



LECTURE-2 (2-nd problem of functional vegetation)

MAKATS V.G.

ELECTROMAGNETIC FIELDS AS A NATURAL ENVIRONMENT OF BIOLOGICAL SYSTEMS

Expert of the highest level of the National Academy of Sciences of Ukraine, Doctor of Medical Sciences, Professor (European Center for Postgraduate Education, PA "Ukrainian National Academy of Natural Sciences").

Long-term observations of previously unknown biophysical phenomena have led to an understanding of their mutual dependence on the electromagnetic (EM) fields of the external environment. Later, their importance in the mechanisms of functional vegetative pathogenesis was established. But let's first of all consider the hypothetical EM-nature of the functionally active zones (FAZ) of the skin...

2.1. SKIN PHASE AS A FIELD OF BIOPHYSICAL EM-RECEPTION...

Field level of modern reality. Earlier we knew four levels of reality: 1st - solid, 2nd - liquid, 3rd - gas, 4th - fields and elementary particles (plasma). At the same time the fourth level of reality today is represented by five types of interaction. The first interaction is determined by the "fields of Gravity" (everything is subordinate to them, but they cannot unite molecules, atoms and atomic nuclei). The second interaction is caused by the "Electromagnetic (EM) fields", which are subject to all charged particles, Fig.2.1. The third interaction is caused by "strong" (holding protons and neutrons) and "weak" (holding electrons and neutrinos) nuclear interactions. Today we have added to them: "Torsion fields" - the fourth interaction is due to "torsion fields (spin)". There are no obstacles and distances for them, and the speed of their propagation is hundreds of thousands of quadrillion times higher than the speed of light (Fig.2.2) and "Information fields" (the fifth interaction is due to torsion fields). The discovery of the fifth interaction made it possible to develop a unified field theory (UFT), which grew into the theory of the "Physical vacuum" (G.I.Shipov, A.E.Akimov). This term represents everything that remains in space after the removal of all elementary particles. As a result we have not a void but a kind of "Dark Matter" (Fig.2.3) – a reality that does not contain electrons, protons and neutrons... The conclusion suggests itself that in the world of energy interactions (fields) the material part of the Universe is no more than 1%... Everything else (who knows what) consists of "dark matter and dark energy" (Fig.2.4).

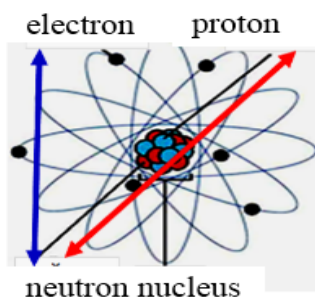


Fig.2.1

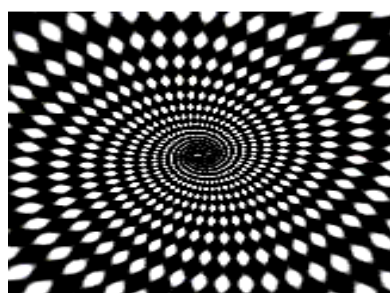


Fig. 2.2

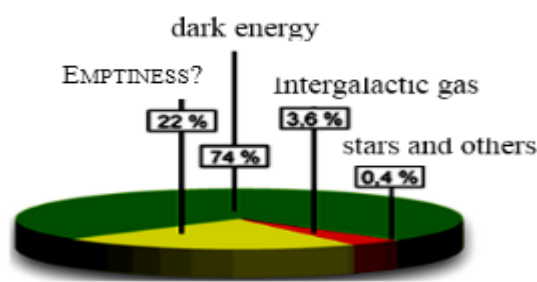


Fig.2.3



Fig.2.4

Of these "interactions", attention is drawn to EM-fields. And the reason is that EM fields turned out to be a common factor that unites the impact on the environment and internal biophysical transformations! They enter as an irritant understandable for biological systems, available for reception by the "functionally active zones" (FAZ) of the skin surface. Let's consider in more detail the given assumptions...

Biophysical reality of FAZ. The biophysical reality of "acupuncture zones" is beyond doubt today. They are on the surface of the skin and internal organs, characterized by low electrical resistance (20-250 k Ω), high capacitance (0.1-1.0 μ F), high voltage potential (up to 350 mV) and constant current recording (0.5– 30 μ A), the characteristics of which depend on the parameters of the external electric field and the physiological state of the organism. FAZ are characterized by intense metabolism, increased absorption of CO₂, infrared radiation and a certain direction of electrothermal bioenergetic transformations. They remain on the skin for a long time after biological death.

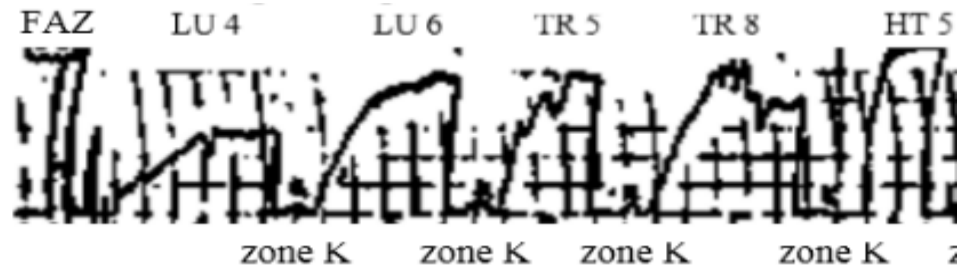
The phenomenon of FAZ migration was discovered (the less frequently they are located, the greater the distance they migrate). According to the researchers, it is observed in the equilateral triangle zone and is confirmed by infrared radiation. Daily observations recorded the geometry of their displacement after 12-14 hours.

Research carried out at VNIIOF revealed low-frequency (0.1–15 Hz) electrical signals in the FAS region, the intensity of which fell sharply when the sensor exited the zone and had an anisotropic character (data from neutral areas were isotropic and had the character of spectral noise). At the same time, the synchronous signals of the same FAS had different spectral portraits, and the influencing factors caused a significant change in their parameters in amplitude and spectral composition. At the same time, the signals from the neutral zones remained unchanged, which confirms the presence of a specific information system in biological objects, the receptors of which (EM-transformers) are FAS.

The biophysical characteristics of some FAS depend on biorhythms and environmental conditions. They are provoked by light, sound, weather changes, magnetic surges, depend on cosmic radiation and are associated with periods of Lunar and Solar activity, physical and emotional stress. Functional pathology and stressful situations are accompanied by an increase in electrical conductivity, the normalization of which correlates with recovery, that is, the activity of FAZ depends on the functional state of the body and differs significantly from each other.

Interesting information from the Novosibirsk Research Institute of Experimental Medicine about photoconductivity of the FAZ in the 0.35mk UV zone. At the same time, a through movement of positive charges with an activity of 10⁻⁴ cm g/s was recorded. Confidence is formed that the synchronization of oscillatory processes of different energetic nature functionally unites the organism and the environment into one integral system. Such a mechanism should be universal and suitable for understanding the dependence of the functional state of the organism on solar activity, the voltage of the geomagnetic field and the polarization effect (reflected by the Moon of the solar radiance). In addition, it was found that the activity of the FAZ regularly changes during the day, repeating the phasic nature of the electromagnetic disturbances of the Sun and the Moon.

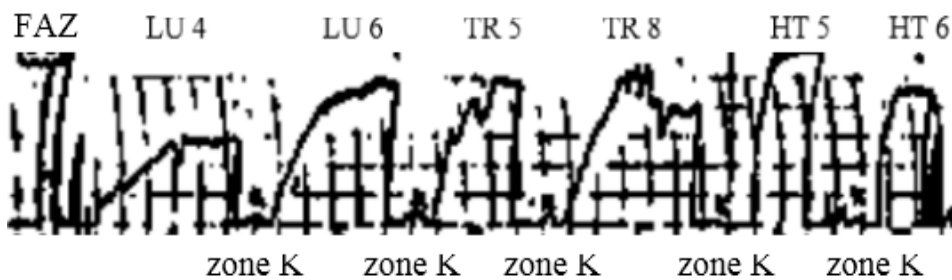
At the canonical depth of the FAZ, action potentials are recorded with a duration of 0.3-0.5 MS, an amplitude of 300-900 μ V and a dynamics of a flowing frequency of 0.5-100 Hz. It should be noted that their bioelectric activity has nothing to do with electrical muscle or nerve phenomena. This is evidenced by the recording of action potentials from areas of the auricle of humans and animals, which is devoid of muscle fibers. Most interestingly, the prototype of FAZ was found in plants without a nervous system! They are located in two rows parallel to the leaf midline and along its edge and are biophysically similar to human FAZ. The study of the bioelectrical activity of FAZ using electrodes of donors (+DE) and acceptors (-AE) electrons confirms the reality of biophysical phenomena.



Action potentials in the area of FAZ and control (K) skin areas (under conditions of the DE-AE electrode pair)

At one time, we re-recorded strange biophysical features of age spots (moles, nevi). As in the area of FAZ, in the center of pigment spots, a decrease in resistance, a significant asymmetry of reverse electrical conductivity and the presence of directed bioelectric activity between individual pigment formations are constantly observed.

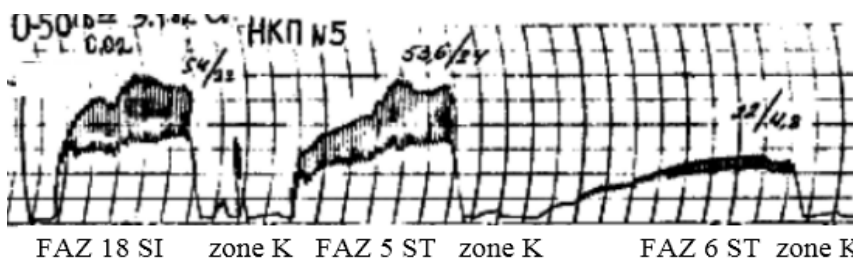
Pigmented zones in the arms, face, back



Action potentials in the area of pigment spots and control (K) areas (under conditions of the DE-AE electrode pair)

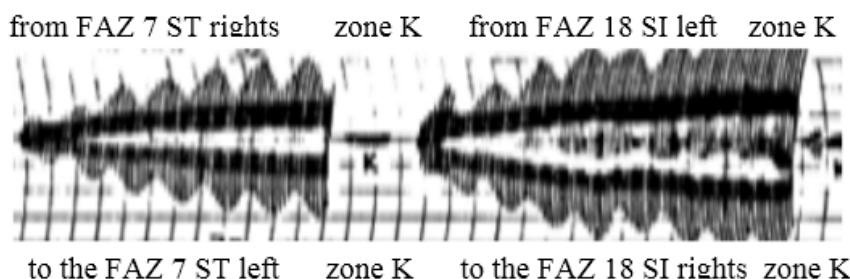
Their biophysical features, together with the known ability of melanin to stabilize radicals and participate in electronic transport, indicate the energetic essence of these phenomena.

Phenomenon of bioelectric conductivity of the FAZ. Traditional AC and DC sources were used to identify it. It turned out that FAS conduct an electromagnetic (EM) "test signal" by reducing their amplitude and not transforming physical features (shape)! At the same time, the dependence of the FAZ area (in mm²) on the conduction of alternating or direct current and the use of an electrode pair of a donor (+ DE) and an electron acceptor (-AE) was revealed. It becomes obvious that the use of traditional sources of direct and alternating current causes the initial excitation of the FAS, which is unacceptable for diagnostics! Our studies have revealed unknown biophysical features of FAZ.



Electrical conductivity of DC FAZ

*Bilateral
AC conductivity
sinusoidal shape.*



*The electrical conduc-
tivity of a rectangular
AC FAZ.*

1) The movement of electrons in the external circuit depends on the contacts of the electrodes +DE and -AE with the FAZ. Their violation inhibits the bioelectric activity of the external circuit to 97.8%.

FAZ area as a reaction to current and DE-AE electrodes

Example	Current	Area FAZ in mm ²					
		SI-20	ST-17	LI-18	TE-8	PC-4	GB-2
S-ko A.	Constant	8 mm ²	4 mm ²	3 mm ²	4 mm ²	5 mm ²	4 mm ²
	Variable	3 mm ²	15 mm ²	5 mm ²	6 mm ²	5 mm ²	4 mm ²
	When DE-AE	1 mm ²	1 mm ²	1 mm ²	1 mm ²	1 mm ²	1 mm ²

2) The maximum bioelectric activity occurs between the "single-channel FAZ".

3) The biological system can simultaneously generate current in several independent and multidirectional bioelectric circuits.

The question arises: do the DE-AE electrodes act as a chemical current source (CHS)? Not! And this is evidenced by the following...

- If the electrodes DE and AE were CHIT, then in the circuit it would be constant. We have packets of different frequency oscillations, phase deviations and amplitudes...

