

PHI-LAMBDA-TECHNOLOGY®

An Interdisciplinary View of Biological Systems

From the very day on when science begins to examine non-physical phenomena, it will make more progress in one decade than it made in all the preceding years of its existence.

Nicola Tesla (1856 - 1943)

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An Interdisciplinary View of Biological Systems

From the very day on when science begins to examine non-physical phenomena, it will make more progress in one decade than it made in all the preceding years of its existence.

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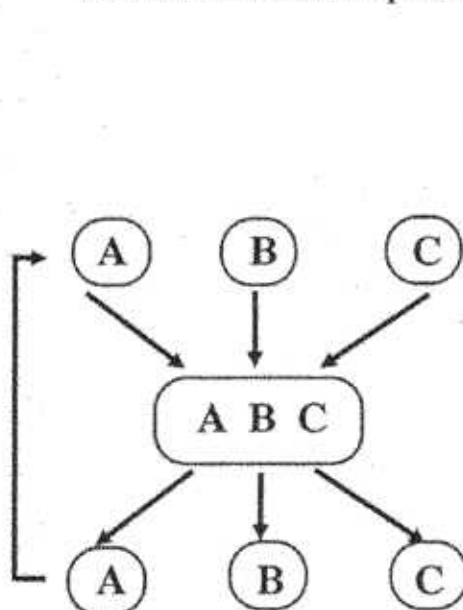
We can never look at a living system as a closed unit. Or, as Sir Isaac Newton puts it: "A biological system is always an open system".

Every living system interacts with its environment. Information theories and static physics quantify these interactions. The fundamental principles of holistic medicine say that the whole system means more than the sum total of the individual parts.

Biological systems comprise:

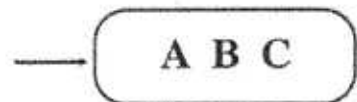
- the organization (LAMBDA, life form with the operation plan) that determines the dynamic and the quality of the interaction and their transformation onto the cell matrix.
- the structure (PHI, matter, energy, space, persisting through time). Everything that concerns atomic and molecu-

From the individual components:



A & B & C :

↓
the biological system
is being built.



The biological system produces again
the individual components A & B & C,

which are required to maintain the system.

lar structure.

Not the single components of living systems are decisive, but rather the interaction among themselves, and to each other. Each individual cell (LAMBDA plus PHI) produces itself the molecules of which it consists from the same substra-

tum in which it lives, and it enlivens them with a part of its inherent LAMBDA (1).

Such a system is called "autopoietic". In an autopoietic system the organization is of fundamental and irreversible importance. **Loss of the autopoietic organization means death (2).**

The Nobel Prize for Applied Chemistry of 1978 sets a New Standard.

A biological system is not a closed system. A closed system does not interact with its environment. A closed system could not be observed by any individual observer, because it does not emit light from itself to the eyes of the observer.

Closed systems are idealizations. They do not exist in reality. Closed systems are only used in mathematics because they are more comprehensible and easier to calculate.

All biological systems are open systems. Open systems are in free exchange with the environment of matter, energy and information (balance of flow).

Open systems **communicate** with their environment. The Nobel Prize winner **ILJA PRIGOGINE** named open systems that can preserve their specific organization, **dissipative structures** (3).

It is not essential for dissipative structures to preserve the substance or the energy, but to preserve the organizational unit and its purpose (4, 5).

Open systems take up and give away again energy, matter and information from their environment. The credit goes to **PRIGOGINE** whose experiments demonstrated that **after a supply of energy such dissipative open systems suddenly formed specific patterns of a high order.** In experiments these patterns could be measured as oscillating changes in color or as rapidly changing concentrations of the reacting starting- or final material of a chemical reaction.

In an experiment bromization of malonic acid by a mixture of bromide/bromate in the presence of cerium-salts was studied (6). During the reaction alternated

formation of Cer(IV)- and Cer(III)-ions, respectively, was observed. With Ferroin as a coloring agent these ions show alternating color formations of blue (oxidized form) and red (reduced form). The change in the formation of blue/red always occurs after 30 seconds (7).

The interval, during which the changes in concentration and color occur, is so precise that these chemical reactions were called "chemical clocks". However, the formation of patterns with this high order only occurs on condition that **certain kinds of energy are supplied.**

Let us illustrate an example of dissipative structures with the string of a violin. The stroke of the violin bow creates energy. The string of the violin begins to oscillate periodically; it vibrates, and eventually it will emit a sound. If the energy supplied to the string was warmth instead of the stroke of the bow, the string would remain silent. We can therefore conclude that to make such a system (the violin) vibrate, we need the "suitable" energy.

During glycolysis periodic oscillations in the concentrations of various intermediate products (mainly catalytically active coenzymes such as NAD^+) were observed in biological systems. The duration of such periods lies within the minute-range. The volume of the organelle in the mitochondria, the permeability of the membrane for potassium ions, and the activity of various membrane-bound proteins change with equal frequency (8). We can further observe the profound biological importance of dissipative structures in regular respiration, in the autonomic rhythm of the intestinal muscles (peristalsis), in the heartbeat, and so on.

Biological telecommunication from the point of view of information-theory.

From the point of view of the information-theory the interaction of a system with its environment consists of the following:

The Message:

means an effect, independent of the mechanism of transmission. The nature of a message is: a possible effect.

The Signal:

is the physical carrier of a message. Every signal is a concrete physical event. The same message can be transmitted by different signals (equivalent signals). The sender transmits a signal. To receive a message, the receiver must be receptive (= in resonance) to the signal.

The Character:

A signal transmits a message with the help of characters. A message is a combination of characters. The total supply of characters for the atomic, molecular, and qualitative structure of a body's cell is contained in the genetic code, and in its surrounding and inherent LAMBDA (operation control), respectively (9).

The Code:

encodes one notation into another. Thus the message is independent of the system of notation used. A variety of carriers can be used to place a stimulus: light, electromagnetic waves, acupuncture, acupressure, and - since the mid-1980ies - biotransmitter-substances produced with **PHI-LAMBDA-TECHNOLOGY®** according to OEFELI (10).

The Information:

means that the message is being measured. Measuring is made by changing the code of the message, e.g. into a binary code: 0 = no; 1 = yes:

alcoholic	yes / no	1 / 0
smoker	yes / no	1 / 0
diabetic	yes / no	1 / 0

The content of this message contains 3 bits.

- The number of possible answers: $2^3 = 8$
- 000 not alcoholic, not smoker, not diabetic.
 - 010 not alcoholic, smoker, not diabetic.
 - 100 alcoholic, not smoker, not diabetic.....

The Far-Reaching Remote-Effect of Dissipative Structures.

The behavior of the individual parts of a system of dissipative structures is unrestricted and cooperative (coherence). It is therefore possible that the effect of an external stimulus like as a laser-beam or a microwave oven, can lead to morphological changes (11).

Only dissipative structures fulfill the requirements of autopoietic system. They enable us to explain the mechanism of taking up information from the environment and of giving off information to the environment.

"Dissipative structure" means also to abandon linear regularity. It requires the establishment of a new principle of cause-and-effect, which, at the same time, means **detachment from local events**, or from system events that could be localized with previously common measuring devices and measuring concepts. In dissipative systems all things are interconnected (environment - body).

According to **P. EHRLICH**, the mode of action of a medical drug is promotion or prevention of chemical communication (chemical reactions). This means that it replaces or blocks receptors, substitutes

or intercepts messenger chemicals, and stimulates or activates sender substances by chemical bonds. This can be summarized in brief as follows: "Corpora non agunt, nisi fixata" (substances don't act unless they are bound).

