Isaacsonian matrix and see that they probably are very in tune to various environmental factors, and as such can make responsive changes in metabolism, thereby being easily transplanted.

Recently sinthetic chemical companies have used these Nobel Prize-winning theories to their advantage. Chemotherapy destroys cancer by destroying cells. It is the hope of the doctor that chemotherapy destroys the cancer cells before it kills the patient. Now, with proof that bone marrow can be transplanted safely, it is the medical hope that larger amounts of chemotherapy can be utilized. This backward trend of medicine is medieval in design and unnatural in utilization. There is ignorance of prevention, natural techniques, and requirements for safety. This is not to say that this chemotherapy is not needed in dire circumstances, but when medicine's efforts are 90% focused on heroic intervention prevention, early detection takes a back seat.

Other cells having much more difficulty being transplanted are cells of the liver, kidney and brain. These more sophisticated cells are not as responsive to the cellular environmental activity as is the immune system. Thus they take a longer time to acclimate and are more likely rejected by the body.

As we master and learn more about long-range forces, we will understand why these transplantations are increasingly difficult. As we learn more about the medicine of the body and the mechanism of biology, we will see that transplantation will become less needed. We will develop different medical techniques at early-detection prevention. Rather than waiting for organs to go so far along in the pattern of disease, to expire and die, these organs and cellular systems can be cleaned, fortified and renewed and brought back to life by good nutrition, behavioral medicine and homeopathy.

The needed transplants will still have only a one-in-a-million chance of total success, but as we learn more and more about the long-range forces and the electrical nature of biology, we will find the answers for transplantation (total success meaning return to the quality of life previously possessed). This leads us to an account of mitogenic radiation, or what Isaacs has accounted as "vionic radiation". In Chapter 8 we recount the duplication of the experimental work done by the Gerwiches. Now let's explore it in a little more detail, in the light of some other research.

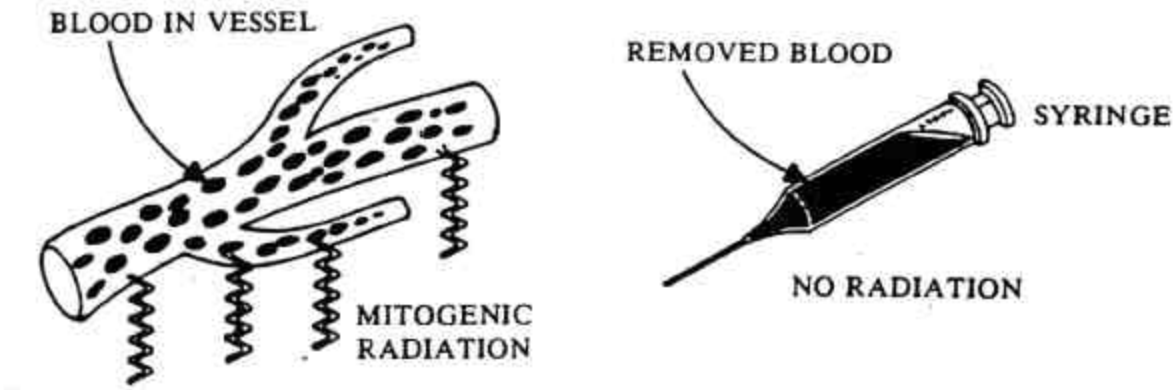
Isaacs accounts in his research that the vionic radiation might differ from that of mitogenic radiation, and that they are seemingly equivalent, But there might be some interesting differences on deeper introspect. The differences in each will be outlined later in this chapter.

Rahn wrote a very interesting treatise on mitogenic radiation. He found that the growth rate of yeast and bacterial cells was specifically responsive and very sensitive to mitogenic radiation. He found that the radiation appeared only from living organisms in quartz vessels. He concluded that there were ultraviolet capacities to this radiation. He observed that similar emission from oxidative reactions of proteolysis also was enhanced by diffuse daylight. This could provide the backdrop or the bath of photons needed for activity. He found the wavelengths to be between 1,800 and 2,600 angstroms. His original explanation for the emission was that it was a leak of activation energies. The growth rate of bacteria and yeast can be stimulated, and the intensity of the radiations moderated. The wavelength had to be below 2,600 angstroms to accomplish this.