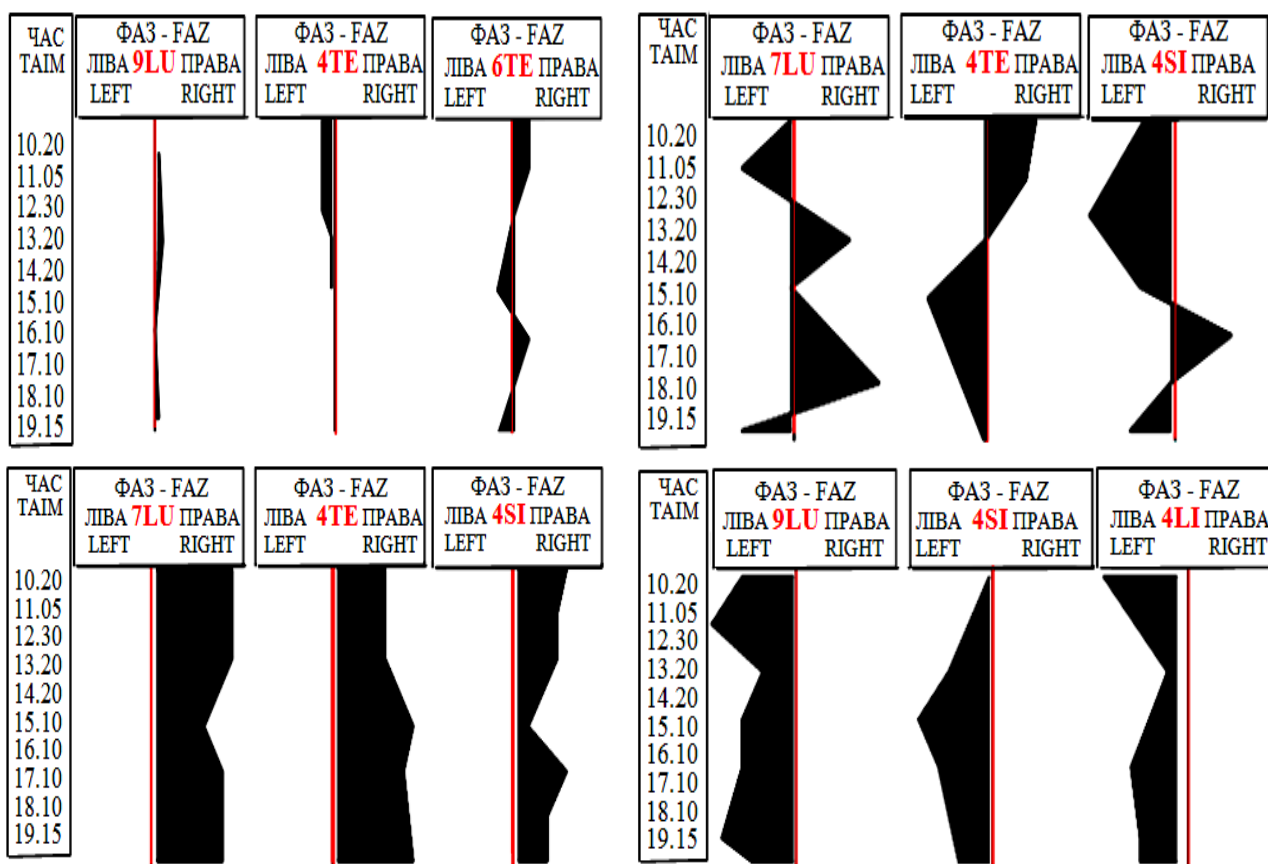
- Under the same type of conditions, the same electrode pair in different people causes different bioelectric activity (in amplitude, frequency and shape).

- The voltage of the external circuit is within 0.03-0.6V in relation to membrane potentials and does not depend on the size of the electrodes and the duration of exposure...

- Dynamic activity of representative FAS during observations...

- During the procedures, the bioelectric activity in the outer circle changes dynamically. Chemical sources of current do not give such dynamics...

Phenomenon of symmetric asynchrony of the FAZ. We have identified four types of temporal symmetric asynchrony: balanced (the activity of symmetric FAZs is practically comparable), bilateral (bioelectric activity of one of the symmetric FAZs periodically exceeds the other); right-sided (there is a predominance of the bioelectric activity of the right symmetric FAZ) and left-sided (the advantage of the bioelectric activity of the left symmetric FAZ). It is worth noting that the asynchrony of symmetric PHAs is always bilateral (only different periods of active duration).



Energy directivity of single-channel FAS. The traditional concept of Jing-LO "asserts the hypothetical reality of acupuncture channels" and their "centripetal" and "centrifugal" energetic orientation. We tried to find out the direction of the channel electrical conductivity by its bioelectric activity. Bearing in mind the principled nature of the issue, we present the technical conditions for studying the electrical conductivity of the channel: the parameters of the test signal (TS) are sinusoidal, uniformly variable, 1V, 2.5 Hz with a recorder sensitivity of 0.5 V / cm and a tape drive speed of 1 mm / s. Before each testing, the TC amplitude was recorded on the recorder tape, which was taken as 100%. The conductivity of the FAZ was calculated in% of the value of the TS.

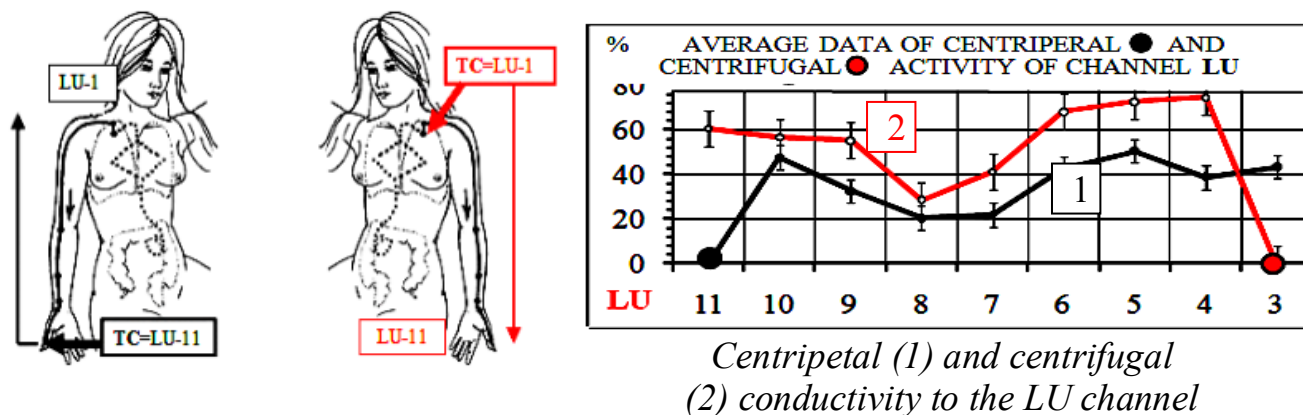
At the first stage, the TS was fed to LU11 (Shao-shan), and the FAZ of the channel was tested in order from LU10 to LU3 (centrally, against the canonical direction of the CHI, represented by a black line on the graph). At the second stage, the TS was fed to LU3 (Tien-fu), and the testing order was directed from LU4 to LU11 (corresponding to the canonical centrifugal orientation, indicated by the red line on the graph). As can be seen from the material presented, the experimental data biophysically support the canonical statement about the centrifugal energy direction of the acupuncture channel LU (Lungs). Preliminary findings...

1. Depending on the direction of energy carriers (centripetally or centrifugally), the activity in the outer contour of the channel increases significantly when the traditional and artificially initiated directions coincide.

2. The discovered phenomenon indicates the biophysical reality of the valve mechanism (the reality of the centrifugal direction of the channel).

3. 297 observations indicate the following: a) acupuncture zones of the LU channel

conduct signals with different amplitudes, without transforming their shape and frequency characteristics; b) breaking the contacts of one of the electrodes with the FAZ leads to a decrease in the value of the initial amplitude of the TS by 90.2-98.5%...



The phenomenon of directional transport of energy carriers is also real when using the DE-AE electrode pair. In this case, the maximum direction of bioelectric activity was at the position of the electron donor electrode (+DE) on LU3, and the electron acceptor (-AE) in turn from LU4 to LU11 (that is, when the traditional and artificially created directions coincide). Similar data were obtained when studying the directed activity of the ST centrifugal channel (Stomach).

The conductivity between zones ST5-ST7 and ST7-ST5 also testifies to the reality of the canonical centrifugal orientation. We would like to draw your attention to the fact that the study of valve effects has a significant perspective (our de-



"Test signal" from left ST⁷ to left ST⁵, and vice versa...



From central from 5-ST left to 7-ST left



To central from 7-ST left to 5-ST left

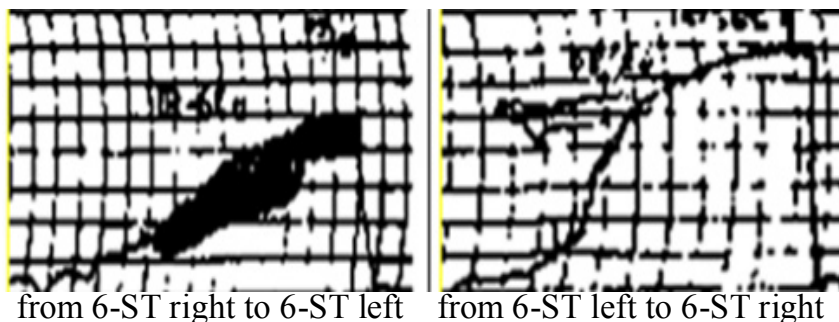


from 7-ST right to 7-ST left



from 7-ST left to 7-ST right

velopments act as a methodological aspect of the problem). The discovered specificity of electrical conductivity between symmetric (right and left) single-channel zones later turned out to be the phenomenon of "asynchronous activity of symmetric phase-locking devices" and is promising for further study of channel valve phenomena. In our opinion, quanta of visible light and UV trans-



mit specific information through neuroglia and membrane proteins through the skin FAZ and "acupuncture channels" to specific cell groups of internal organs and systems. Moreover, in the spectrum of

their waves there is always a length that imitates the wave of a protein molecule and can turn on (turn off) one or another gene. Today it is known that at a wavelength of 230-320 nm, the energy of two photons is accepted by an electron, emitted in the UV range and is sufficient to break chemical bonds and form free radicals.

Thus, EM transformations at the cellular-organ levels are considered as a multidimensional complex of subtle energies, which depends on external information impact. Considering the information component from the point of view of cybernetics, we note that it should be natural, specific and represent the level of control of the system and the laws of its functioning. In this regard, we will draw some conclusions.

1. The dynamically interconnected stability of the functional systems of the body should be considered from the point of view of the general laws of nature, its EM-openness and ability to self-preservation.

2. To influence a biological system, the necessary components of the influence, comparable to its biophysical characteristics.

3. The functional integrity of any complex system is ensured by the information-energy-information interaction, on which the coordination of control levels depends.

4. Biophysical transformations at the level of cellular structures depend on external energy-informational influences and are aimed exclusively at functional-vegetative adaptation.

5. Systemic paradoxical reactions, as independent mechanisms of informational control, provide coordination and dynamic stability of autonomic homeostasis. They are realized by the previously unknown "Functional-vegetative system" (FVS).

And there is nothing surprising here, because, according to theoretical concepts, the lack of influence is compensated by its information content. At the same time, to obtain controlled results, the following is necessary.

- Provide a biological object (organ, system) with a long-term energy-informational background, which corresponds to its biophysical level. Only under such conditions will the information signal become understandable and accessible in a state of functional stress and pathology...

- Any energy-informational impact factor should be biophysical, acceptable, understandable, corresponding to the stage of the pathological process and as simple as possible (meaning a fundamentally simple hierarchy of complex systems). Under these conditions, the secondary manifestations of most pathological processes disappear with the correction of the leading rhythms...

And, finally, the following about "low intensity factors" (PMI).

- Any biophysical processes are interdependent and depend on biospheric ones (na-

ture requires unity). Regulation of complex processes requires fundamentally simple control factors (like "yes-no; 1-0"). They must be biophysically acceptable for living matter, the existence of which is due to the balance of factors of activation, regulation and destruction. When a threat arises, the "A life" program prefers "destruction of a part in order to preserve the whole"...

From the point of view of the system theory, the process of formation of any dynamically stable state in biological objects should have the following components:

- regulatory mechanisms of general action (central regulation mechanisms, nerve centers, endocrine glands, immune organs, etc.);
- peripheral elements of implementation (smooth muscles, glands of the structure of the mucous membrane, lymphatic and hematopoietic systems, etc.);
- efferent connections (elements of signal organization and ways of its implementation, nerve ganglia and trunks, blood hormones, peripheral competent cells of the immune system, etc.);
- afferent connections (mechanisms of feedback and state support systems at a stationary level, an integral organism with a projection of a stable pathological portrait, etc.);
- a system of control and regulation of internal processes and their dependence on external fields (at the informational, energetic and biophysical levels).

Despite the above, our developments and published information have been hushed up at the official levels of the Ministry of Health and the Ministry of Education and Science of Ukraine since 2000. By and large, they "can be understood": it is impossible to deny a previously unknown biophysical reality, and its recognition necessitates appropriate correction of educational medical programs and review of modern therapeutic and rehabilitation concepts...

But what about the next situation when...

1. For the first time in a thousand-year history of development, the developed methodology "Functional vegetative diagnostics" made it possible to identify hypothetical "acupuncture channels", to prove their biophysical reality, vegetative essence and systemic dependence...

2. The reality of the systemic dependence of "acupuncture channels" and their complex organization revealed the errors of the traditional direction, destroyed the theoretical basis of traditional Chen-chiu therapy and created a problem of international importance...