CLARK followed up these findings and found that the reacting substance, like the molecule of the medical drug and the essential bio-receptor, must fit together sterically like lock and key (12).

All the above explanations view the biological system as a **complicated network of strictly localized functional units**.

While there can be no doubt about such working models, they can be expanded on the basis of their original concept, which always means the **coupling of molecules to one another**. We have to ask ourselves then, how far this coupling is caused by a series of remote-acting interrelationships. Interrelationship could also mean information over the whole organism, in that localized limitations are not a necessity, but not entirely excluded either. **This is especially so with regard to the high coherence of dissipative structures!**

The Causative Effects of EM-Fields in Biochemical Reactions.

All chemical bonds are based on the interaction (force of attraction and repulsion) between electrical and magnetic fields (EM fields) of individual atoms or of groups of atoms, respectively (13). It follows that the effect of **electromagnetic interactions** must also apply to interactions in biochemical processes.

The strong dipolar character [distribution of the positive and negative electrical charge] of water makes in an ideal carrier for such electromagnetic interactions. According to OEFELI every substance can basically be a biotransmitter. Its atomic or molecular structure is of second priority (14). The **far-reaching remote effect** of electrical and magnetic field forces is given because although they diminish by the square of the distance, they never reach the Zero point. Protein molecules or the DNA are also electrically polar, and their behavior can be explained with the rules of electrodynamics, or, in other words, with electromagnetic fields.

We know of a number of quite obvious phenomena that are based on electromagnetic interaction:

- the effect of electrical currents in acupuncture,
- the effect of infrared rays in therapy,

- the effect of laser- and infrared rays in neural therapy,
- the effect of magnetic fields in bone fractures,
- and so on.

Scientists today know that biological membranes change EM waves - the signal - into electrical impulses. Or, we might say that they change their code. These impulses control the biochemical processes.

The electrical potential of cell membranes decreases or increases, and ion diffusion, such as in the sodium-potassium pump, changes. As a biosignal (biophoton) modulated light waves are the mediator of the communication among the cells (15, 16, 17). The rapid development of instruments to measure photon emission in biological systems and the improvement of experimental measurement technology give cause to great expectations for the future (18).

The considerable number of research work published all over the world demonstrates that EM waves of various quality have a series of physiological and histochemical effects on living organisms (19, 20).

Dipolar Frequency is the Starting Point of EM Radiation in Biological Systems.

According to H. HERTZ, and essential for modern telecommunications, every electrical and oscillating dipole emits electromagnetic waves. The frequency of the emitted waves depends on the length of the **Hertzian Oscillator**; the smaller the oscillator the higher the frequency.

All electrical dipoles act as antennas. Whether an electromagnetic wave leaves the antenna or not depends on the relation of the length of the antenna to the wavelength of the emitted radiation. Biological membranes are also electrical dipoles which emit EM waves (21). From a biophysical point of view they possess considerable energy. The charge in the inner part of the cell is opposed to the charge in the outer part. The difference of the potential lies at approx. 50 millivolt with close to 10 nanometers measured over the thickness of the membrane. We therefore calculate Field Force E as follows:

$$E = \frac{50 \text{ millivolt}}{10 \text{ nanometer}}$$
$$= 5,000,000 \text{ Volt / Meter !}$$

Most organisms consist for the largest part of water. As mentioned earlier, water molecules are strong electrical dipoles. Cell water has a passive function; it is a very reactive substance in the intra- and extra-cellular area. Water plays a considerable role in the formation of organic substances, mainly because of its strong dipole character.

I. ENGLER has intensively studied the phenomenon of polarity and its resulting mode of action. On the basis of his long scientific and medical experience as a medical doctor he postulated on the one hand that water is a carrier of information, and on the other hand that water is a diamagnetic medium which, when exposed to electromagnetic treatment, has a kind of memory which, however, does not break up the hydrogen bridges. All these reactions influence the condition of the water's energy, "**which can lead to biological answers**" (22).

Assuming that the water structure is coherent, the electromagnetic coupling of the individual water dipoles (hydrogen bridge bonds) causes them to be successively stimulated to oscillate in resonance, and become thus ordered. The thermic motion of the water molecules as an ordering factor is only of little significance.

The above reflections have been confirmed in numerous experiments. It is known that in the visible wave-range electromagnetic waves are emitted in the immune defense of phagocytes (23).

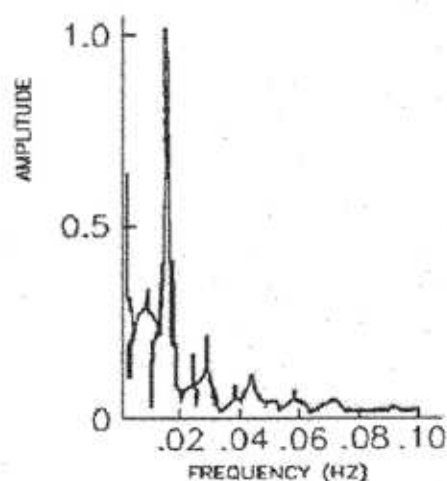
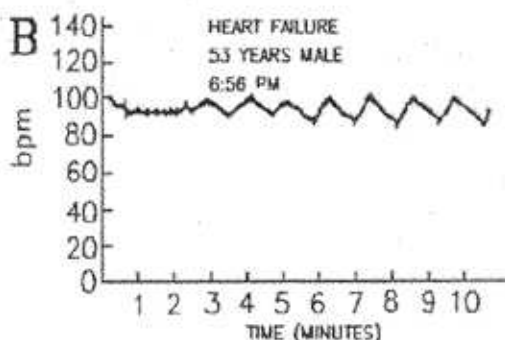
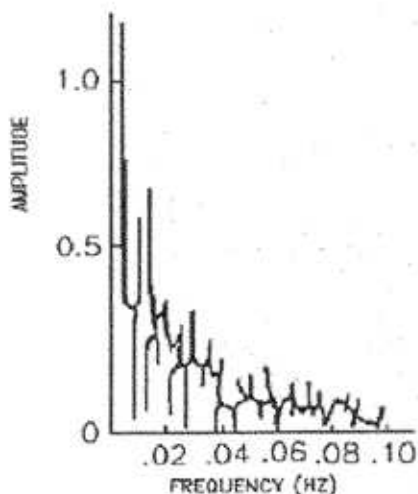
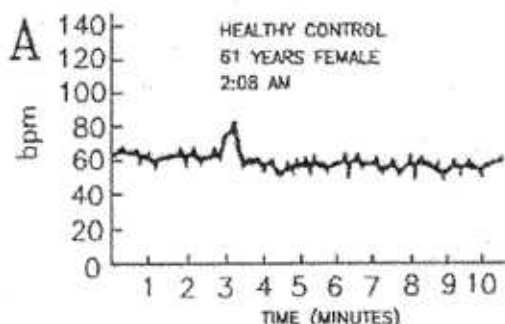
KARU successfully demonstrated that synthesis of DNA and RNA in cells of yeasts or coli bacteria are stimulated positively or negatively depending on the wavelength of the light (electromagnetic rays) (24). RACHISCHEV described separation and differentiation of parent cells in blood and bone marrow by the light of a certain wavelength during blood formation (25).