Process	Mitogenic Wavelengths in A	
Oxidations	2200 6 2280 A	2280 6 2340 A
Sugar Fermentations	1910 6 1920 2120 6 2180	1930 6 1940 1950 6 1960
Nuclease	2150 6 2160 2280 6 2290 2350 6 2360	2240 6 2250 2460 6 2500
Phosphatase Cleavage	2010 6 2060	2090 6 2150
Proteolysis	1980 6 1990 2030 6 2050 2110 6 2130 2300 6 2400	2410 6 2420

High amounts of the radiation failed to enhance or retard the growth. The distance between the emitter and receiver of the radiation was two to three cm in air, periodically increasing to ten to fifteen cm in tissue. The following tissues were found to be good radiators of mitogenic radiation: cells in culture, cornelial epithelium of frog, sea urchin cells, and brain, blood and active muscles of most adult animals. Intermittent rhythmic and resonic radiation seem to have more effect than just continuous radiation. The rate of conduction of the mitogenic radiation in the frog sciatic nerve was thirty meters per second. Muscle tissue radiated five times more mitogenic radiation during work, or when greatly fatigued.

Blood, when removed to the outside of the blood vessel, lost its radiating power very quickly, but while inside the blood vessel, blood was a very powerful irradiator of the mitogenic radiation. Perhaps since the red blood vessels of blood have no DNA, this might just be a resonant effect; and once removed, without the backdrop of the radiation, the blood might lose its resonating effect in developing this mitogenic radiation.



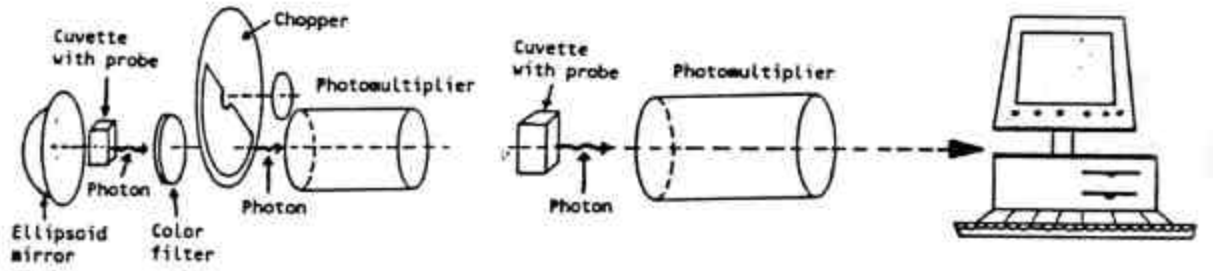
The myelinated sheath was found to be transparent to this radiation, where skin was found to absorb and block some of its transmission. Lecithin scattered the radiation. The glia cells of the brain seemed to produce some scattering, yet periodically focused the radiation for a diffusion effect.

The lag phase of bacteria and yeast was found to be the phase that had the maximum response. When irradiated, sea urchin eggs could develop into abnormal larvae. This seems to involve the stimulation of early-stage

growth, with distortion of the larvae. Lead glass absorbed the radiation; quartz did not. Glass with a layer of paraffin or fatty acids did not absorb the radiation.

Isaacs remarks that other physio-chemical detectors of mitogenic radiation are: the Liesegang rings, the decomposition of hydrogen peroxide, flocculation of colloids (gold sols), and photoelectric counters.

In the research of Dr. Nelson, photoelectric multipliers and photon counters were used to count photons and to produce the effects needed to measure mitogenic radiation photon by photon. This was found to occur only in the backdrop of a needed amount of photon bath, supplied by infrared radiation ala heat of room temperature variety.



Rahn found that the only diseases that prevented blood radiation were cancer and tonsillitis. Other diseases were found to actually stimulate a different pattern in mitogenic radiation. Disease may be an aberrant electrical pattern of photons as a response to energetic challenges.

In our description of disease we outline how the flow or pattern of health is disrupted by the primary causes of disease. These are all stimuli that could produce field problems, and thus alter wave patterns.

	SELYE	**NELSON**
1.	Stress or alarm reaction	1. Primary causes of disease:
		Stress Lack of Awareness and Education Mental Factors Heredity Allergies
		Trauma Toxicity Pathogens Perverse Energy Deficiency or Excess of Nutrients
2.	Stage of resistance and adaption	2. Functional Disturbance
		3. Organic (Physical)
		4. Death or Irreversible Disease

Thus the primary stressors make a bifurcation point for the body (stress stage). Disease is then only an attempt by the body to produce a more adaptive pattern to stabilize its reaction to the disease stimuli. If the cause of disease is abated early enough, the organism can return to its healthy pattern. If the cause is *not* relieved, the adaptive pattern deepens (adaptation stage). Finally the organism may lose its struggle with disease and expire (exhaustion stage). This describes the stages of Selye in energetic terms.