3. The "Functional-vegetative system" opened in Ukraine claims to be the "lost biophysical link" between the autonomic nervous system (ANS) and EM-factors of the external environment. It logically fills the theoretical niche of natural science due to time, indicates the need to develop a modern biological paradigm about the essence of the Living, the meaning of field interactions in the system of functional and informational management of biological processes and necessitates professional attention to the problem raised. The discovery will sooner or later find itself in the center of classical systemic physiology and will determine the revision of the rehabilitation canons built on the principles of Newtonian mechanics. At the same time, we emphasize:

- the fundamental primary sources of Eastern therapeutic philosophy are lost in the depths of previous civilizations (as indicated by the universal consistency and systemic completeness of the open structure, which remained incomprehensible and unknown until

recently)...

- Western theories of "Pan nervism" and "Reflex therapy" have nothing to do with traditional acupuncture, the informational-vegetative essence of which is today biophysical argued...

- on the basis of the open "Functional-vegetative system", innovative directions are being developed today, in particular "Functional-age (clinical) vegetology" and "Functional-ecological expertise" (as a component of radiation monitoring of settlements of Ukraine). "The presented directions open a new page of information -Preventive medicine of the future...

Realizing that criticism of apologists without valid arguments is a thankless task, we pay attention to the following.

- Our conclusions are due to the experimental material (18,454 observations during 1976-2020), available for any analysis and control...

- The revealed patterns testify to the biophysical reality of "acupuncture" channels, their systemic vegetative and functional-complex organization...

- The structure of the "Functional-vegetative Matrix" becomes the pathogenetic basis of traditional Zhen-chiu therapy and requires understanding...

Our knowledge is addressed to those who do not accept the policy of "population reduction" and pay attention to the threatening state of the gene pool of their people. They are published based on the materials of author's monographs (2015-2021) and not have world analogues...

Let's draw some preliminary conclusions...

1. The vegetative physiology of the last century is based on the conditional mechanisms of the functional dependence of the ANS on environmental factors. Defending the dominant role of the central nervous system and the "reflex concept", it does not answer a number of modern questions...

2. The information provided allows us to recognize the FAS of the skin and internal organs as biophysical receptors of external (and internal) EM-information (as a lost link in vegetative physiology!)

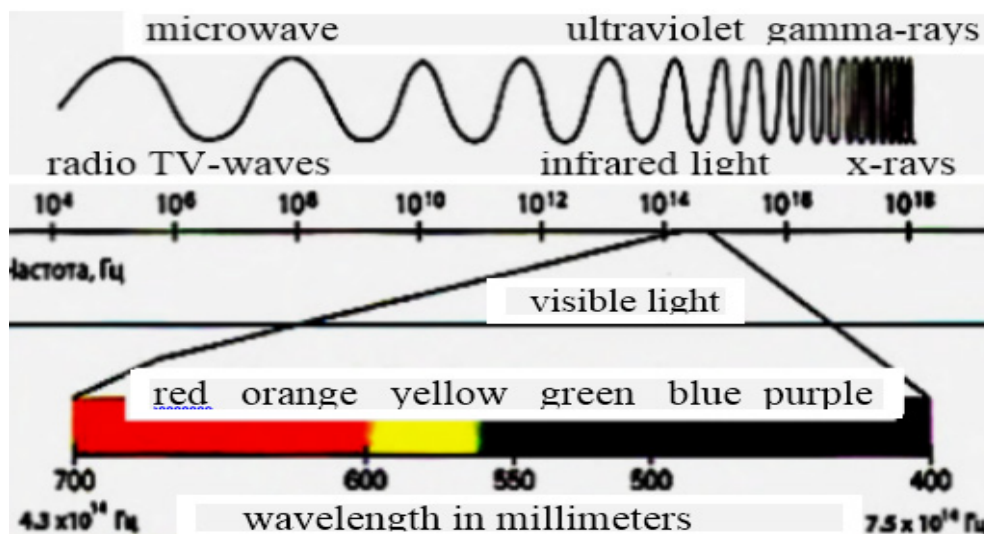
3. To avoid controversial discussions on modern problems of vegetative physiology, let us turn our attention to the biophysical reality of internal EM-transformations and EM-processes in the external environment.

2.2. INTERNAL EM-TRANSFORMATIONS AT THE LEVEL OF BIOLOGICAL SYSTEMS...

Biofields of living biological systems. The human body (like all living things) is an open EM-system, the energy-informational essence of which depends on external reality and requires an unbiased understanding. If we imagine the EM spectrum with a length of 2 m, then the visible range will be 1 cm (1%), and the average wavelength of the objects of our measurement (reference point) is 7.23 cm (it corresponds to the sound "Ohm"... Amen)... For a long time, Orthodox science denied the reality of subtle matter (biofields as biophysical reality, astral and etheric bodies and other esoteric terminology).

But... , the scientific journal "Bulletin of the Academy of Sciences of the USSR" (No.

8, 1983) says: "Around biological objects in the process of life, a complex field is formed, consisting of infrared and EM fields, high-frequency acoustic signals and luminescence (in the ultraviolet and infrared ranges)".



Modern science has recognized the reality of the Kirlian effects (plasma glow around a biological object between the electrodes of the high-frequency field)... "Aura-alization camera -300" (gas-discharge visu - GDV, USA) captures the human biofield within a radius of 1-1.5 m, makes a photo of his "aura", pulsating and changing color depending on natural terrestrial and cosmophysical factors. Here are photographs of the "GDV-Aura" people (archive of V.Tsipko)...

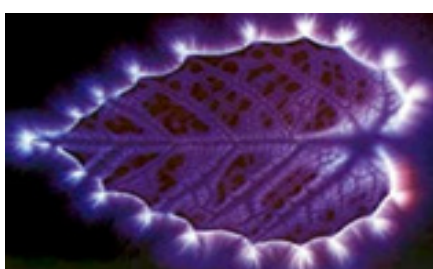


Today researchers distinguish the following forms of aura: individually physical, individually informational, collectively informational (aggregate aura of a group of people) and informational "aura of humanity", which forms a "global informational field of cosmic scale". The most interesting hypothetical assumption is "the existence of a person's information aura after the death of a physical body"...

The undoubted confirmation of the EM component of the biofield is the phenomenon of "biomagnetism" and natural "bioluminescence".

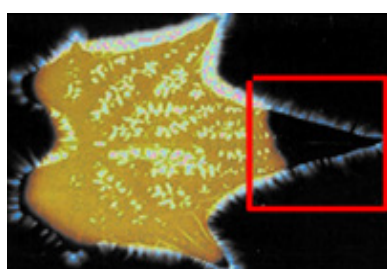
"Bioluminescence" (biologic fields of living nature) is the glow of living organisms that occurs in the photophores of fish and the cytoplasm of bacteria on the basis of chemical processes and is accompanied by energy transformations...

Biophysical reality of "field phantoms". Bioenergetic interactions are of particular importance for life, but they are more complex than the studied material processes and are not yet sufficiently understood. In a fundamental sense, the energy state of Matter reflects a matrix prolonged program. Such a situation is delocalized, covers a significant space and unites local material structures that are not capable of independent interaction due to their corpuscular nature (by the way, the interaction of corpuscles is always the interaction of energy fields). Examples of artifacts arising in a high voltage field (HVF) require close attention!



Phantom "Kirlian"

A "biofield aura" appears around the torn leaf in the HVN...



Phantom Dumitrescu-1 "

A fresh cut sheet in the HVN forms a "whole sheet phantom"...

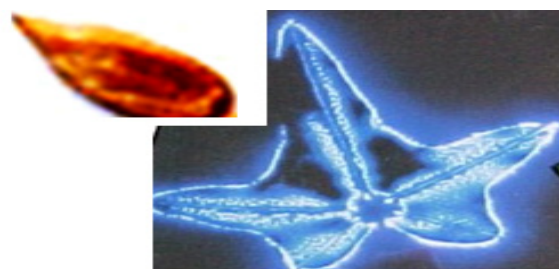


Phantom Dumitrescu-2"

In the HVN, I form a cut piece of a sheet with a "Whole sheet" phantom...



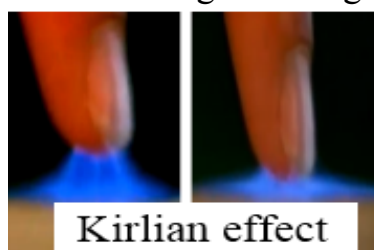
Phantom Dumitrescu-3" *If you cut a round hole in the center of the sheet, then a holographic "phantom - microscopy" of the sheet will appear in the HVN...*



Phantom "Burra" *H. Burr (USA) placed a buttercup seed in the HVN and received a "phantom of an adult flower". That is, the biofield forms a hologram of living Matter.*

Electromagnetic nature of biological systems. The well-known "Kirlian effect" indicates an increased concentration of electrical charges of biogenic origin.

The photographs record the decay of the electric field on the surface of the body, and each living organism forms a material field of a complex configuration, which changes depending on the chemical and physical state of a



person. Studies prove that a person's biofield (aura) changes significantly after acupuncture, and the changes refer to tension, color and range of emanation (the described effects are stable and suitable for objectifying the process of generation of physical fields by biological systems). According to Chien-Kanchmen, living Matter (animal, plant, microorganisms) emits energy in the ultra-high frequency range, with the help of which even genetic changes can be achieved. For example, from chicken eggs irradiated with ultra-high biofrequencies of ducks, chicks hatched with membranes on their legs, the shape of a duck's body and weighing 50% more than in the control group. In 1980y. at the Novosibirsk Research Institute of Clinical and Experimental Medicine of the Siberian Branch of the USSR Academy of Medical Sciences, the "Biocommunication" hypothesis was recognized as justified...

In recent years, there have been many works devoted to bioelectric phenomena (from 2-4 to 100 μV and more), and in humans they are observed in organs, skeleton and at the cellular level. It has been found that the backbone forms potentials in response to mechanical stress. In this case, the "compression zone" has a negative potential, and the "weakening zone" has a positive potential for active growth and restoration of bone tissue. It was noted that with fresh fractures, the potential of the bone tissue becomes negative with a maximum in the center of the injury and its value is 4-5 times higher than the norm. With the regeneration process, the trauma potential decreases, and the normal distribution of the electric field occurs around the time when the radiograph shows complete consolidation. There is information (B.Nordenstrom) that white blood cells constantly carry a negative electrical charge, forming a specific bioelectric circuit. The scientist believes that the bioelectric circuits in the human body are part of a system unknown to science related to blood circulation. Thus, from the point of view of biophysics, an organism is an open energy system, at the heart of which electrical and electromagnetic processes taking place in the external and internal environment take a significant place.

One of the known mechanisms of energy interaction is "resonance". It determines the emergence of specific rhythms of the "pendulum" (or "world") type. According to the leading rhythm, the launched "resonant" oscillations are mutually reinforced, while the "nonresonant" ones, on the contrary, damp out. This necessitates the existence of a fundamental mechanism of "mutual synchronization", which determines the presence of a regulatory system (its properties are described and patented by I.Blekhman). It is important for us to conclude that energy interactions form processes of synchronization, self-organization and self-support of biological objects in biological systems.

A biological system, which is located in a complex coordinate system of external and internal relationships, receives bioenergetic information that remains outside of our consciousness. Modern biophysical technologies only make it possible to assess the fundamentally limitless value and possibilities of energy-informational influence at the level of low-intensity factors (for example, activation of a separate gene in chromosomes during resonance interaction). In biological systems, at first glance, there are separate biorhythms (ECG, EEG, EMG, ERG), the disorder of which leads to functional pathology. It is clear that they are associated with autonomously isolated pacemakers and indicate the presence of separate development and control programs.

This raises a natural question: what ensures the synchronization of clearly directed rhythms? If we think about the nervous and endocrine systems, which at the biochemical level provide vegetative homeostasis, then what ensures their synchronous activity? What unknown system coordinates the integral function of the basic regulators? The questions are complex and necessitate a non-standard understanding of biophysical interactions and the search for processes and control and coordination systems.

Low-intensity factors (LIF) as the basis of EM-transformations. It is known that biological objects are natural generators, and any physiological process is accompanied by EM phenomena with extremely low voltage. The confirmation of cellular energy fields (biofields) was the "mitogenetic radiation" by A. Gurvich (1923). The latter is interpreted as a broad spectrum UF component arising from endothermic chemical reactions in vivo, has a low intensity and the ability to affect cell division. The two peaks found in the region of 230 and 320 nm indicate that the energy of two photons of simple light can be accepted by an electron and emitted in the UF range (by the way, the energy of UF photons is enough to break chemical bonds and form free radicals). Interesting were the works of R. Beckera, who discovered that at the cellular level, microcrystalline structures and trace elements can take part in "modulation of intercellular electric currents". Later it was found that exposure of cells to a weak galvanic current (20-40 μ A, 4-6 V) causes mitogenetic radiation in them. This means that external energy factors (for example, atmospheric electricity) can cause a significant activation of cellular biofields and thereby affect the state of the body. According to many theorists, the latter is due to the balance in the body of negative and positive charges (which, by the way, is similar to the eastern concept of YIN-YAN).

Despite the resistance of the apologists of Newtonian medicine, modern biophysics testifies: the basis of any biochemical transformations (including at the genetic level) is the energy-informational component of the optical range. So, Academician of the Russian Academy of Natural Sciences E. Chirkova proves that:

- signals that control gene activity are of a wave nature;
- protein structures of living cells generate immunospecific radiation in the optical range of EM waves;
- nucleic acids are UF radiation traps;
- Resonant characteristics are characteristic of cellular gene structures.