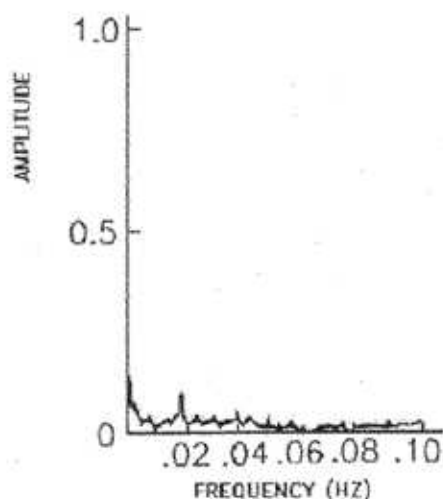
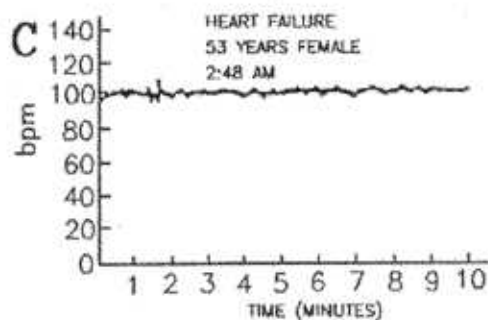
Significance of the Change of Rhythmic Oscillation Frequencies in Dissipative Structures.

Dissipative structures, like all living system, express themselves in rhythmic oscillations. Their frequency can vary depending on the circumstances.

The alpha-waves in the ECG of a healthy volunteer in a state of rest and with eyes closed show a dominant spectrum of frequency below 100 Hertz. When the test person counts backwards, the ECG shows a comparable spectrum of frequency.

When measuring the heart rate of healthy volunteers and of volunteers with diagnosed heart trouble, the ECG of the healthy person shows a large number of stimulated frequencies (diagram A, right side). The ECG of an unhealthy person shows either some dominating frequencies (diagram B, right side), or no frequencies at all (diagram C, right side). bmp (left diagrams) = beats per minute (26).





Comparable results were observed in the fluctuation of peripheral white blood corpuscles or in nerve signals.

Healthy systems generally show a broad spectrum of frequency, whereas unhealthy systems show a narrow spectrum. Simultaneously, a strong periodic behavior of the oscillation occurs: the unhealthy organism has lost its ability of complex behavior.

Health is associated with a great capacity for handling information, or, as in the above example, with the correct handling of impulses from outside.

"Correct" means the coherent handling in the sense of dissipative structures.

Disease is associated with a decrease of the capacity for handling and selecting information, and with giving out "false information" in the body.

Therapy is therefore the support to improve the capacity for handling and selecting information and thus a support for the body to itself create a new order. Therapy can also mean that with an influence from outside the body's inherent false information is deleted.

The term Field (27): From physics to biology.

The term field is one of the most important contributions to science and philosophy of the past three centuries. In the course of his experiments in electricity and magnetism, **FARADAY** introduced the term "force field" in 1830, thus continuing the work of **NEWTON** and **DESCARTES** (around 1620), and of **BOSCOVITCH** (around 1750). It was **MAXWELL** who further developed these ideas with the help of his ingenious equations, and who formulated the laws of electromagnetism around 1870.

Whereas until 1850 substance and matter were regarded as the sole real and justified research projects in physics, the term field gained more and more in importance from that point onwards.

The development in physics caused a shift of interest from the particles to the field in which a particle is no more than a specific compression or particularity.

In 1910 **EINSTEIN** created a formula for the geometric field, and quantum theory works with a field of probability. Thus this concept becomes more and more abstract and immaterial while efforts are being made to combine it with a theory about the continuous and uniform field.

What is a 'field' in physics ?

A field can be defined as a function of space and time $f(p_3t)$ or $f(p_4)$, which obeys an equation of deduced functions, such as $e/fp_4 = 0^4$, and which passes a defined variance. It is a physical quantity that takes various valencies in various places in space; a mathematical function of position. It is also a system that is

equipped with an infinite number of degrees of freedom (28).

These characteristics are of highest importance because biology depends on the physicist who chooses and judges legitimate and authentic research targets. We distinguish the following common groups of fields:

- scalar fields,
- vectorial fields,
- tensorial fields,
- spinorial fields.

We know that the electromagnetic field, the gravitational field, the nuclear field, and the quantum field are connected with certain elementary particles.

This field character in space is most clearly demonstrated in field charts, like, for example, the distribution or structure of lines of force between two charges of equal or opposed signs. And very impressive are charts of electrostatic fields based on ladders with different shapes. It would be interesting to look for correspondence with this scheme of dynamic reshaping in biology, e.g. in a cell during various stages of the mitotic process. Every program of applied physical work quotes the experiment of **KUNDT's Pipe** and fixed waves. Shapes that develop when dust is put on an oscillating surface are called **CHLADINIC Figures**, according to **CHLADIN**, a physicist and artist who lived from 1756 to 1827. Patterns which develop from a quartz oscillator with a frequency of 1650 to 7800 Hertz on a steel plate covered with quartz dust belong to a group of field charts. These patterns are the visible evidence for the invisible forces that shape things.

The classification of related systems and their development in unshaped geometric

coordinates, as examined by D'ARCY THOMSON, paved the way to suggest the existence of a link among living systems.

The term 'field' in biology:

In biology the term "field" describes a system in which the behavior of its elements depends on their individual position within the system. **This concept is of greatest cybernetic evidence.** The existence of such systems was mainly determined by numerous experiments of motion: elimination and addition of parts of an embryo.

Often normal organisms develop from such embryos, because their individual components change their developmental path according to their new position in the whole. In 1939 WEISS compared the normal embryo of a dragonfly with a smaller but completely developed embryo which had developed from the lower half of an egg that, after having been laid, was ligatured in the center.

After surgical removal of the natural lens, NEEDHAM observed the formation of a new lens beginning at the edge of the iris in the eye of a trumpet snail (1942). In the course of the normal embryonic development the lens develops in different ways, starting from the skin. WOLF was the first to discover this kind of new formation, and he intentionally worked with a type of mutilation that cannot occur in an accident in nature: the process could therefore not be attributed to natural selection. **The phenomenon can only be understood by way of the causal entities (LAMBDA), who are more than the sum of the components of the systems in the developmental stage, and who determine the target of this development (29).** It is therefore justified

to regard the term 'field' as an essential factor of synergy and coherence in biological systems. The latter is the subject of inter-disciplinary seminars given at the University of Paris since April 1983.

The morphogenetic field:

Between 1912 and 1922 GURVITCH introduced the term field (morphogenetic field) into embryology. He had devoted his research to finding its underlying principles, and he initially identified those principles with an invisible factor (LAMBDA) that is decisive for morphogenesis. Later he identified them with interactions between the cells (mitogenetic radiation) which determine position and differentiation of embryonic cells.

The Austrian scientist WEISS transferred the term field to the regeneration process (1925), and the British scientists HUXLEY and DE BEER combined it with the one of the gradient (1934).

Between the years 1940 and 1970 the British biologist WADDINGTON and the French mathematician THOM introduced concepts for embryonic development as a vectorial field that is divided into a limited number of areas of "structural stability". THOM's Disaster Theory continues to influence biological research today. Modern theoretic biology developed this theory further, but until now opinions still vary about the intrinsic characteristics of the phenomenon that it describes.

Towards 1935 BURR formulated an electrodynamic description of life (the so-called "L"-Fields), combined with the measurement of electric charges in a healthy and unhealthy organism.

GOODWIN found that the morphogenetic field could not be reduced to the molecular biology of the genes, because

their activity is insufficient from the point of view of space (30).