Wounded plant leaves and wounded parts of most animals radiate this mitogenic radiation. Tadpole tails were found to emit high amounts of this radiation, and it is speculated that this radiation could be used to rebuild the tadpole tail if it were removed. The stimulation of what happened after removal of a wounded tadpole tail was found to be periodical, and varied in a twenty-four hour schedule. This offers hope for human regeneration through energetic photon fields. Bacterial cultures could affect each other and retard or accelerate growth. The growth rate of yeast was affected by menstrual blood radiation. Yeast showed enormous vacuolization, hyperplasia, and giant cell formation. Other yeasts showed abnormal forms. Some bacteria were affected by the menstrual blood radiation, and some bacteria were not affected by this radiation.

Malignant tumors were found to irradiate very strongly, whereas benign tumors irradiated very weakly. However, the blood from patients with no malignant tumors irradiated very weakly; whereas the blood from patients with malignant tumors irradiated very strongly. Could cancer rob irradiation power from the blood and put it into the tumor? The dead or necrotic parts of malignant tissues showed strong proteolytic radiation. The main growing part of a malignant tumor, however, emitted the glycolytic radiation.

Frequencies of Radiation Emission

SPLEEN CANCER - 10^{10} *Hz*

LUNG CANCER - 10^{9} *Hz*

BRAIN CANCER - $10^{9.5}$ *Hz*

NERVE CANCER - *10 to the 8th hz*

INTESTINAL CANCER 10 to the 6th hz

LYMPH CANCER - $10^{869.5}$ *Hz*

The conclusion was that a growth-stimulating source of radiation could be removed from blood and concentrated in the tumor. Another conclusion was that cancer is frequent in old age, where blood radiation is lower. Blood radiation could prevent tumors. Such a machine is the Quantum Med C.I. that can help reverse cancer with energetic stimulation.

Sources of mitogenic radiation can be contracting muscles, oxidations of biological compounds, sugar fermentation, nuclease activity, and phosphate cleavage.

Wadsworth found that the following values were valid for radiant wavelengths of photosynthetic radiation:

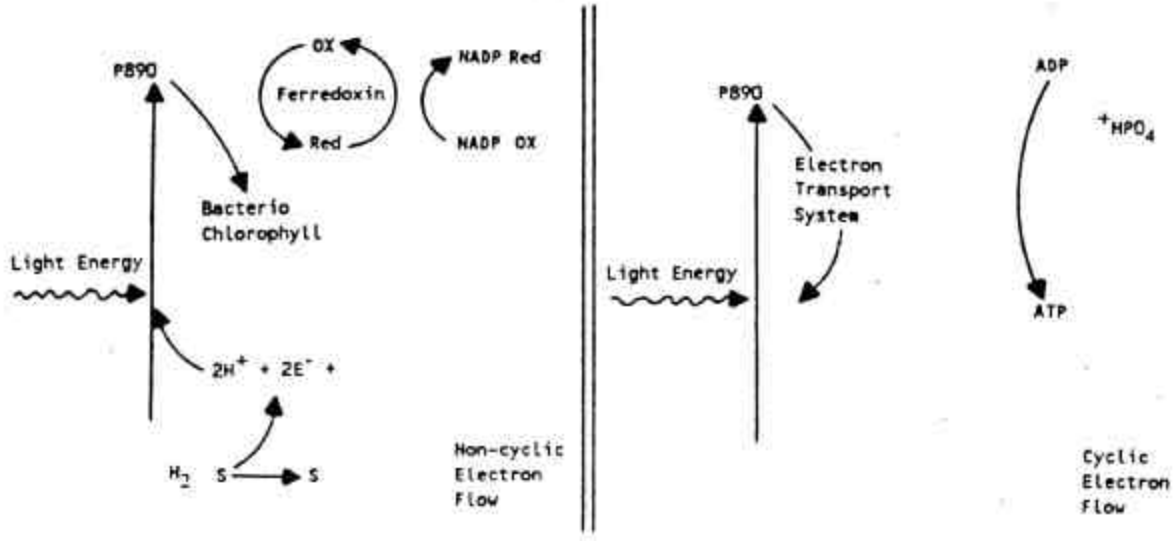
Chlorophyll	A)	-	Algae	-	6750 A
Chlorophyll	B)	-	"	-	"
"	C)	-	Brown Algae	-	6400 A
Bacterio-Chlorophyll		-	Bacteria	-	7700 A
Cartenoids					
Carotenes		-		4000 - 5000 A	
Xanthophyls		-			
Biliproteins					
Phycocyanin		-	Blue-green algae	5000 - 6000 A	
Phycoerithin		-	Red algae		