Of the supramolecular structures, the most interesting sources of EM-radiation are cell membranes. Due to the currents of action flowing on the background of membrane potentials, it is possible to generate coherent radiation within the range of 100-1000 GHz. Similar frequency oscillations are produced by the *Josephson effect* in protein structures. Oscillations of DNA molecules excite EM-waves in an aqueous medium, accompanied by oscillations of charges, and propagate like oscillations of dipoles of structured water. In turn, water dipoles, under the influence of an alternating magnetic field, generate oscillations that propagate in the dense medium of the body as sound (in this case, the photon length will be five orders of magnitude less than the wave of the initial EM-radiation). It is interesting that the dimensions of cellular structures (15 μ m-15Nm) are comparable

to the EM vibration, which is capable of producing photons with the same wavelength and frequency of 100 MHz -100 GHz... Thus, at the level of cellular structures, the transformation of one type of energy into another is possible.

Other mechanisms of cellular energy transformations are also known.

1) The orientation and vibrations of ferrimagnetic particles were found in the adrenal glands under the influence of a magnetic field...

2) The valve direction of the current, characteristic of all membrane structures (especially nerve and neuromuscular)...

3) Piezoelectric phenomena (changes in the linear dimensions of DNA, other macromolecules under the influence of an electric field)...

4) The phenomenon of **n**-shaped volt-ampere characteristics of tissues associated with membrane transformation of direct current into EM oscillations with a frequency of 0.5-910 Hz (detected in hemoglobin and albumin)...

5) *Effect Hall* - the appearance of an electric field when direct current interacts with a perpendicular magnetic field (proteins, whole bacteria, DNA)...

6) *Gunn effect* - conversion of direct current into high-frequency oscillations (1-10 GHz)...

7) *Makats effects* (phenomena symmetric asynchronousness of skin FAZ and channel valve conductance)...

8) photomechanical and photomagnetic effects...

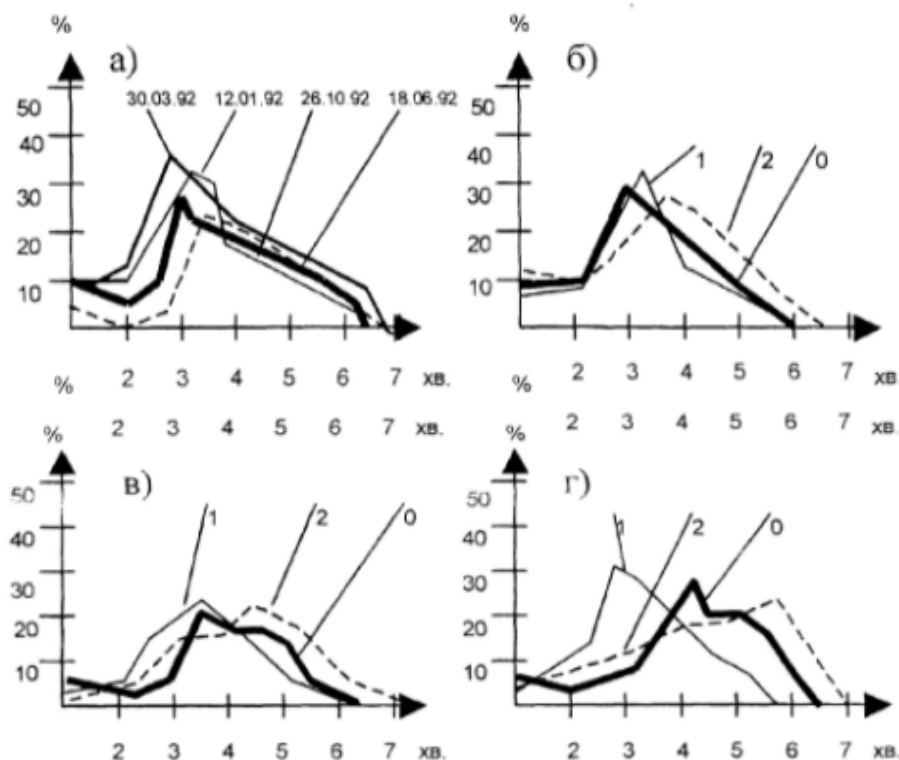
Today it is known that: biological structures absorb (emit) the energy of EM waves in portions (quanta) ...; mitogenetic and ultra-weak radiation of living cells belongs to the visible EM-range ...; living cells are characterized by coherent UV radiation, the variability of the spectral composition of which depends on the phase of the cell cycle. And if we assume that the chemical action of functional groups is associated with the corresponding monochromatic radiation, the paradoxical phenomena of photo- and radiobiology, the so-called effects of small doses, become clear. Finally, modern physics based on quantum theory and wave mechanics says: matter simultaneously has corpuscular and wave properties (the phenomenon of dualism).

Here it will be appropriate to recall the effect of "bioactivation without the use of external current sources" (BA) on some previously unknown physiological functions of the body (the factors of this direction are directly related to "Factors of low intensity - LIF").

Example-1. Bioactivation and acid stability of erythrocytes (ASE). Having developed seasonal norms, we studied the dependence of the acid stability of erythrocytes (ASE) from BA in a group of 58 burn convalescents, of whom 39 (1-2 observation groups) received BA in the complex of sanatorium-resort rehabilitation according to our methodology. At the same time: the 1st group underwent early rehabilitation (1.5-6 months after wound healing); the 2nd - late (from 7-8 months to 1 year after wound healing), the 3rd control group did not undergo BA.

The data obtained indicate the most effective effect of BA on ASE in the second group. Compared to the control group, the number of spherulation-modified cells signif-

icantly decreased (2.1 ± 0.34 versus 3.9 ± 0.22 ; $p < 0.001$) and the number of resistant erythrocytes (6.1 ± 1.18 versus 11.7 ± 1 , 72; $P < 0.05$) and the number of increased resistant erythrocytes increased (41.9 ± 3.1 versus 26.3 ± 2.04 , $p < 0.001$). When people are healed without the use of BA (Fig. B), at the beginning and at the end of observation, the zone of the maximum and end of hemolysis and the narrowing of its interval are noted in patients.



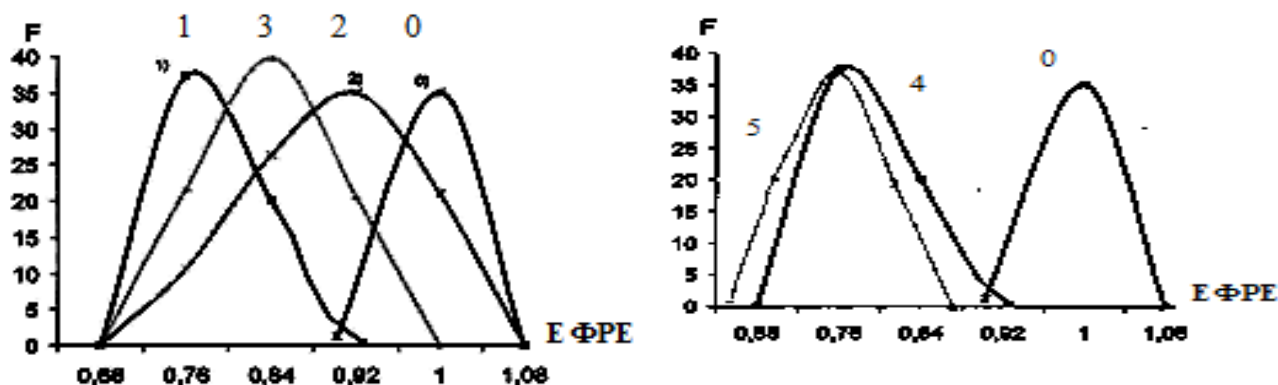
Note: a) seasonal standards for healthy people; Erythrograms: б) burn convalescents in the control group; c) early rehabilitation burn convalescents; d) burn convalescents of late rehabilitation. For figures "b-c-d": 0-seasonal norm; 1-before BA, 2-after BA

The noted modifications of erythrograms indicate physiological aging of erythrocytes, a decrease in the number of their young forms, a sharp inhibition of resistance and acceleration of disintegration, a lack of systemic equilibrium of blood due to a violation of erythropoiesis. In the observation groups (Fig. c, d), there was a sharp shift to the right of the zones of the end of hemolysis and eritrogram as a whole (up to 7.5 and 7 minutes, respectively) and a decrease in the zones of their maxima by 4.8%. This indicates the activation of regenerative processes, a decrease in the number of spherulatory modifications of erythrocytes in the blood, a decrease in stable forms and an increase in the number of erythrocytes with increased resistance.

Example-2. Bioactivation and electrophoretic mobility of erythrocytes. The issue was studied on behalf of the Minister of Health of the RSFSR, Corresponding Member of the USSR Academy of Medical Sciences A. Potapov at the Bashkir University during the elimination of the consequences of the explosion of a product pipeline in the BASSR. The electrophoretic mobility of blood erythrocytes (EME - the speed of their movement in the EM field) was studied on the "Parmokvant-2" device of the "Karl-Zeiss-Jena" company (Germany) by the method of V. Baronenko (1987)...

In the stage of acute burn toxemia EFRE of peripheral blood decreases sharply (to $0.74-0.76 \cdot 10^{-8}$ m²/s.u., at a rate of $1.10-1.24 \cdot 10^{-8}$ m²/s.u.; $p < 0.001$). After 40 minutes of

BA (general method), the distribution curve of erythrocytes by their EPME shifted to the right by more than two sigma and amounted to $0.85 \cdot 10^{-8} \text{ m}^2/\text{s.u.} \pm 0.06 \cdot 10^{-8} \text{ m}^2/\text{s.u.}$ ($P < 0.001$, 13% above baseline).



EME in the observation group: 1 for BA, 2 for BA. 3-after BA and strophanthin, F-frequency of fixation of erythrocytes.

0-EME of healthy people. 4-initial EPME in control. 5-in 60 min. F-is the frequency of fixation of erythrocytes.

At the same time, in patients of control group 2, it decreased by 2.6%, amounting to $0.74 \cdot 10^{-8} \text{ m}^2/\text{s.u.} \pm 0.01 \cdot 10^{-8} \text{ m}^2/\text{s.u.}$, $P < 0.01$. These changes indicate the activation of membrane sodium-potassium pumps of erythrocytes, which indicates the importance of cell membranes in the pathogenetic mechanisms of bioactivation.

The activity of membrane sodium-potassium pumps was judged by EME after exposure to BA and strophanthin (an inhibitor of sodium-potassium ATPase) added to a blood sample (in vitro) at a dose of 10^{-5}M . It was also known that it is possible to inhibit sodium-potassium pumps with strophanthin only after their preliminary activation. Indeed, after BA from a blood sample and addition of strophanthin to it, we observed a decrease in EFRE from $0.85 \cdot 10^{-8} \pm 0.06 \cdot 10^{-8} \text{ m}^2/\text{s.u.}$ up to $0.81 \cdot 10^{-8} \pm 0.01 \text{ m}^2/\text{s.u.}$ ($P < 0.01$). Thus, the following became clear.

1) In those burned in the stage of acute burn toxemia, there is a significant inhibition of the electrophoretic potential of peripheral blood erythrocytes, which affects their mobility.

2) Blood BA causes an increase in the electrophoretic activity of peripheral blood erythrocytes, stimulates the activity of sodium-potassium pumps of erythrocyte membranes and improves intracellular metabolism, which is essential in the rehabilitation process.

Example-3. Bioactivation and polarization fluorescence of tissues. Luminescence (physical interaction of fields with matter) is a manifestation of the light activity of its atoms and molecules, transferred to a stationary excited state. This is a quantum process in which atoms (or even molecules) move from one energy level to another and release the excitation energy of the quantum. The phenomenon is considered from the standpoint of solid state physics (Hall effect) and is associated with the anisotropy of DNA as a structure with liquid crystal properties.

The question arose: can bioactivation (BA) cause similar results in liquid crystal

structures of cryopreserved and lyophilized xenogenic skin? Both preparations were examined in the field of view of a polarizing microscope with photographic recording of polarizing fluorescence. At the same time, the analysis (Fig.2.5) clearly indicates the almost complete identity of the spectral curves of the studied xeno skin preparations before and after BA and a significantly higher luminescence intensity of the activated preparation (Fig. 2.6).

Taking into account the weak value of the current, its effect on xenoskin macromolecules cannot initiate trans-conformational changes,

as evidenced by the similarity of the spectral distribution of luminescence before and after BA. But growth an increase in the fluorescence intensity of xeno skin indicates the ordering of macromolecules with biosubstrates, which is most likely due to their spatial oscillation. In any case, this phenomenon reflects the orientational effect of BA on the macromolecules of the skin substrate. Intensification of its luminescence, as a reflection of the process of electronic excitation as a result of BA, causes an increase in the ability of bioactivated xeno skin flaps to engraft.