LA PLACE's equation which became known in the 18th century, describes the characteristically weak changes in the new formation of single-celled organisms. It is a local mean law throughout space which establishes complete order. The question whether morphogenetic fields are of an electrical, chemical, biological, or spiritual nature remains open.

GOODWIN insists on continuing these experiments. He expects that it could be a question of one or all factors combined. Even though we know nothing about the "material" characteristics, their importance for the development is unquestionable. Very important in this context are the remarkable results of **BECKER** of the mode of action of electrical fields in regeneration.

SHELDRAKE has extended the concept of morphogenetic fields to space and time, and has introduced **morphological resonance** as a factor of union. This will be dealt with later in this essay when we talk about the information character of **LAMBDA**.

The Field Concept is not yet a part of the study about living organisms at universities today, and **INYUSHIN**, who teaches this concept as a professor of biophysics at the University of Alma Ata in Kazakhstan, is a remarkable exception.

If theoretic biology wants to be satisfactory, it requires the same complementary between field and particles as we find it in physics.

The field appears as a unit of form and biological organization, whereas molecules and cells are units of the biological composition.

We can conclude from this that biology has reached a new degree of maturity, and that it begins to describe the living organism by means of the characteristics of the

field. This happens with a delay of approximately half a century, after the inanimate world was described by physics with the aid of the same terms.

The field concept demonstrates a dynamic description of a space-time activity expressed in the fact that matter is increasingly ordered and oriented according to curve-shaped coordinates. **J. HUXLEY** sees the field as a territory inside of which a force is acting in a coordinated way.

WADDINGTON defines a system of order among unstable positions in various areas with an exact relation to each other. The mode of action of fields is determined by a balance among all these positions. **RUDY** regarded it as a more geometric rather than physical concept. And **BERTALANFFYS** understands the morphogenetic field of flowers not as a force field, but as a field of cause or direction. If we try to find a common denominator for these different definitions, we might say that there is an ordering factor in space, where certain reactions that we observe take place.

Basically, the field is a messenger, a link. It uses space and time as a "language" to "mark" the continued interaction between matter. **WOLKOWSKI** suggests a more current concept based on the Phoron (Greek for 'to carry'): an entity in connection with a field, who is the carrier of a message. It is fixed to a field, or it resembles a field, because in the physical sense it is not only a field (31).

As a double concept, physical and cybernetic (informative) its informative content (formative) is essential and the task it fulfills represents its visible and comprehensible aspect. Like a regulon (regulating entity) resembles a wave, **LAMBDA** resembles the field.

When **WOLKOWSKI** came to the conclusion that biology was beginning to ac-

cept the field character of living systems, he raised the discussion of a biofield as a not substantial part of biomass (biomass without biomatter) (32).

We can find such biofields among the known physical fields: electromagnetic fields (especially infrared, luminescent fields, photon emission), thermic, acoustic and combined fields.

It is characteristic of man and society to emit a negatively-entropic field with the ability to structure and order.

The following list - albeit incomplete - shows some parameters for LAMBDA:

- Source,
- Characteristics,
- Production,
- Intensity-Transmitter,
- Direction,
- Anisotropy,
- Topology,
- Radius of activity,
- Interaction with material purposes,
- Interaction with other fields (LAMBDA's),
- Content of information,
- Temporary characteristics (in relation to time),

Let us observe the emission (from a transmitter to a receiver) of phorons through a medium of reproduction. The following (incomplete) list shows some parameters worth considering: speed of reproduction, density and anisotropy of the medium, power and spatial position of the sender, and obstacles that obstruct the emission (filtering, competition, quality of the receiver).

It is useful to observe that the information aspect of the LAMBDA emission can neither be subordinate nor reduced to the physical aspect: not all field lines of

a field chart are information channels. Duplication and storage, amplification, dispersal of the reflection, rebounding and absorption are the physical aspects of the interaction with the receiver; but coordination, duplication, memorizing, modulation and storage have an informative character. Regardless of the details of COLLOT's information theory presented at the aforementioned seminar, we come to the conclusion that introducing information theory in physics and biology seems to be a major difficulty. The Laws of Preservation in physics (especially the preservation of energy) have not found their analogy in information theory. Nevertheless the question remains open whether the existence of a dissimilarity in physics, in analogy to the law of CURIE, might be a necessity in order for information to manifest itself.

The information character of LAMBDA lies in its ability to order and structure matter (33): In the course of its interaction with matter a continuous field can cause irregularities and differentiation.

An ordering field can be characterized by the following properties (limited to morphogenetic fields according to the understanding of biologists of 1930):

Properties of ordering fields (LAMBDA):

- 1. When a certain amount of matter is removed, the remaining field shows the same pattern after a certain time that would normally have emerged at a more significant size.
- 2. When matter is brought into the field that is not (but can be) ordered, it is structured by the field.
- 3. Two or more fields can combine to

one more complex field.

It follows that the term "LAMBDA" does not only represent a field. Its novelty lies in its overall function to transmit a message. It is an information field (a field that structures and shapes).

Theoretic concepts are often used as a reference or as a model and confirmation for other fields of intellectual research, and we can therefore expect to use this kind of physical and informative concepts in many areas. **OEFELI points out that the biological effect of electromagnetic radiation is less dependent on the amount of energy rather than on the quality of the information (34).** This conclusion is based on numerous examples.

Let us look at the electromagnetic phenomena (EM) in their relation with living systems. They are being investigated in electrobiology, electrophysiology, radio biology and photo biology as well as in a combined discipline; bio-electromagnetism.

The interactions can be reduced to three types:

- 1. The outer EM-effects from the environment;
- 2. The inner EM-manifestations (occurring inside of a living system or of other systems);
- 3. The EM-interactions between two or more living systems.

The smallest amount of research has been invested in the third type.

Besides the well proven thermic effects, the non-thermic effects (specific effects or switch effects) become more and more known. In this field of research **OEFELI**

is the leading scientist.

Remarkable progress has been made in theoretic and experimental physics since fifty years. And yet there is still a time-gap to the use of this knowledge in practical biology.

The practical use of the knowledge that was gained in solid-state physics led to bioelectronics, to sub-molecular biology and to quantum-theoretic biology. After having received the Nobel-Prize, **SZENT-GYRGYI** shifted his major interest from molecular science to sub-molecular science, and paved the way in this field of research.

Elementary particles - bioplasma:

In the search for an answer to the ambitious and important question "What is Life?" biological research takes us to the elementary particles (mostly electrons and protons), but also to photons (light of a biological or artificial origin), to electromagnetic fields and others.

Besides the chemical transformations, such electronic processes are a complementary reality of life. Both are connected with each other, and therefore the description of life with terms like receiver and transmitter of electrons, transmitter and receiver of electromagnetic waves, exchange of photons etc. opens a fascinating horizon in the research of health, disease, life or death.

The visible existence of living matter as a chemical substrate is one aspect. However, living matter also possesses the **characteristic ability to perceive and create physical fields** (more precisely called biophysical fields).

This new definition of living matter leads to the conclusion that a structure that contains no non-physical biofields is not alive!

The seminar given by **WOLKOWSKI** at the International Symposium on Wave Therapy in Versailles/France in 1978, chaired by **SZENT GYRGYI**, could lead to a new approach of the concept of plasma physics in cellular substances.

A synoptic overview of the parameters of electronic plasma (electron density, temperature, frequency of the waves, Debye-Radiation) presents a broad spectrum of possibilities: ionosphere, the corona of the sun, white glowing discharge, flames, and the electronic plasma in mitochondria, in their extension starting from coupled Pi-electron systems.