ENERGY ASSOCIATED WITH LIGHT OF VARIOUS WAVE LENGTHS

Wavelength	Color	Cal/Einstein
3,950	Violet	71,800
4,900	Blue	57,880
5,900	Yellow	48,060
6,500	Red	43,480
7,500	Far Red	37,800

Rahn found that his detectors had to be in correct biological phase. Some of the detectors that he used in his work were bacteria and yeast, in the lag phase of growth in the culture.

In a 1940 book called "Living Light", Harvey talked about the detectable radiations from living materials. He criticized mitogenic radiation on several major points. His technology did not include the idea of coherent radiation or the idea of the virtual photon. In light of those two developments, today Harvey's criticism would not hold up; we would find that electromagnetic radiation is happening through mitogenic radiation factors.



It was very difficult to measure this mitogenic radiation with the equipment existing in the 1960s and 1970s. Our new equipment allows for better insight, but still mitogenic radiation seems to be best detected and emitted by living organisms.

Royal Lee, in his book on "Protomorphology", also reports research on mitogenic radiation developed by many other practitioners. Isaacs accounts for five quality experiments, and all the experiments were duplicated by this researcher. This mitogenic radiation is something biology will not be able to ignore for long.

This researcher, Nelson, has applied for a patent of a device that will count and multiply the photons coming off the human body. It will be able to receive and interpret the mitogenic and vionic radiation released by the human body. At the time of this writing, the patent for this device is still in application, and thus real intricacies of design and utilization should not be released. Suffice it to say that mitogenic radiation will be the true utilization of theories of the future.

The advent of nuclear magnetic research is finding that there are photons that come off the body and can be used for imagery and information. The pinnacle of this photon release comes in the form of the mitogenic radiation, which comes off the body without having to be induced by any sinthetic means. This information will tell us about many factors of organ development and parasitic control, as we will be able to find the spectrum and sort out *from*

that spectrum the various types of diseases and also the various types of infectious conditions and other organisms that might be hybrid within the human body.

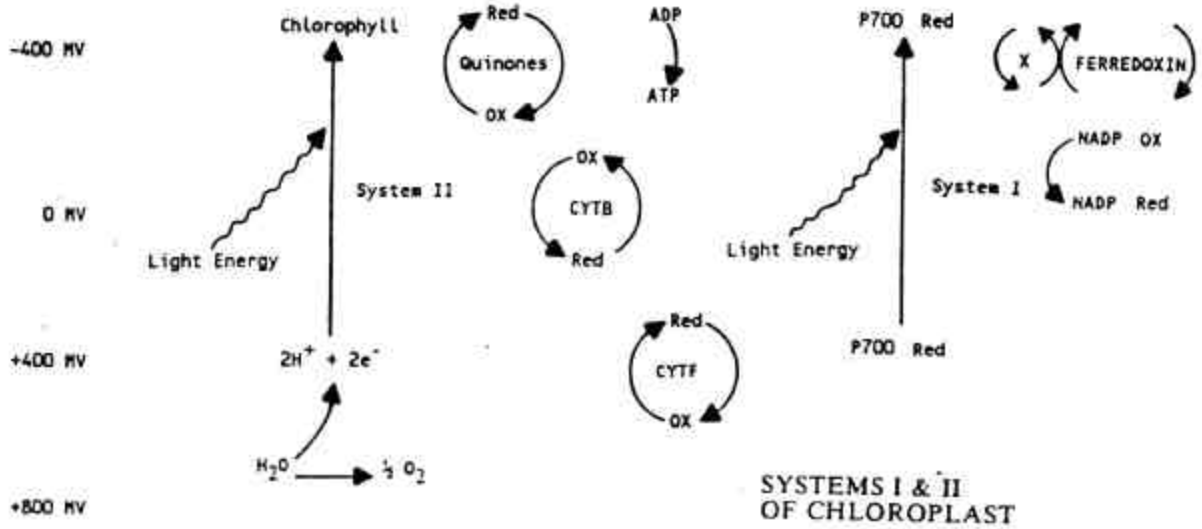
In Chapter 8 we can see how mitogenic radiation exists through the infrared spectrum, visible light, and a touch of the UV. This helps us to understand how biology existed and developed in the light of a warm-temperature climate on the planet, in the presence of the full-spectrum light of the sun.