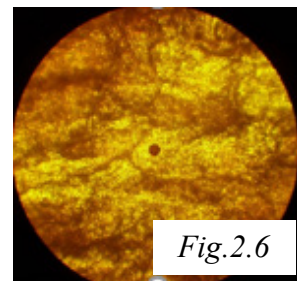
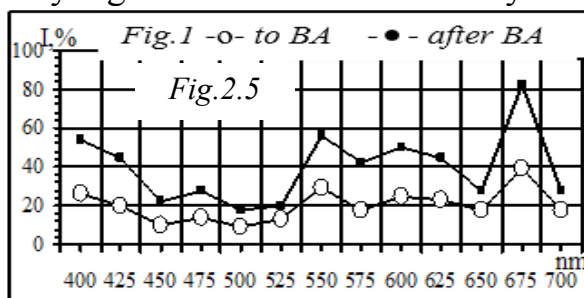


Fig.2.6

Mechanisms of exposure to low-intensity EM factors (LIF). The phenomenon of high sensitivity of biological objects to external LIF unites them according to the principle of safety and predictable positive impact. The fact that the number of studies in this direction is insignificant does not mean that it is futile. The present day insistently requires an informational and energetic understanding of these factors and an urgent rethinking of therapeutic and rehabilitation concepts.

From general theoretical concepts it is clear that the lack of "power of influence" can only be compensated for by its "information content". At the same time, it is necessary to obtain a result (in particular, in BA).

1) Provide a biological object with a constantly acting EM-information background, which will determine the transition from the initial state to the final result (should be long-term and related to the biophysical norm). Only under this condition will it become acceptable and understandable in a state of functional stress and pathology...

2) Discuss the long-term (logical) interaction of the EM-factor with the mechanisms of vegetative pathogenesis (frequency or amplitude modulation of the driving frequency, resonances of the oscillatory process, etc.)...

As scientific observations have shown, biological systems are extremely sensitive to natural factors: magnetic fields with an intensity below the natural background level, weak EM-radiation, exposure to light, insignificant DC and AC currents, and the like. High biological effectiveness is observed in the examples of acupuncture, homeopathy and herbal medicine. At the same time, it is clear that the insufficient strength of LIF is compensated by the informational type of their impact on a complex biological system. From the standpoint of systems engineering and cybernetics, the possibility of its transi-

tion to another level of response is beyond doubt. An example is the cases of "independent" exit of a biological system from a pathological state, although the mechanisms of this phenomenon, to put it mildly, are poorly understood. It should be expected that functional and informational influences will allow a new approach to the rehabilitation of many pathophysiological conditions, avoid typical complications of routine physiotherapy and substantiate modern rehabilitation methods.

Currently, to eliminate the pathological condition, means are used that are far from optimal for the biological system. They can be characterized as force effects: elimination, blockade, exclusion of individual elements of the system (use of hormonal and neurotropic drugs); destruction of efferent and afferent connections (surgical interventions), various means of symptomatic treatment. The use of new immunological drugs and specific allergens, which often lead to the development of polyvalent dependence and other side effects, are not entirely adequate to the principles of safe therapy, which is very clearly seen in the example of bronchial suffocation.

Force effects lead to complex functional complications: – the emergence of a new type of influence on the pathological process...; the development of pharmacological dependence (transfer of a pathological state to a new level of regulation and implementation, because there are fundamentally many compensation mechanisms in biological systems)...; chronic course of the pathological process (the formation of new symptoms and syndromes, the growth of the state of inevitability)...; the development of concomitant pathological syndromes. In this regard, the following points of management should be remembered.

3) The energy-informational influence is formed as a long-term and functionally directed influence on the damaged organ (system)...

4) The influencing factor must be biophysically adequate for a given level with its frequency or amplitude modulations (including the time change of the phase of the oscillatory process and polarization, or the place of impact)...

5) Control and regulation of extremely complex and interdependent processes fundamentally requires an extremely simple and accessible means of control (by analogy with the cybernetic principles "yes-no", "1-0").

6) Biospheric processes are extremely complex, dependent and interdependent (Nature requires unity). Therefore, the control factor must have a natural origin, informational and energetic value and be understandable for living and inanimate matter.

7) The main principle of the existence of any system is dynamic the balance of the factors of its support and destruction (in different forms of functional activity). An incorrect attitude to the laws of Nature leads to the destruction of any system.

2.3. EXTERNAL FACTORS OF EM-INFLUENCE ON BIOSYSTEMS

2.3.1. ELECTROMAGNETIC ACTIVITY OF THE BIOSPHERE.

The biosphere as a term was introduced by E.Suess in the work "Face of the Earth" (1875). According to V. Vernadsky, the biosphere is the geosphere and the carrier of Life - the highest form of development of matter on Earth. Living organisms transform the

cosmic energy of the Sun into chemical earthly energy and create an endless variety of our world. Consequently, the biosphere is the shell of the Earth, which includes the atmosphere, hydrosphere, lithosphere and is inhabited by living organisms. At the same time, the biosphere in the modern sense is a global open system with its own "input" (the flow of cosmic and solar energy) and a specific "output" - the formation in the process of life of substances that have dropped out of the biological cycle. These are, in particular, coal, oil, sedimentary rocks and the like.

The structure and hierarchy of the biosphere. Any unit in an organized system is functionally subordinate (dependent) to a more complex one (located higher). Therefore, the structure of the biosphere should be considered from the position of the hierarchy (subordination) of its individual systems. M. Reimers (1994) offers the following principles for the formation of a hierarchy: duplication of relatively different-quality structures (the ancients said: the whole is greater than its individual parts); determination of the functional goal of the organization of the system within the framework of its connections with the environment and internal capabilities. The dimensions of the system (or the nature of the dimensions) are its spatial extent (volume, area) or mass, and the minimum (maximum) number of subsystems that ensure its integrity and the ability to self-regulation and self-healing.

Each of the hierarchical ecosystems (global, regional or local), in addition to spatial ones, also has temporal dimensions (system time is the period of existence of the processes that occur in it). The combination of the goal of the system, its characteristic time and space create the prerequisites for the operation of the "Law of Optimality". The renewal of the living matter of the biosphere takes an average of eight years (phytomass is restored in about 14 years; in the oceans, living matter is restored in 33 days, while phytomass is daily).

Vertical structure of the biosphere. Vernadsky's predictions about life in the ocean to the very bottom were confirmed when the bathyscaphe "Trieste" sank into the Mariana Trench at 10.919 m from the diving point (1960). Aquanauts at great depths saw life, which Vernadsky could only guess about: "Flat fish swam past the bathyscaphe, a red shrimp lay at the bottom. The bottom surface was covered with some kind of hillocks, probably created by living organisms. The ocean turned out to be inhabited to its greatest depths."

Life with an active metabolism rises up from the surface of the Earth, mainly up to 6 km. Above the upper zone of the biosphere is the so-called "parabiosphere". In this zone, microorganisms and their spores are accidentally brought in by air currents, which are not capable of active metabolism due to low temperature, low atmospheric pressure, space irradiation and the short-wave part of the solar spectrum. In the upper layers of the atmosphere (behind the parabiosphere), life is practically absent, but so-called "biogens" can be contained. This is the apobiosphere (analogous to the metabiosphere of the depths of the Earth with high temperature and pressure). Of particular note is the ozonosphere, which is called the "ozone shield". It is located in the stratosphere at an altitude of about 15-45 km. It determines its temperature regime and protects terrestrial organisms from

lethal ultraviolet radiation.

Analyzing the data on the lower and upper boundaries of the biosphere and their physicochemical conditions, A. Lappo (1970) identified three groups of factors that determine Life:

- 1) a sufficient amount of carbon dioxide and oxygen;
- 2) a sufficient amount of moisture, which provides enzymatic processes;
- 3) favorable thermal conditions (high temperatures cause protein denaturation, and low temperatures stop enzymes from working).

Thus, the vertical thickness of the biosphere in the oceans covers the entire water column and an insignificant bottom film of life, and on the continents - a thin above-ground and powerful underground layer. The entire earth's surface of our planet belongs to the biosphere, excluding, possibly, individual high-altitude areas covered with glaciers and waterless deserts. In other words, the biosphere is a layer of active life, the depth of which is about 12 km on land and 17 km within the ocean. On average, planetary life reaches only about 20 km. Comparison of the sizes of the Cosmos and the terrestrial anthroposphere will remind you of cellophane film, which is so easy to damage! It is even easier to damage its biogeocenosis, the thickness of which (aboveground and underground parts) for forest ecosystems is 20-60 m, and for meadow ecosystems - only a few.

Biosphere as an energetic entity. The well-known works of Vernadsky laid the theoretical foundations of modern biology and biophysics, giving the sign of the biosphere as a single interconnected complex at the level of individual populations and all life on Earth. In the problem of human interaction with the Cosmos and the external environment, the central issue is the energy system of biological objects. The outstanding scientist A. Saint-Dier wrote that life is an endless process of absorption, transformation and movement of energies of various types and meanings. Loved biological ecosystems need energy for: self-healing processes, obtaining information from the external and internal environment and transmitting it to the central nervous and endocrine structures, correcting biological processes and orientation, forming reserves of matter and energy. It is clear that these needs are met due to natural information and energy exchange, a prerequisite for which must be dynamic stability.

The source of energy on Earth is solar radiation, the kinetic energy of rotation of the planet and the Moon, and the energy of the earth's interior. It manifests itself at sea tides and is supported by the decay of uranium and thorium. Solar energy arises from the thermonuclear transformation of hydrogen into helium and enters the Earth in the form of radiant energy with a wavelength of 0.3-2.0 microns. An energy flow in the amount of 8.09 J/cm² per minute is constantly supplied to the surface of the atmosphere of our planet. This value deviates from the average value by 0.1-0.2%. The annual flow of solar energy to the Earth is 10,500 MJ/cm², 40% of which is reflected into outer space, 15% is absorbed by the atmosphere, 20% is spent on maintaining the geological cycle, 0.06% - on photosynthesis.

In the atmosphere, the main amount of radiant energy is absorbed by water vapor, in the hydrosphere, water, and in the lithosphere, rocks and soil. The solar radiation absorbed by the biosphere is spent on the maintenance of the vital processes of plants, fauna and

human society (it is partially dispersed in outer space). The main converters of energy in the biosphere are living organisms. Plants and the earth's surface absorb energy on average 5000 MJ/cm² per year. Energy transfer in the living matter of the biosphere is characterized by low efficiency from producers to consumers of the first order (herbivores) and is 10%, and from consumers of the first order to the second (predators) 20%.

It should be noted that L.Chizhevsky was the first to experimentally substantiate the hypothesis of the influence of cosmic energy factors on the function and vital activity of biological systems. The "heliobiology" developed by him in the thirties was comprehended and understood only with the beginning of space flights and became the basic idea of direct energy exchange between living matter and the external environment. Thus, bioenergetic interactions are of particular importance for life, but they are more complex than the studied material processes and have not yet been sufficiently understood. In a fundamental sense, the energy state of Matter reflects a prolonged dynamic program. Such a state is not localized, it covers almost the entire biosphere and unites material structures that are not capable of independent interaction due to their corpuscular nature (the interaction of corpuscles is always the interaction of certain energy fields).

Today it is possible to say that the phenomena of self-organization, self-regulation and self-healing are inherent in systems in their basic features. There is every reason to consider certain phenomena as "information" that permeates the ecosystem. It is conditioned by cosmophysical reality, it controls transformation processes in the genetic code of living organisms and their ability to adapt to changing environmental conditions. Thus, self-regulation of biosystems is provided by the internal processes of living things. In addition, the statement that all matter is energy makes it possible to consider any biological species as a dynamic energy system. With his famous equation $E=mc^2$ A.Einstein proved that energy and matter are two-fold manifestations of the same universal substance and form a variety of the environment, incl. and biological systems. Thus, energy is a general measure of the movement of all material processes and interactions. Whatever processes occur and the forms of movement are not carried out, the total amount of energy always remains unchanged. According to the law of conservation and transformation of energy, it is preserved in any process in an isolated biosystem, transforming only from one type into another.

2.3.2 ELECTROMAGNETIC ACTIVITY OF THE LITHOSPHERE.

Energy of the Earth. Carrying out the will of V. Vernadsky, in 1991. a cycle of unique heliometric studies was completed. As a result, it was found that the carrier of our life (Earth) is a Living entity; The Earth has its own energy field and its energy exchange processes are extremely intense; The Earth is a highly organized system, which in the cosmic hierarchy occupies a level much higher than man ... Look at the stone. We perceive it as a dead (inanimate) object. But if we examine it under an electron microscope, instead of the expected statics, we will see a rapid vortex of electrons, similar to a chaotic swarm! In a word, in his atoms everything is spinning, dancing and he is something unconditionally alive! From the point of view of modern quantum mechanics (nuclear physics), each subatomic lobe is endowed with consciousness. These particles sometimes act

as matter and sometimes as energy. This suggests that the consciousness of the particles is guided by something, because each of them must not violate the established order and not collide with others. Let us recall at least the Einstein-Podolsky-Rosen paradox, where each fragment of the nucleus "knew" what is happening at that time with its other fragments. But if consciousness is inherent in a fragment of the nucleus, then the atom itself has consciousness (that is, software)! The embedded information clearly defines the space beyond which electrons, nuclei, atoms and molecules have no right to leave. It also makes sure that the electrons do not come into contact with each other as they move and never touch the nucleus. So, looking at any stone lying by the road, we must understand that it is alive. It has its own life and vibration frequency, the period of which lasts hundreds of years.