It is possible to postulate the existence of such a plasma or bioplasma, for example in the mitochondria, which represent less than one percent of the cellmass, and which are the energy transformer of our body. The possibility of such a physical plasma opens the doors to justify and predict a series of resonant interactions with an outside source of resonance. What is contained herein, is the effect of a control organ on the basis of low energy sources. Without repeating the details of such thoughts - which are nevertheless inevitable for such a model - we can conclude that the frequency of plasma oscillations in biological membranes correspond to:

10^{10-11} Hertz for proteins,
and
 10^9 Hertz for DNA and RNA.

We do not yet have "precise scientific" experimentally derived evidence for the existence of this kind of plasma condition in living matter, as much as it is difficult to prove that a bulb (or neon tube) can glow even when the source of energy is cut. Direct, non-destructive in vivo evidence that demonstrates the existence of an electronic plasma in things alive re-

mains to be found.

Resonance effects, or the effects of a control organ in a biological system, require optimal conditions with regard to frequency, intensity, direction and dosis. This is due to the fact that **living systems are characterized by a non-linear behavior** which makes coherent, cumulative and anisotropic resonance effects possible (35).

Since we can ignore the energy exchanged with regard to non-thermic effects, it follows that the role of the electromagnetic field is the one of a signal that organizes the new distribution of the available energy.

A signal is an agent by which an identical pattern is recognized, and which brings about a different answer, like in the drawings of **ESCHER**. The different way of perception, the step aside, the structural and informative shift, may well be the key.

Three examples for non-thermic effects in biological systems:

- 1. Low-energy stimulation by ruby- or helium-neon-laser in various fields, from skin cancer to acupuncture, and stimulation of seeds before germination in agriculture.
- 2. The cytopathic "mirror"-effect described by **KAZNATCHEV** in 1966. Based on **GURVITCH's** work, **KAZNATCHEV** kept a record with over 1'700 observations of the intracellular interrelation at a distance between an "inductor"-cell culture and a "detector"-cell culture. He observed that with an efficacy of 75 to 78 % the "inductor"-cell culture exerted a lethal influence on the "detector"-cell culture in

the absence of a material contact. This influence could be categorized into three types: lethal UV radiation, virus infection, and mercurous chloride poisoning. When the transparent crystal window with a strength of 280 to 320 nanometer in UV-light is replaced by a glass window that does not let UV rays pass, this effect can no longer be observed. These observations apparently were confirmed by **KIRKIN** in 1981.

The above data point to the existence of some basic character of certain EM-rays, in this case UV-rays, that act as the carrier of information for **Lambda**. They belong to the group of the least examined EM-interrelationships (life to life), and their elucidation could open a new horizon in biology.

- 3. The existence of resonance effects in the spectrum of microwaves confirms the non-linear answer of biological systems, and suggests that electromagnetic oscillation is inevitable for new cell formation. If this be a general truth, a cancer cell that is blocked in the dividing phase of its development cycle, would be an oscillator that lost its fine tuning. Indeed, when we look for a common denominator for cancer, we must think of the Indian parable of the four blind men who try to describe an elephant: Cancer is an informational disease that has a frequency character on an electronic matrix within a molecular grid. We can view it as cybernetic pathology which is caused by incomplete reaction and a disturbed hierarchic order; as regression of division and proliferation characteristic of the individual, isolated cell. Such a new definition could lead to new answers, which we hope will be

more satisfactory.

The idea of a field as a news transmitter, or as a language, to mark matter in the space/time structure is another conclusion that can be drawn from field charts or from the equipotential lines that have been newly classified by **GULAYEV**, **KULIN** or **SZYMANSKI**. Maybe such field charts can be used before a definite scientific explanation has been found, as it is already common use in acupuncture.

A last example goes back to **CALLAHAN**. In his investigations on the behavior of insects he found that insect's antennas are real antennas. They have the same characteristics as a dielectric resonator and as thermo-elements with cavities and tubular wave conductors. The variety of shapes of insect antennas becomes significant as a sort of morphogenetic answer to the lock-and-key-principle to field generators. **CALLAHAN** has found some indications of the communication of insects in the microwave spectrum and in infrared radiation, especially by atmospheric windows that let pass wavelengths of 9 to 13 microns. The full moon interferes with this laser (laser based on microwaves and infrared radiation). The molecular bio-electronics of the communication of insects has been supported by three groups of results:

- 1. With the rapid beat of its wings at a frequency of approx. 40 Hertz, the Sphinx (*Clevo lineata*) is capable of elevating its body temperature to about 25 C higher than the lowest outside temperature, and thus regulates it like a black body.
- 2. The flame of a candle imitates the infrared frequency of 17 microns of the sexual hormone of a moth.

- 3. Depending on the kind of antenna, they oscillate in various frequencies, but they remain in the ELF area (extremely low frequency) of 8 to 500 Hertz.

Somebody once said that the search for better answers begins with the search for better questions. All laws of physics are subject to the same principles of conservation: electric charge, number of microbar, mass/energy, and angular momentum.

What new principles of conservation are required to obtain organic or cybernetic physics? What are the new resonances? Will they be connected to asymmetry, to form, to similarity or to information? **SHELDRAKE**'s view of morphogenetic resonance in his hypothesis about the formative causalities, or **PHI-LAMBDA-THETA Theory** supported by **OEFELI** and practically applied in **PHI-LAMBDA-TECHNOLOGY®**, are certain to belong into this category.

Physics, as it is taught today, examines, purifies, and reduces systems, and eliminates relations. Only energetic resonance has found some recognition here and there since some time. In biology and genetic science, however, relations, combinations and various networks cannot be ignored without paying for the consequences. Synergy and coherence are permanent features of well functioning biological sy-

stems, and the term "field", or **LAMBDA**, could be their common language.

The new understanding that could result from the use of such therapies, is great: for medical science it could mean the foundation of holistic therapies based on information, instead of local therapies based on chemical substances. But it would not only improve the understanding of therapies that are based on waves. It would also help meteorologists to understand the effect of complex fields, cosmic influences, biological rhythms, and the environment in general, which can extend as far as the information can be exchanged.

The word "physica" in New Greek still means "in a natural way". If it is true what physics has been telling us since half a century, namely that the world has a field character, then living beings are no exception to this ! (36).

The truth is that at this point exact natural sciences probably know as little about the parameters and factors of the **LAMBDA** organization inside a living body as they knew some centuries ago about physical anatomy. But we can well imagine a time when the transformations between disease and health will be described by terms like 'regulation', 'information', 'field' and '**LAMBDA**', oscillation, coherence, and light.

The quantum-electrodynamic principle of action of products with information as their active principle.

The fundamental principles and working hypotheses discussed earlier are employed for practical use in **PHI-LAMBDA** products whose active principle is information. These products were developed by the Swiss company: **PLT PHI-LAMBDA-TECHNOLOGY GmbH**.

They developed and produce products that serve as a carrier substance to give to the body's own inherent **LAMBDA organization** certain bio-information, in the form of a signal, by means of electromagnetic oscillations, or "modification of the memory of the nuclear spin", respectively. We shall revert to this point a little later.

LAMBDA, as a dissipative and open system, picks up those signals (communication).

The high coherence (unlimited and cooperative behavior of the individual parts [**LAMBDA**]) assures the far-reaching effect of these signals, even over the whole body.

LAMBDA creates new patterns of a high order which lead to different interreactions among the biological reactors (37).