In Chapter 6 we outline how the virtual photon could be developed, captured and utilized by biology, allowing for the development of this mitogenic radiation. The organization ability of biology (because it falls under quantum rule, not statistical dynamics) allows for the existence of this control, and thus allows for the development of an increased mitogenic radiation, or focused photon field differing from the unfocused, incoherent field of other entities.

Thus biology has been found to have an information state of extreme sophistication, going beyond the type of photon transmission that we can accomplish with radio, television and other means. Thus as Isaacs says, "The long-range forces of vions are exchange forces. They arise from an uncertainty in position and momentum of time and energy through a large molecular motion that is essential for living processes. These exchange forces help to hold the vions together. The interactions and exchange forces of large molecules in vions have a mechanistically indeterminate basis, which involves exchange of virtual photons [vionic radiation]." Note must be taken to distinction that vions may also be excited and emit photons, which is vionic radiation. Mitogenic radiation is a byproduct of DNA activity; whereas when the entire vion radiates, this is called *vionic radiation*. This is an emission of the photon or the entire vionic oscillatory field. Thus the vion might act as an amplifier of the mitogenic radiation to produce a vionic radiation of the oscillatory nature. Thus we can see how one cell can influence another. The photon is essential for explaining quantum theory. Since our quantum theory is the basis of our quantum biology, the photon is the basis of biology.

It is pointed out that vionic radiation is more akin to the bioluminescence phenomenon, whereas the mitogenic radiation is more of an intracellular exchange of information. A tremendous opening for biophysics has been developed by the publishing of this book, outlining a process where the vionic and mitogenic radiation factors might step into their prominence in biology. This can be understood and studied through a quantum dynamics, and the old statistical dynamics of the sinthetic pharmaceutical companies will have to be reevaluated.

Since all chemistry is presently understood through photon dynamics, all biology will be likewise explained. We are indeed beings of light and vibration.



SYSTEMS I & II
OF CHLOROPLAST

SUMMARY

1. LONG-RANGE FORCES CAN BE SIMILAR TO MITOGENIC RADIATION, BUT DIFFERENT IN THAT LONG-RANGE FORCES CONTROL MOVEMENT AND ENVIRONMENTAL SENSING. LONG RANGE FORCES ARE ALSO ELECTROMAGNETIC AND STATIC IN NATURE AS THEY FOLLOW THE TRIVECTOR EFFECT. THEY INVOLVE PHOTON REULATION. (MITOGENIC RADIATION IS MORE CONCERNED WITH INFORMATION TRANSFER FOR GENETIC CODING.)

2. ENZYME AND CATALYST ACTIVITY IN THE FACE OF SMALL NUMBERS OF ENZYME SURFACE AREAS CAN ONLY BE EXPLAINED VIA LONG-RANGE FORCES.

3. ALLOPATHIC MEDICINE WORKS BY OVERLOADING A PATHWAY TO UNNATURALLY FORCE ACTIVITY. ALLOPATHY LARGELY USES UNNATURAL, SINTHETIC MEDICATIONS, WHICH ARE A FURTHER INSULT TO LIVING SYSTEMS.

4. ALLOPATHY THUS INTERFERES WITH BIOLOGICAL BALANCE AND *ALWAYS* CAUSES OTHER (IATROGENIC) DISEASE, BY UPSETTING DELICATE CYBERNETIC FEEDBACK CONTROLS.

5. ALLOPATHY IS UNABLE TO ACCEPT THESE NEW BIOPHYSICS BECAUSE IT SO DRAMATICALLY CHALLENGES THE CHEMICAL CARTELS' MONEY-MAKING AMBITIONS.

6. ENERGETIC STIMULATION MEDICINE HAS POTENTIAL FOR CANCER AND ALL MEDICAL TREATMENT. THE LONG RANGE FORCES BEING ELECTROMAGNETICSTATIC ARE RESPONSIVE TO SUCH THERAPY THE QUANTUM MED C.I. IS DESIGNED FOR THIS

7. HOMEOPATHY IS AN EXCELLENT CHOICE FOR MEDICINE IN LIGHT OF THIS PROOF. HOMEOPATHY CAN BE USED TO REDUCE SYMPTOMS WHILE BALANCING THE SYSTEM. USING NATURAL PHARMACEUTICAL PREPARATIONS, HOMEOPATHY CAN THUS RETURN THE SYSTEM TO HEALTH BY LETTING THE ORGANISM RETURN TO BALANCE.