Energy frame of the Earth. Even the ancient philosopher Plato (referring to previous civilizations) wrote: "The earth is like a ball, sewn from 12 pentagons and 20 equilateral triangles." The nodes of their connection are geo-anomalous zones, energy centers (chakras) of the Earth. They were described by dowsing operators of the Institute of Terrestrial Magnetism (IZMIRAN) under the direction of Doctor of Physical and Mathematical Sciences. Professor V.Lugovenko. In the western hemisphere, they found seven light chakras (receiving energy), and in the eastern hemisphere four times more. But there are twice as many dark chakras in the eastern hemisphere as in the western one. The main energy axis of the Earth passes through the poles, while energy is pumped into the North Pole from the Cosmos, and through the South Pole, "the energy it has spent" is released. This energy network actually functions and maintains the cosmos field.



According to Academician I.Yuzvishin. 1) The Earth consists of a network of natural information (positive and negative for flora and fauna) cells. 2) The Earth is a crystal of complex shape - an icosahedron (a combination of triangles and pentagons inscribed in a ball). 3) Like crystals the Earth concentrates energy on their tops (structures of Hartman, Kerry, Sanders, Piles, Gorchakov) and creates elementary cells up to a meter in size (like elements of computer memory, it forms the Information field of the Earth - a more powerful high-speed computer).

The collected facts indicate that the sides of the triangles are lines of force along which mid-ocean ridges, giant faults in the earth's crust, zones of seismic activity and mineral deposits are located. And modern science confirms some predictions. So, according to the hypothesis, along one of the edges of the icosahedron (passing through North Africa and Arabia) there should be a fault in the earth's crust. Images from the space Probe-5 showed the giant Bahador-Bahariya fault, which stretches from Morocco to Pakistan for 8000 kilometers. This creates confidence that the detected network reflects the external power frame of the Earth. But gravitational forces have given our planet a spherical shape. So it turned out that in the shape of the globe there is a force polyhedron inscribed in it, which can be represented in the form of a dodecahedron (with 12 pentagons) and an icosahedron (of 20 triangles). It was called the "Icosahedron-dodecahedral structure of the Earth" (IDSE). But are all IDSE nodes equal?

The 12 most active triangle vertices are marked. There is even an opinion that these

zones are "black holes" where matter disappears (in some zones - the Florida peninsula, southern Japan - ships and planes mysteriously disappear, which did not even have time to send a distress signal... by the way, the compass is not magnetic here, a geographic pole). However, if there are "black holes", then there must be "white holes" (where does matter come from)? The centers of triangles (terrestrial anomalies) in which chemical elements are concentrated are considered white. It was also noticed that the earth's crust is moving slowly from the centers of the triangles to their tops (for example, from Baikal to Pakistan). And now about this in more detail...

Geoanomalous zones as a geophysical reality. It is known that the main components of the terrestrial energy radiation are "geo-anomalous zones" (GAZ). They are sources of endogenous (from the bowels of the Earth) and exogenous (reception from Space) radiation: electromagnetic, thermal (infrared), microwave, torsion and other poorly studied energy fields, which are defined by the term "Psi-energy".

The modern concept of GAZ is as follows:

- 1) these are the nodes of intersection of the lines of force of the Earth's energy cage;
- 2) these are channels of vertical redistribution of EM-energy in the "lithosphere-atmosphere-Space" system;
- 3) these are channels for the redistribution of matter from the deep zones of the Earth to its surface;
- 4) it is a regulatory mechanism for the discharge of tectonic stress by means of EM-redistribution of excess energy into the atmosphere and ionosphere (which is confirmed by the presence of special energy and meteorological disturbances in the atmosphere above the GAZ).

GAS and lines of force of the Earth frame are determined using biolocation (dowsing) and modern liquid crystal devices designed by Professor Sergeev (St. Petersburg). When crossing the lines of force, they systematically record bursts of energy (by the way, many GAZ found from space on the territory of Kiev and confirmed the location of religious buildings in the network of direct energy lines). It turned out that GAZ (nodes of intersection of the Earth's lines of force) form a clear dynamic network of interconnected honeycombs, which has several levels known today:

- 20-50 m wide, passing through 2-3 km and coinciding with active geological faults;
- 3-5m wide, passing through 200-300m (dynamically active zones);
- 20-25 cm wide through 2-2.5 (Hartmann's grid), as well as several lower levels.

Studies have shown the impact of GAS on human health and divided them into geonegative (energy radiation of the Earth) and geopositive (energy radiation of the Cosmos). Mineral deposits and mineral springs are concentrated in geopositive zones, foci of flora and Life have arisen, birds fly to winter, accelerated growth is observed (burdocks in Kamchatka grow up to 3.5-5m up) and activation of positive physiological processes. In geonegative zones, on the contrary, negative processes are manifested (development of chronic diseases, sediment of buildings, increased corrosion of metals, etc.). Energy flows in these zones have extremely high permeability and practically nothing holds them back. Symmetrically opposite anomalies are noted in geopathogenic nodes: magnetic and the zone of maximum UV radiation; eddies of ocean currents and centers of atmospheric pressure; permanent areas of origin of hurricanes, etc... The structure of the Earth's energy

frame is associated with GAS. Geonomalous areas are indicated by existing maps of the official "Biogeolocation", for example ten geo-anomalous zones of "Sanderson". In five zones of the surface of the northern hemisphere and in five zones of the southern, the approach of the earth's core to the surface forms a colossal tension. Its displacement from the northern ring to the southern one forms a gravitational anomaly (like the "Bermuda Triangle")...

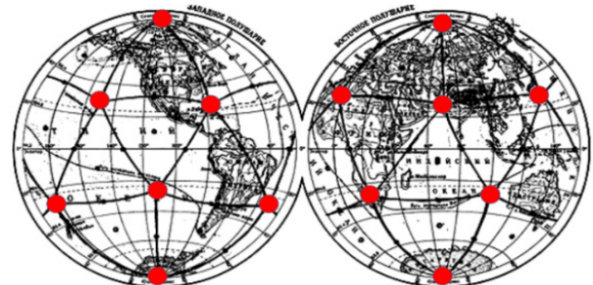


The dark zone between Florida, Puerto-Rico and Bermuda is constantly debated by scientists. But a rather logical and promising hypothesis about the phenomenon of the Bermuda Triangle was put forward by the scientist N.Korovyakov, who for many years worked as the Chief Designer of the Tula Research Institute of Weapons. In his mature

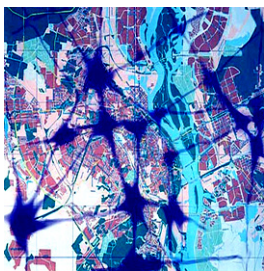


years, he plunged headlong into the paradoxes of physics, geology and astronomy. And here are the conclusions he came to. First of all, the Bermuda Triangle is not unique (there are nine more such zones on Earth). American hydrogeologist A. Sanderson has identified five equidistant regions at the 30th parallel of northern latitude, the so-called "Sanderson zones". On an imaginary section of the globe along the 30th parallel, they lie at the tops of a regular five-pointed star in relation to the pole, and misfortune (similar to Bermuda) occurs here an order of magnitude more

often than in other places. These are the notorious zones in the Atlantic and Pacific Oceans, off the coast of California, the Devil's Sea south of Japan, the mountainous region between Pakistan and Afghanistan, and the Algerian-Moroccan zone, which more than once swallowed whole camel caravans.



The southern hemisphere has its own five Sanderson zones (on the same parallel 30° , also distant from each other by 72° , but shifted in relation to the northern anomalous zones by half a step, that is, by 36°). Where did these zones come from? Sanderson could not understand the nature of these anomalies, and N. Korovyakov explained with the help of his



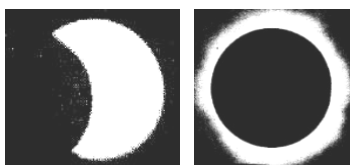
dynamic model of bodies that are in complex mutual motion and are attracted to the Sun. When we say that the Earth is attracted to the Sun, for some reason we forget that it consists of heterogeneous layers: the lithosphere (rocky shell), magma (hot melt) and the core (in fact, separate massifs). N.Korovyakov experimentally discovered that in five zones on the surface of the Northern Hemisphere and in five in the Southern, the approach of the core to the Earth's surface forms a colossal tension. These are the ten Sanderson zones. When the core moves away from the northern Sanderson ring and carries with it giant flows of magma, a gravitational anomaly is observed in these zones: the gravity of the Earth increases immeasurably and pulls any ship to the bottom. It's even more difficult with planes. A double cone of gravitational anomaly is formed over the Sanderson zone (it looks like a giant hourglass, with the point of adjoining peaks at an altitude of 11.5 km). If the plane flew into the lower cone, it, like a cannonball, crashes into the ground (or into the depths of the sea) with a wild speed. If the flight altitude exceeds 11.5 km, the car is thrown out of the atmosphere with frantic force and even the remains of the aircraft are not found. But in geo-anomalous zones there was another amazing phenomenon ("Breath of the Earth")...

Breath of the earth. Six thousand years ago, the Egyptian priest Hermes Trismegistus wrote in the "Emerald Tablet": "From the most distant heights of the sky, the universal Spirit gradually condenses and constantly flows to the Earth. This is her first breath. Emanation constantly rises from the Earth, cleansing it of the accumulated impurities. This is hers." exhalation. "For a long time this was perceived as a poetic myth, and only a few years ago this information found experimental confirmation. And this amazing phenomenon (breathing of the Earth) was" seen and described "by the dowsing operators of the Institute of Terrestrial Magnetism under the leadership of Doctor of Physical and Mathematical Sciences, Professor V.Lugovenko.

As already mentioned, the Earth's energy frame consists of large and small energy grids, the most famous of which are the Hartmann meridional grid and the Curry diagonal grid. The latter form honeycombs (2x2.5 and 5x6m, respectively), the dynamically variable distance between which reaches 80 cm and which were later called "binary". The width of the distance between them significantly changes during the day, season, latitude and depends on cosmic phenomena. As a consequence, there is a real periodic "expansion and densification of binary cells." This energetic phenomenon was officially recognized as the "breath of the Earth" and confirmed the information of Hermes Trismegistus. In mid-latitudes on a summer day, the interval between individual energy acts is 30-40 minutes, and in equatorial latitudes – 130'. The Earth makes its first deep breath at the rising of the Sun, greedily absorbing the light cosmic energy. This is manifested in the expansion of the area of geopositive (light) zones and the compaction of geonegative (dark) zones, after which the same strong exhalation is observed (the area of geonegative zones expands, and the geopositive zones become denser). The Earth breathes like a living being, absorbing the life-giving energy of the Cosmos and releasing its own internal energy. And this fact alone is worthy of surprise!

But it turned out that the Earth very clearly reacts to the phenomena of near-earth space. Thus, the appearance in the sky (March 1997) of the Hale-Bopp comet caused a reduction in the Earth's respiration period from 30-40 minutes up to one minute, which lasted until February 1998 and was observed by almost all astrophysical laboratories in the world. At the same time, the following struck. In 2001 specialists, recorded a new cycle of reduction of acts of energy respiration of the Earth, and when they found a new "space guest" in the sky - a comet that flew in from the direction of the Sun, being previously inaccessible for observation.

And again only the removal of the comet from the Earth's orbit normalized its energy cycle. A similar energetic activity of the Earth was shown by unique studies conducted on 11.08.1999 on the day of the significant solar eclipse. Oddly enough, the significance of the day was foreseen by Michel Nostradamus 515y back. Unlike his previous vague prophecies, he clearly indicated the date and content of the event, linking them with the coming to Earth of the "Great King of Terror", geological and social cataclysms. Scientists did not hide the fact that this prophecy fueled their professional interest and deter-



Eclipse phases

mined the scrupulousness of scientific observations. It turned out that when the Moon blocked the Sun, the Earth experienced a strong excitement. The parameters of her EMF have changed dramatically. Our planet, as it were, threw out all the accumulated energy into space.

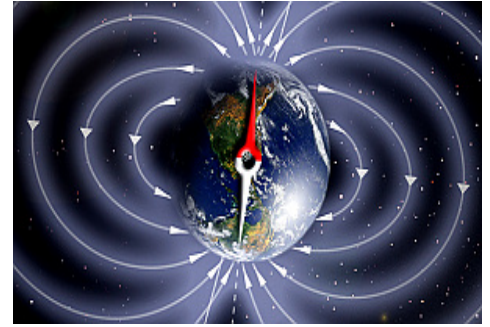
Then its potential began to decrease sharply and at some point it became equal to zero. After some time, the Earth gradually came out of the state of "clinical death", but its parameters became different: the vector of the Earth's magnetic field changed its direction, that is, our planet was revived in a different quality.

Why does the Earth freeze as a living organism when the Moon becomes between it and the Sun, casting its shadow on our planet? This is partially answered by the scientific association "Cosmopoisk", which together with the Institute of Terrestrial Magnetism under the "Breath of the Earth" program studies its EM-radiation. It is interesting that daily fluctuations, which are called "inhalation and exhalation", disappear with the setting of the Sun and are restored only with its first rays. But during solar eclipses, the parameters of the Earth's EM-field change in the same way in different regions of the Earth, from the Spanish Vigo in Tibet and Bratsk, even in places where the eclipse is not visible. One gets the impression that the Earth is a living organism, to the injection of which the whole body reacts in one place! Along with this, no less impressive were the results of measurements of the "breathing of the Earth" during a space experiment in the Moscow region, where, while determining the wind regime of the upper layers of the atmosphere, clouds of colored gas were periodically ejected from the satellite. At the same time, dowsing operators, measuring the Earth's respiration rate, saw that the Earth responded to each emission with a rhythm failure when an artificial cloud appeared...