We can basically distinguish 3 different ways of influencing a living system with information. **PHI-LAMBDA-TECHNOLOGY®** according to **OEFELI** is exclusively based on the latter, the third (38).

The products can act according to two physical criteria of interference:

1.) Interference products that intensify the information:

They are supposed to strengthen the body's inherent oscillation or information pattern, respectively. The efficacy of this mode of action depends entirely on the knowledge of all data concerning the physical problem, and its related signals, information and information patterns. Since we are talking about dynamic (living) systems, it is not very efficient to use rigid technical information to influence the control system of the individual cell groups directly, and thus to ignore the actual control system, **LAMBDA!** (39).

A minor error in the programming of such products can have detrimental consequences for the whole system: the body, already weakened by the disease, must now also cope with this "strange information".

This might be the famous 'step too far'!

2.) Interference products that weaken the information:

They are supposed to inhibit or erase "wrong" (= disease promoting) oscillations or information, respectively. The efficacy of this mode of action depends entirely on the knowledge of all data concerning the physical problem, and its related signals, information and information patterns. Since we are talking about dynamic (living) systems, it is not very efficient to use rigid technical information to influence the control system of the

individual cell groups directly, and thus to ignore the actual control system, LAMBDA ! (40).

A minor error in the programming of such products can have detrimental consequences for the whole system: the body, already weakened by the disease, must now also cope with this "strange information".

This might be the famous 'step too far'!

Products that intensify the information should activate the body's own defense mechanism, and should again build up physical energy.

Products that weaken the information should inhibit or eliminate the activity of the pathogen.

The physical mode of action of products with information as the active principle is based on interference (superimposing) of oscillation. It is the interference (superimposing) between the electromagnetic waves of the bio-system's oscillator, LAMBDA, on the one hand, and the signal that reaches it on the other hand.

An essential question for dissipative structures, namely the one of the "suitable" energy is answered when we ask for the **resonant frequency**. If the frequency of the arriving signal is more or less identical to the one emitted or picked up by the oscillator, the frequency will be more or less significantly intensified or weakened. The greater the difference between the interfering frequencies, the weaker their interaction. This explains the **relative selectivity** of products with such a concept.

3.) PHI-LAMBDA-products (41):

In contrast to the two interference methods described above, **PHI-LAMBDA-TECHNOLOGY®** developed by the Swiss natural scientist and bio-researcher **ANDR E. OEFELI**, does not address itself to individual cells in a biological system. They address themselves to **OEFELI's** postulated **LAMBDA** organization of a body (42). We shall revert to this point a little later.

Like for the methods described in points 1.) and 2.), **OEFELI** uses a device that he developed to program the coded bio-signs (information) onto a carrier substance. With his technology, the carrier itself is not of major importance, and liquid or solid carriers are equally well suited. An entirely new system was required to technically solve the problem of how to transfer the information. In a Faraday Cage with several cascade-like connected Tesla flat-coils, electromagnetic, stationary scalar-waves of low intensity are being created, which are capable to program the information that it transports indelibly onto the carrier medium.

In contrast to "programming technologies" that have been in use for quite some time, the information is not programmed as an electromagnetic field "around" atoms and molecules, but the angle of the alignment and the rotation of the electron-spin of the atoms or molecules involved is altered and then used to program the information indelibly onto the carrier (43). Also in contrast to other technologies, this information will not get lost with time, and will neither be weakened nor influenced by other signals from the environment (electro-smog, electromagnetic fields, technical- or earth-magnet fields, temperature, light, etc.).

This represents a major breakthrough in

science, and at this point of time we are not yet able to assess all the possibilities that lie hidden in this method. It will certainly take a few decades of research

in this field until the whole range of possibilities for practical use of this technology will have been found.

A broader view of biological systems (44).

In science, and in biophoton research in particular, a revolution is underway. Research results have demonstrated that the diverse structures and processes in a living organism are determined and controlled by an electromagnetic field (LAMBDA). From its physical point of view, this field consists of light, which, however, lies within a spectrum invisible to the eye.

In 1975 physicists constructed a device to measure ultra-weak cell radiation. And even though they were not convinced about its existence, they found this radiation in a number of plant and animal cells. The frequencies measured were in the region of ultraviolet, visible, and infrared spectrum of light.

Some physicists assumed that a purely biochemical transmission of signals did not suffice to explain communication in living beings. Their viewpoint was that living cells emit biophotons to communicate with each other. Furthermore, they expected these photons to be the primary element in the hierarchy of biological control.

The whole organism is surrounded and penetrated by a biophoton field. The scientists surmised that this force field, into which our body is embedded, is the primary force that controls the occurrences of life in the organism.

In OEFELI's view it is, however, only the first or highest manifestation of a living system's LAMBDA-organization that he postulated, and which shapes the actual "morphogenetic field", the so-called matrix which in turn organizes, orders and shapes the structures and processes in the organism (45).

The carrier field (LAMBDA) on which the biophoton signals reproduce themselves, corresponds largely to the light- or ether body (AURA) of Far Eastern philosophies. This is a large organization of spiritual entities whose highest purpose is "to survive as an organism" (46).

The manifestations of LAMBDA are partly electromagnetic phenomena, which is why we can demonstrate them with methods of modern physics (Kirlian photography, Colorplate photography, Aura Vision, or Photon-Spectral Analysis, to mention just a few).

Holistic Behavior.

The biophoton field is a coherent field. Coherent electromagnetic waves like in a laser-beam are ordered and coordinated waves.

Which is why a coherent field acts in an ordering and structuring way, even at long distances. Information can be transmitted, and a great number of particles, cells, tissue and organs can be coordinated and combined to a whole.

The coherence of the biophoton field originated by the LAMBDA-organization is what causes the cells to show uniform behavior.

The analysis of the measurements of biophoton radiation showed that living organisms that emit this radiation, are so-called "non-balance systems". This means that with a regular supply of energy an internal order can be maintained, which would collapse immediately if this energy supply ceased.

Biological systems are in a frail transitional state - a so-called phase transition. Even the slightest influence can cause their falling into another condition of order.

The condition of the phase transition is also a laser process, in which a regular supply of energy keeps up a mechanism

of reinforcement and creates a coherent field. At the same time, the phase transition is the 'laser-threshold' where all living organisms are located.

It follows that not only physical particles are in the frail transitional state, but also the biophoton field itself in which the particles are contained. The slightest influence (information) causes the latter one also to easily fall from a chaotic to a coherent condition. It is now in a position to coordinate large areas, and to combine them to a meaningful whole, and to transmit information and effects.

Chinese Medicine describes the conditions of the biophoton field on both sides of the laser-threshold as the **YIN-** and **YANG-condition** acting in the **CHI** (regulating life-energy in our organism).

Biophoton theory also claims that with the change of these conditions all the processes in the organism are regulated and controlled. Cells and tissue in the phase of uncontrolled division and growth (cancer) must be in a chaotic biophoton field. A coherent field inhibits growth, assigns special tasks to individual cells, and causes differentiation in nerve tissue, stroma, or muscular tissue.

Health through Self-Regulation.

Considering the above we can understand cancer as a disturbance of the controlling coherence in the biophoton field. In a healthy condition local chaotic fields are specifically used, but in a cancer patient they get out of control and uncontrolled growth of cells occurs.

The capability of **LAMBDA** to regulate its biophoton field like a pendulum that swings to both sides of the laser threshold, and to immediately balance out a swing to one side with a counter-swing to the other - in other words **the capability of self-regulation** is what we actually call **health (47)**

In a healthy condition the biophoton field very rarely moves far away from the laser threshold. If it still does, the capabi-

lity of regulation might be somewhat limited. If it gets stuck on one side or the other, **this means disease.**

Disease can therefore be divided into two groups:

- **Group 1: with a too extreme swing to the YIN-side,**
and:
- **Group 2: with a too extreme swing to the YANG-side.**

In view of the uncontrolled growth of cells, cancer belongs to the **YIN-**, or chaos-side, whereas infectious and inflammatory diseases, such as multiple sclerosis, must be assigned to **YANG**, or order.

Biophoton Research - Homeopathy - Phi-Lambda-Technology®.

Biophoton research has a certain inner degree of relationship with classical homeopathy according to HAHNE-MANN and modern PHI-LAMBDA-TECHNOLOGY® according to OEFE-LI.

An investigation made upon an initiative of the Federal Republic of Germany has revealed that biophoton research can meet the standards of the particular principles set for homeopathy.

The higher the homeopathic dilution (potentialization) of an original tincture and the less atoms still present in the active substance, the higher the content of a kind of "electromagnetic print" of the active substance in the form of coherent frequencies present in the solvent (alcohol or lactose).

They are now no longer limited locally and of short duration as in a low poten-

tialization but they now act on a much more basic and long-term level. They exert a direct influence on the biophoton field of the patient, and thus on the holistic control.

With the findings of biophoton theory, methods like classic homeopathy with individual medication represent a type of model for medical treatments of the future. **Its activity is very specific and individual. With very little effort and no side-effects it can influence the very level where disturbances begin, and thus have a causative influence on regulation.** Physicists are optimistic that they will succeed in the near future to develop a new technology that supplies the body with the missing information and causes it to regulate itself.

This leads us to PHI-LAMBDA-TECHNOLOGY®.

A Brief View at the PHI-LAMBDA Theory.

There is no doubt that an interaction of living organisms with natural and artificial non-ionic electromagnetic fields exists. This was already demonstrated a long time ago.

Nevertheless, traditional science must admit that the mechanism of this interaction remains unknown. It cannot yet explain the HOW and WHY of the remarkable effects observed.

We owe it to OEFELI whose PHI-LAMBDA-THEORY enabled scientists for the first time to understand living systems and to make correct predictions about their behavior under certain conditions.

It has been demonstrated that the correlation of the proportion between the intensity of the radiation and the biological effect to be expected, could not be confirmed (48).

Quite unexpectedly, contrary reactions and obvious paradoxes could be observed: a weaker energetic stimulant causes a higher biological effect.

Other abnormalities of the threshold, the intensity, the duration, and the radiation were observed, and they were equally confusing for traditional scientists.

The fact that purely biochemical arguments do not offer a solution or a mechanism has led OEFELI to search for a solution in the field and hypotheses of bio-electronics (49).

Theories that are officially recognized today do not mention interactions between the applied fields of a very low frequency (below 100 Hz) and the biological systems.

The fact that billions are invested worldwide in the research of the effects on biological systems of ELF-waves leads to

the conclusion that certain groups have great expectations in such investigations!

Regardless of how the molecular mechanism will be that eventually will gain recognition, it is obvious that the observed effects are not "controlled" with the aid of energy by the fields applied.

The effect of these fields lies in a switch effect, or trigger effect, which induces the transition from one condition to another.

It is known that short waves (10 meters) alter the orientation of the electronic rotary movement and induce electronic and molecular translation; microwaves alter the rotary movement of the molecules. Infrared rays change their mode of oscillation, visible rays cause transitions on the level of electrons of the outer core. Ultra-violet and X-rays effect the electrons in the inner core. It follows that the biophysical approach to explain the biological system with purely passive characteristics, is intrinsically insufficient to describe the observed effects. To describe these effects it is essential to understand the electrodynamic character of the interaction between the electromagnetic field and the biological environment. The electrodynamic character of these interactions can only be explained with the existence of an electronic plasma in the biological environment. OEFELI calls it LAMBDA. LAMBDA is a spiritual entity with the definite purpose to survive as an organism. A whole organization of LAMBDA enlivens a biological system (50).

The existence of such an electronic plasma was already formulated by the Polish scientist MANCZARSKI in 1966, and by SEDLAK in 1972 (51).

Eventually it was **INYUSHIN** from the Soviet School who assumed that the plasma as a dynamic condition of matter within living systems could be the carrier wave of the bio-information and the mediator substrate between the field impulses and the biological effect.

He was indeed very close to the truth!

Physical plasma would indeed represent a new specific condition of matter. It would be an electronic liquid that differentiates itself from the other three conditions known today. Several arguments support this hypothesis:

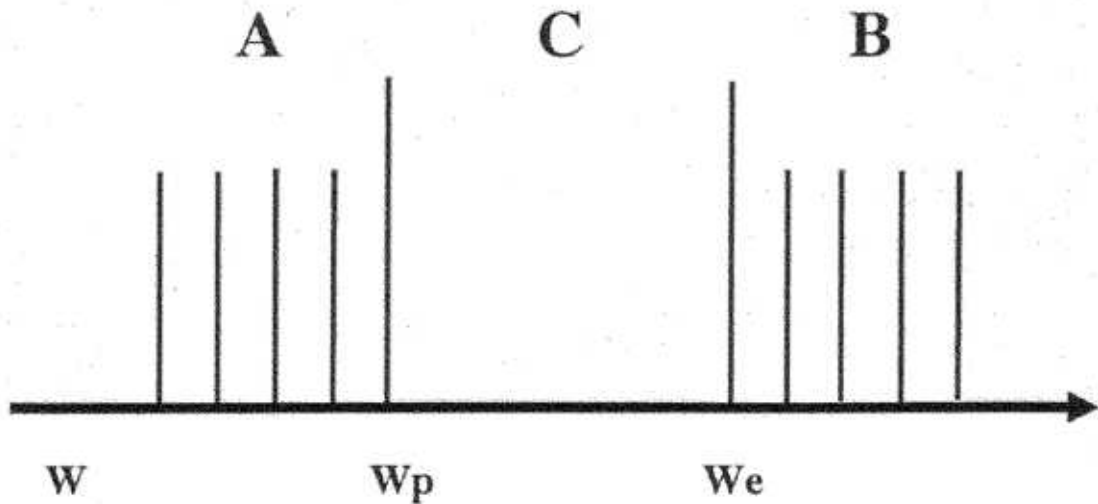
- The semi-conductor-like characteristics of biological matter,
- The behavior of charge carriers in semi-conductors,
- The similarity of certain functions of living systems and the fundamental characteristics of plasma in solid-state physics.

MANZCARSKI who introduced mito-

chondria as a characteristic localization of biological plasma, has mathematically demonstrated the possibility of a cold electronic plasma with a higher density than in the ionosphere.

When talking about the absorbing power of the spectrum of the outer electromagnetic waves by the biological environment, we have to consider the existence of three different zones:

- **First, Zone A**, where we find waves that are shorter than the wave bound to the plasmic frequency where the essential mechanism of absorption would be the scattering of the electromagnetic waves' energy over the organism.
- **Second, Zone B**, where we find frequencies that are lower than C, where radiation could be absorbed by the environment and spread as magneto-hydrodynamic waves (MHD wave).
- **Third, Zone C**, which is actually "deaf" to the outer electromagnetic fields with a strong absorption in C and P.