By the way, of the consequences envisaged by M. Nostradamus after the solar eclipse, attention is drawn to the correlation of social instability and military conflicts in the Balkans (1999) and the Far East (2002-2003). Extraordinary earthquakes in Turkey and the United States, catastrophic floods (flooding of regions) in Ukraine, the Czech Republic, Germany, a tangible change in the climatic regime of the Earth. Scientists believe that a

change in the direction of the Earth's magnetic field vector will inevitably lead to global changes in the biosphere. There is an opinion that 08.11.1999 became the zero mark of a new evolutionary period on Earth - the era of Aquarius and the transition to the sixth race of mankind (primarily concerns the magnetic field of the Earth and its poles).

Energy of the Earth's magnetic field. In the 60s of the last century, spacecraft transmitted important information about the Earth's magnetosphere. It looks like a flask to return the bottom to the Sun, inside which the Earth is located at a distance of 10-12 Earth radii. The tail of the magnetosphere stretches for many million km, which is caused by the electron-proton solar wind blowing over it. The existence of a magnetic field is indicated by a compass needle, which always becomes parallel to the lines of force of the planet's magnetic field. It points exactly to the magnetic, not the geographic pole.



Magnetic meridians run from one magnetic pole to another, creating a complex system of winding lines. The Earth's magnetic field protects life on the planet from ionizing solar and cosmic radiation, which adversely affect the tissues and genetic apparatus of organisms. As geophysicists testify, in the geological history of the Earth, the magnetic field strength has repeatedly decreased and even the north and south poles have changed places. Such inversions have occurred more than once. Moreover, the current magnetic state (which is called the era of straight polarity) lasts about 700.000y and the strength of the planet's magnetic field is gradually decreasing. If this process continues further, then in 2 thousand years the magnetic field strength will decrease to zero and then begin to grow in the opposite direction. For living organisms, this can have catastrophic consequences associated with a change in their properties and extinction.

The earth's magnetic field is influenced by the phases of the moon. When the Moon is in full phase, the Earth's magnetic field bulges and deforms slightly. During this phase, people commit more murders, rapes, suicides and other crimes... Why? Because these fields strongly affect people in a state of emotional breakdown, who can hardly cope with themselves during normal times.

Magnetic pole drift. The South Magnetic Pole is a conditional point at which the earth's magnetic field (EMF) is directed vertically upward (at an angle of 90°). From a physical point of view, this pole is "north" because it attracts the south pole of the compass needle. The North Magnetic Pole is a conditional point at which the earth's magnetic field is directed vertically (at an angle of 90° to the surface). From a physical point of view, this pole is "south" because it attracts the north pole of the compass needle.

On the basis of studies of cores of the ocean floor, scientists have found that in the history of the Earth there have been many landslides of the poles from excursions (short-term changes up to 100 years) to complete reversals (when the North Pole became South and vice versa). They also visited the equator. Moreover, this phenomenon turned out to be of a regular nature: over the past 76 million years. the poles on Earth have swapped 171 times. And recently, the Earth's magnetic field has been experiencing unheard-of

changes. Researcher at the Institute of Physics of the Earth RAS, Doctor of Physics and Mathematics Professor R.Petrova testifies that we are living on the eve of a new inversion (according to her data, the last one was 700,000 rubles ago, and the next one should be expected in 5.000 rubles). By the way, according to the Mayan calendar, the next change in the axis of rotation of the Earth was to take place on December 23,12.2012, which is comparable to the calculations of some modern scientists: the transition period of 1998-1999, the peak of activation in 2002. And completion - 2012. Thank God it did!

Biblical sources have preserved three global floods in the memory of nations. The first happened 10-12.000 years ago. "And the earth opened up, says the legend... and the rivers flowed in the other direction". History has preserved the following information for us. At the beginning of the VIII century. (767 BC) Cimmerians lived in the steppes of the northern Black Sea region, information about which suddenly disappears completely. And after 50 liters. (717 BC) this area was already inhabited by the Scythians. What happened during this period of time? V.Medvedev (magnetologist, famous polar explorer) testifies: "I calculated the trajectory of the pole drift a long time ago, but scientific materials have not been published for more than 10 years. It is the turn of our planet by 90° that can explain the disappearance of the legendary Atlantis, which most likely lies under the South Pole. For the same reason, mammoths, which are found in the circumpolar zone with full stomachs of undigested plant food, suddenly died. In 1983 we scrupulously analyzed the logs of the navigators Cook, Wellingshausen, Kruzenshtern (almost 200 rubles), and the materials of our polar expeditions, which allowed calculate the trajectory of the drift of both poles. A curve has come out, which at intervals of 3.700-4.600 years encircled our Earth. At the same time, our calculations show that in 2.858 the South magnetic pole will again be at the equator...

And recently it became known that the main stages of the development of the Earth clearly coincide with the period of 3.600 years. This is associated with the mysterious planet Nibiru, which is located between Mars and Jupiter and has an ellipsoidal full rotation of 3.600r. It is believed that the magnetic poles drift under its influence, that is, they have a geocosmic nature. But if the South Pole crosses the equator in 2.858, then subtracting 3.600 rubles from this date we will be able to establish the date of previous geocataclysms (the calculations carried out confirm the accuracy of the biblical floods...). In addition to will, confidence arises: previous civilizations knew about floods, their causes and frequency. But did they try to convey this extremely important information to their descendants?

Once again on electromagnetic pole drift... Thus, it is difficult to believe in the hypothesis of Professor E.Muldashev. But judge for yourself: the ancient Indian epic Mahabharata testifies that the Earth is divided into regular triangles; found an expression of Platon about the Earth, similar to a ball sewn from pentagons and triangles; in Vietnam, models were found similar to IDSE, where all the edges and nodes are made in the form of small balls, and in place of the six main lines of force - holes.

The data of modern science have already confirmed some hypothetical predictions. According to the hypothesis, along one of the edges of the icosahedron passing through North Africa and Arabia, there should be a fault in the earth's crust. Indeed, the images of

the space probe-5 showed the presence of the giant Bahador-Bahariya fault, extending from Morocco to Pakistan for 8,000 km. A certain regularity in the location of the centers of ancient cultures is also characteristic. For example, the Egyptian pyramids were in the middle of the thigh of an equilateral triangle, at the corners of which and in the center were four more centers of ancient civilizations. Look at the map and you will see a strange system of anomalous regions where the Slavic civilization, the proto-Indian civilization in Mohenjo-Daro, the ancient Irish culture, northern Mongolia, Easter Island, ancient Peru, etc. are located. In the center of one of the triangles (Thailand, Vietnam) in recent years, traces of the oldest culture on earth (7.000 BC!) have been found. And near the Bahamas, where the corner of another triangle rests, signs of an unknown highly developed civilization were found under water... Thus, the collected facts indicate: the sides of the triangles are also lines of force along which mid-ocean ridges, giant fractures of the earth's crust, zones of seismic activity are located, mineral deposits...

But opponents have a question: what about the well-known Mid-Atlantic Ridge, which does not fit into the system of triangles and stretches across their edges? And this is not the only reason why they decided to connect the centers of the triangles with the midpoints of their sides. The new lines formed pentagons on the global grid (except for triangles) and the "recalcitrant underwater ridge" lay along the edges of two adjacent formations! Many other anomalous zones are also located (for example, the Baikal-Okhotsk tectonic belt, which is very rich in minerals). Today the found network is considered an external manifestation of the Earth's power frame. Where did he come from?! From the point of view of crystallography, an ordered structure is beneficial to any system, which retains the required minimum of energy; therefore, many substances tend to the crystalline state. It is logical that during the formation of the Earth, its energetic connections were lined up in an ordered system, similar to a huge polyhedron. But gravitational forces gave our planet a spherical shape. So it turned out that in the form of a ball there is a power polyhedron inscribed in it, at the corners and in the centers of which there are anomalous zones, centers of previous civilizations and ... cyclopean monuments of their culture.

And now about the discovery of E.Muldashev in more detail. In his expeditions the scientist collected extremely interesting factual material about Mount Kailash (Tibet), Egyptian and Mexican pyramids; the cyclopean structures of Easter Island and Stonehenge (England), the ruins of Quilmes in Tucuman (Argentina) and the Tazumal pyramids (Brazil), the unusual natural formations "Devil's Finger" in Wisconsin (the first USA national park) and the volcanic complex in the Sahara (Republic of Chad), the sunken pyramid in the Bermuda Triangle, etc (see photos). According to E.Muldashev, they were left to us by previous civilizations with a specific warning about a possible change in the poles...

Analyzing the locations of the gigantic structures of antiquity, the scientist noted the following features. Diametrically opposite Mount Kailash is Easter Island... The line through the "city of Kailash - Egyptian pyramids" leads to the "island of Pashi"... The line "Easter Island - Mexican pyramids" goes to "Mount Kailash" (the formed lines determine $\frac{1}{4}$ of the globe)... On the line "Kailash - Easter Island", which runs in the middle of this quarter, there are Stonehenge and the "Bermuda Triangle" (with a sunken pyramid)...

Along the line "Easter Island - Mexican pyramids" there are only "Devil's Finger" and the North Pole, and along the line "Kailash - Egyptian pyramids" only the "Tibesti Highlands" with seven extinct volcanoes, Tazumal and Tucuman. But the most unexpected thing happened later. The city of Kailash in India is considered the holiest place on Earth and religious sources have preserved unusual information about its height - 6.666 m. The question arises: why has it been kept for many millennia?

Now pay attention to the distance in kilometers between the specified structures of antiquity, confirmed by the Bashkir Research Institute of Mathematics of the Russian Federation (Ufa):

Kailash-North Pole – 6.666 km	Stonehenge-Bermuda Triangle – 6.666 km
G. Kailash-Tibesti – 6.666 km	Bermuda Triangle-Tibesti – 6.666 km
Egyptian Pyramids-North Pole – 6.666 km	Bermuda Triangle-Easter Island – 6.666 km
G. Kailash-Stonehenge – 6.666 km	o. Paskhi-Tazumal – 6.666 km
Stonehenge-Devil's Tower – 6.666 km	Mexican pyramids-Tazumal – 6.666 km

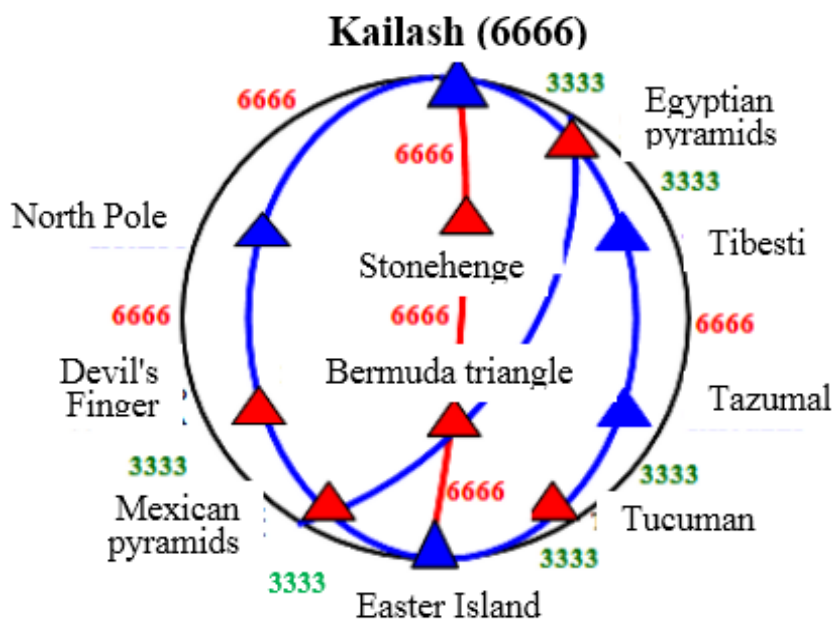
Along the circumferential lines $\frac{1}{4}$ of the earth's surface, there are no less strange coincidences:

... "Kailash-Egyptian pyramids" 3.333 km and "Egyptian pyramids-Tibesti" 3.333 km, and the city of "Kailash-Tibesti" 6.666 km and "Tibesti-Tazumal" 6.666 km...

... "Tazumal-Tukuman" 3.333 km and "Tukuman-Easter Island" 3.333 km, and "Tazumal-Easter Island" 6.666 km...

... "Easter Island - Mexican Pyramids" 3.333 km and "Mexican Pyramids – Devil's Finger" 3.333 km, "Easter Island – Devil's Finger" 6.666 km and "Devil's Finger - North Pole" 6.666 km and, finally...

... "North Pole - Kailash" 6.666 km. In other words, the cyclopean structures of antiquity form a geometric network dominated by the symbol 6.666... Did the ancients really know about the future displacement of the earth's axis by 6.666 km and on the site of the old North Pole built a pyramidal mountain Kailash with a height corresponding to this figure? Did our ancestors convey to us some particularly important information that concerns the fate of all subsequent civilizations?