It is important to note that it was **SEDLAK** again who assumed the presence of magnetic-hydrodynamic (MHD)-waves in living systems.

As a conclusion to the above bio-electronics includes essential processes like the quantum-mechanical coupling between chemical reactions of the metabolism and the electronic phenomena in the environment of the protein with characteristics of a semi-conductor.

Biological matter must be described as a condition of high agitation of organic mo-

lecules. The energetic situation can therefore diverge with regard to physico-chemical relations observed in the laboratory.

The energetics of the bio-system, the relation of organisms to each other, and the field relation between the organism and the environment can be more easily understood when we cease to observe the bio-system from the viewpoint of traditional biochemistry, and begin to look at it as a unit of living quantum oscillators - **LAMBDA (52)**.

Mode of Action of PHI-LAMBDA-TECHNOLOGY[®]

It cannot be our intention to explain the results of decades of research of remarkable scientists like HAHNEMANN, EINSTEIN, DE BROGLIE, NIELS, BOHR, or HEISENBERG in a few lines. But we still owe a minimum of explanation to all those who have an interest in the practical use of our technology and who are not yet familiar with it.

PHI-LAMBDA-TECHNOLOGY[®] acts at the cause of disturbances, and not at their effect.

To emphasize the extremely broad spectrum of application, we therefore prefer to use the term 'technology'.

To understand our system and its practical use, it is inevitable to have a close look at some new findings, and at the theory of:

- **PHI** (matter, energy and space persisting through time),
- **LAMBDA** (life-form. That which enlivens, structures, and organizes PHI), and finally for better understanding and conclusion,
- **THETA** (the person as a spiritual entity).

For a more in-depth comprehension of the theory of PHI, LAMBDA, and THETA we recommend the study of publications on PHI-LAMBDA-TECHNOLOGY[®] and its basics of natural science and philosophy (see References). In this respect we would like to point to two articles: 1) manuscript of the PHI-LAMBDA-Seminar given on September 15, 1992 and 2) publication entitled "What is an allergy from the bio-energetic point of view, and what can we do against it" (Fe-

bruary 1993).

Like every living body our organism is continuously oscillating. It is covered with points, or zones, at which interactions or reactions occur. OEFELI calls these points or zones "entrance gates" or - to express it in computer language - 'interfaces' to the LAMBDA organization that enlivens the biological system.

In case of disorders (disease) in the body, these points emit certain frequencies. They are the entrance gates through which PHI-LAMBDA-products transmit their information.

The points targeted at by acupuncture or other fields of natural medicine are NOT necessarily identical with the LAMBDA-interfaces.

Of highest priority was the finding of the gates that stand open for the information fields to assure that the message can naturally find its way to the "organizational management" of LAMBDA.

The 'LAMBDA-management' decodes and analyzes the incoming information, and transmits the evaluation to the neuro-hormonal system, among others, from where the necessary orders are further transmitted. The neuro-hormonal system in turn produces all the essential biochemical substances that the organism needs to restore its harmony.

The credit for all this goes to André E. OEFELI, the Swiss natural scientist and bio-researcher, whose extensive work, in particular in bio-information and bio-communication, has resulted in the new technology described in this paper.

Many years ago already, OEFELI had the idea that physics and philosophy would one day have a great influence on biology and related fields of science.

Ever since the beginning of his studies he examined the practical use of quantum physics in the fields of generation of energy, biology, genetics, human- and veterinary medicine, and cosmetics, to mention just a few.

Some people believed that in order to have an effect, PHI-LAMBDA-TECHNOLOGY® would require a lot of energy such as radioactivity or laser.

THIS IS NOT SO: the small amount of energy inherent in atoms or molecules of the carrier substances is absolutely sufficient!

IT IS IMPORTANT TO KNOW THAT ONLY THOSE MESSAGES (INFORMATION) REACH THE INSIDE OF THE ORGANISM AND THUS THE LAMBDA-MANAGEMENT, WHICH IT HAS ATTRACTED AT ITS RECEPTOR POINTS.

WE CAN THEREFORE CONCLUDE THAT PRODUCTS PRODUCED WITH PHI-LAMBDA-TECHNOLOGY, WHOSE MODE OF ACTION IS INFORMATION, CANNOT HAVE ANY UNWANTED SIDE-EFFECTS.

It is also important to know that the mode of action of PHI-LAMBDA-products is entirely different from any other method developed so far that claims to have a 'metaphysical influence' on a living system. Phi-Lambda-products do not exert their activity directly at the cellular control. It always

chooses the indirect way via the LAMBDA-Management, because only there lies the perfect knowledge about how to restore harmony in the body with the "repair program" of the PHI-LAMBDA-products.

This is the decisive difference to "competitors' methods", and at the same time it is the guarantee that the inner harmony of a biological system will never be disturbed, but on the contrary, that in the long term it will be restored and ensured.

OEFELI believes that the traditional concept of directly influencing cell groups or organs with products whose mode of action is information, is in fact very dangerous because this approach once again isolates and treats only a very small part of a large system without taking into consideration all the interrelations.

From a philosophical point of view the traditional concepts are nothing more than "refined" classic orthodox medicine, which, as we know, is only capable of treating symptoms or manifestations within a biological system, although those concepts are somewhat more subtle and it takes a but longer until side effects show up.

I hope that experts of other methods or technologies will forgive my being "paracelsically clear" at the end of this article!

The broad range of application of PHI-LAMBDA-TECHNOLOGY®.

As demonstrated in this article, the thorough knowledge about the laws of life that lies in PHI-LAMBDA-TECHNOLOGY® opens the path to a broad range of applications.

The exploration of all the possibilities of their practical use will still require a few decades of research in this field.

The following list shows the products developed until this day, and their field of application:

- Regeneration and healing products for use in **human medicine** (53),
- Regeneration and healing products for use in **veterinary**,
- medicine **Cosmetic** care and regeneration products,
- Products to support **agriculture**,
- Products for the regeneration of **plants**,
- SANOLIFE-PC plates, the anti-interference device for **computer monitors**,
- SANOLIFE-TV plates, the anti-interference device for the **television**,
- SANOLIFE-MW plates, the anti-interference device for **microwave ovens**,
- **Active Water-Filter** with "bio-energetic" improvement of the quality of water,
- PLT-FUEL-BOOSTER (**Car-Gasoline**)
- PLT-FUEL-BOOSTER (**Car-Diesel-oil**)
- PLT-FUEL-BOOSTER (**Truck-Diesel-oil**)
- PLT-FUEL-BOOSTER (**Bike-Gasoline**)
- PLT-FUEL-BOOSTER (**Boat/ship-**

Gasoline)

- PLT-FUEL-BOOSTER (**Boat/Ship-Diesel-oil**)
- PLT-FUEL-BOOSTER (**Heating-oil**)
(The purpose is to improve the capability of motors and save up to 28 % fuel/oil).

At the present time more than 2'000 products are available for practical use in the various fields of the above list.

Several research projects in different areas are still underway:

Development of an "information package" that stimulates and modifies specific microorganisms which improve the natural quality of waters (lakes, rivers).

Development of an "information package" that stimulates, modifies, and repairs specific microorganisms to improve the effectiveness of waste water treatment plants.

Development of an "information package" that stimulates, modifies, and repairs specific microorganisms and plants which transform and break down toxic substances from waste deposits and chemically contaminated ground.

Development of an "information package" that stimulates, modifies, and repairs specific microorganisms and yeasts which support highly cross-linked ecosystems and regenerate damage in forests, and a few others that we shall not yet mention at this point.

March 1999

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