BUILDINGS OF ANCIENT CIVILIZATIONS IN THE "GEOMETRIC NETWORK OF POLES"



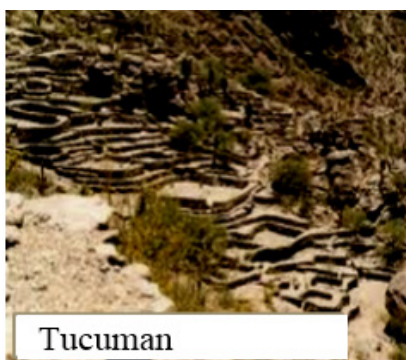
Bermuda triangle



Devil's Finger



Tibesti



Tucuman



Tazumal



Stonehenge



Easter Island



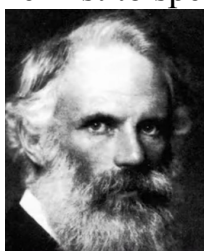
North Pole



Kailash (Tibet)

2.3.3 ELECTROMAGNETIC (EM) ACTIVITY OF THE ATMOSPHERE.

Schumann resonance (RS). Information about "Schumann resonances - standing EM waves" of low and ultra-low frequencies between the Earth's surface and the ionosphere has become available today. They are caused by lightning strikes in different regions of the planet, they exist for a long time, if after going around the globe they coincide with their own phase and "enter into resonance" (this phenomenon is directly related to the pathogenesis of functional vegetative homeostasis "... Irish physicist George F. Fitzgerald (1851-1991) and M. Tesla (1856-1943), who patented this discovery in 1905, were the first to speak about low-frequency oscillations of the Earth.

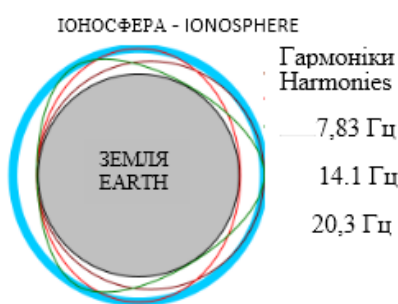


In 1952, Siegfried Otto Schumann (1888-1974), a professor at the University of Munich, published his famous works [20-22]. After reviewing them, the doctor G.König drew attention to the coincidence of the wave frequency of 7.83 Hz with the α -rhythm range of the human brain. The study of this phenomenon revealed a striking connection: the main

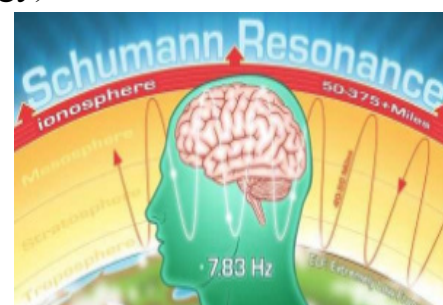
frequency of the RS corresponds to the frequency of the α -rhythm of the human brain - 7.83 Hz (Fig.2.3.3 (1,2), and the frequency of the second harmonic (14 Hz) to its acceleration. Waves with this frequency and their harmonics (14,20,26,33, 39 and 45 Hz) form "Schumann resonances" (Fig. 2.3.3(1-4). In other words, a person exists in the space of a resonator, the frequency of which is the standard frequency of our Planet and is necessary to synchronize the biological rhythms of the existence of all life on Earth...



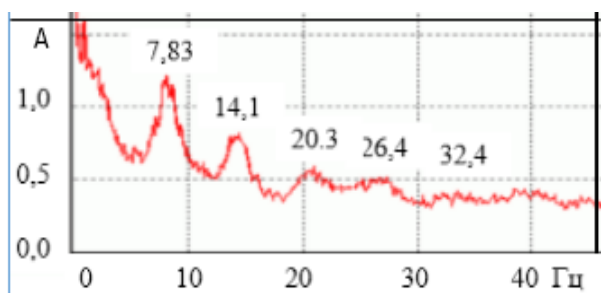
As background frequencies, they affect the vibrations of the human brain and are the basis of the rhythmic pulsation of the Planet and its biosphere. Today, the atmospheric EM-background has changed radically. The concept of "Electromagnetic smog" (different-frequency radiation of industrial and household appliances) appeared. There is so much "EM-debris" in the atmosphere that the body stops hearing the RS and causes a functional imbalance. In fact, within a modern city, research on this phenomenon has become impossible. Therefore, V.Ludwig conducted research in underground mines, screened from atmospheric RS. As a result, EM signals of fluctuations in the Earth's magnetic field were detected (its 28-day rhythm is associated with the revolutions of the Sun and the phases of Lunar activity). In his book Information Medicine, he described an experiment in which volunteers spent three weeks in an underground bunker shielded by RS reflectors. Three weeks later, the group developed emotional disturbances and migraines, which, after a short-term exposure with a frequency of 7.83, were eliminated. In the course of his research, V. Ludwig drew attention to the Eastern therapeutic philosophy. According to her canons, two signals from the environment are needed for healthy longevity: YIN (female energy) from below and YAN (male energy) from above. If we compare this teaching with the experiments carried out, then RS coincides with the "masculine energy" of the YAN, and the weak geomagnetic signals of the Earth - with the "feminine" YIN (both signals must be balanced)...



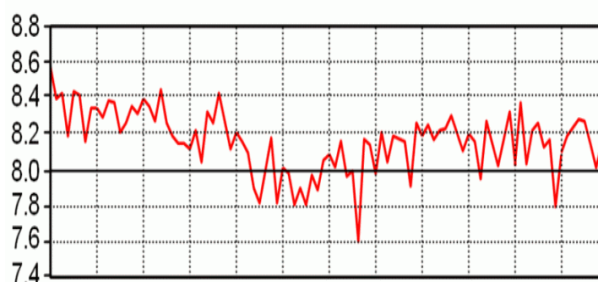
2.3.3(1)



2.3.3(2)



2.3.3(3)



2.3.3(4)

Fig. 2.3.3(1-4) Typical spectrum of EM vibrations with Schumann resonances



Fig. 2.3.3(5) Diurnal frequency harmonics of Schumann resonances (F1-F4)

Today laboratories are known where RS is studied (one of which is located at the Tomsk University of the Russian Federation). We used her daily observations to analyze the open functional-vegetative biorhythm. Attention was drawn to its similarity with the diurnal RS dynamics, Fig.2.3.3 (5-6), which is given in the hours of Tomsk summer daylight saving time (TLDC=UTC+7 h).

For comparison, let's take a two-hour vegetative biorhythm of BL-SP channels (female adolescent group; Full Month phase).

Solar flares change the EM-properties of the lower ionosphere. This causes a change in the resonance frequencies of the cavity and a disorder of autonomic adaptive mechanisms in children and the elderly. But the mechanism of this dependence remains unclear. The proposed scheme of two oscillatory circuits (man - atmospheric RS) makes it possible to raise the question of the nature of the "two-hour vegetative biorhythm"...

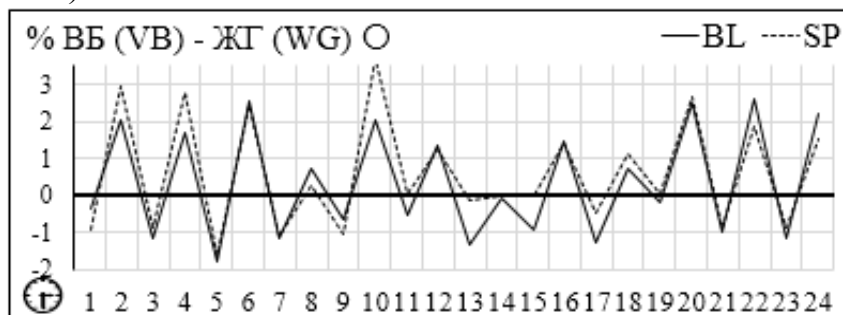


Fig.2.3.3(6) Two-hour functional autonomic biorhythm of BL-SP systems

Today we know that 7.83 Hz (the lowest RS frequency) corresponds to the α -rhythm of the brain, which exists within 8-12 Hz and determines the coincidence of the relaxed state of a person with the vibration of the Earth... But starting from the 90s, the RS frequency began to grow: in 2000 it rose to 12 Hz, in 2012 up to 14-15Hz and in 2019 reached 20 Hz. This unique phenomenon indicates an increase in the vibration frequency of the Planet and causes a change in the vibration of the brain with the frequency of the β -rhythm (the rhythm of vigor and active consciousness). If the RS frequency continues to grow, it will reach 30-50 Hz, which will cause the human brain to switch to vibration of the γ -rhythm (it seems that in the future, the frequency of 50 Hz will cause "complete

enlightenment - a person's exit from the sleeping state"). In other words, the transition of the Planet to a new vibrational regime prepares the biosphere for a "quantum transition"...

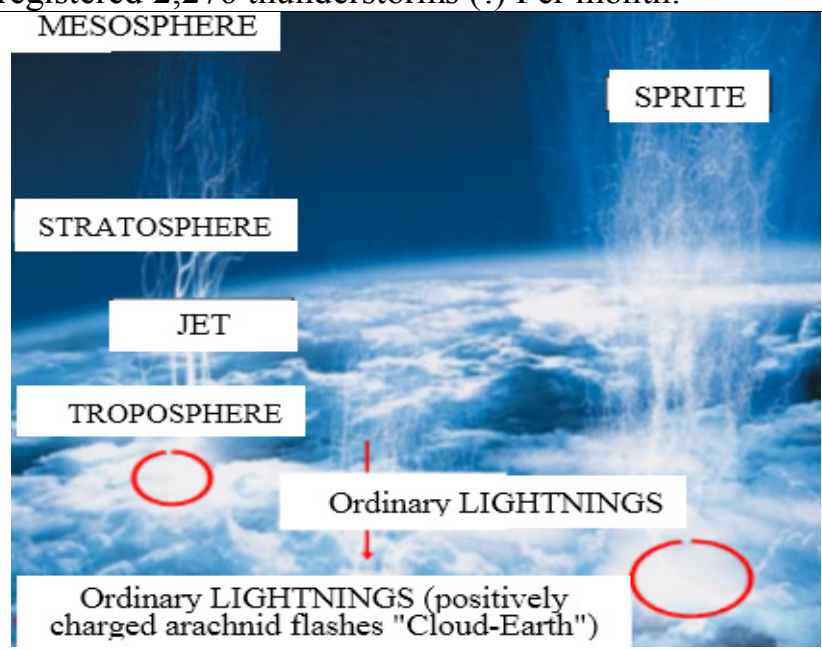
Lightning. Discharges from atmospheric electricity occur when the charges exceed the insulating effect of air. They can be inside a cloud, between clouds, or between a cloud and the ground. Lightning heats the air to a temperature of 25-27.0000, and the pressure in it rises to several thousand atmospheres. The frequency of lightning reaches 100 times / sec. (75% of them are between clouds or inside clouds).

The sound of the explosion is perceived by us as thunder after seeing the lightning. This is because light travels almost instantly, while sound has a speed of 330 m / s. You should know that lightning discharges are kind of catalysts for a giant spherical capacitor, life-giving paths between the ionosphere and the earth's surface. All the variety of life-giving processes is due to the electric field!



In 1989 high-altitude discharges were discovered - Elves, and in 1995 Jets and Sprites. Elves, Blue Jets and Red Sprites confirm the reality of the planet's global electrical network, which records everything that happens... Does everyone know that the potential difference between the earth and the atmosphere in clear weather reaches 120-130 V, the highest electric field voltage occurs at the end days, and at least 7⁰⁰? The less lightning discharges (positive charges) the plants receive, the sooner the crowns lose their leaves. About 40.000 thunderstorms rage on the planet per day, each second accompanied by 1,800 discharges. At the same time, at least 100 lightning strikes are discharged into the ground. In Finnish s.Orevikoski registered 2,276 thunderstorms (!) Per month.

But a threatening place is still on the Indonesian island of Java above the village of Bagor. Here, only a third of a year can do without a thunderstorm. Almost as rich in lightning in the west of African Kenya, where the east winds cause bad weather. A kind of magnets of lightning discharges is the Valley of Lightning in southern Bulgaria and with Auyan in Venezuela, woe to those who, during a thunderstorm, find themselves in



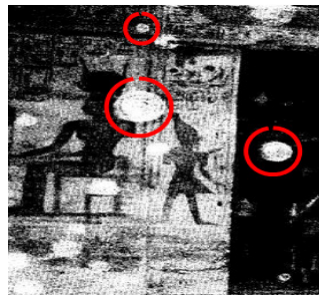
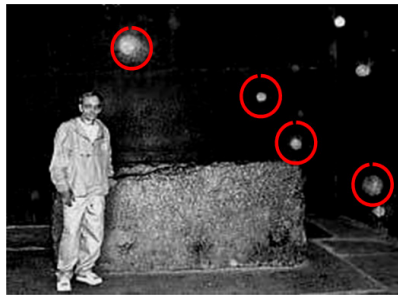
the "Unclean Power" gorge in Georgia. But if thunder can frighten, then the danger of being struck by lightning is well known, albeit liquid.

A distinction is made between direct injury (while at the top of a hill, in open space) and the effect of electromagnetic induction with the passage of an electric discharge at a distance of 1 m (for example, from a person sitting by a tree trunk at the moment of impact).



Aurora borealis – лумinescence of the magnetosphere under the "solar wind" (ionized particles of helium-hydrogen plasma (300-1200 km/s)...

"Balls of Prana" as an unknown form of atmospheric energy. They were found in digital camera images near the sarcophagi of the Egyptian pyramids...



"Balls of Prana" in the Egyptian pyramids (by E.Muldashev) ...

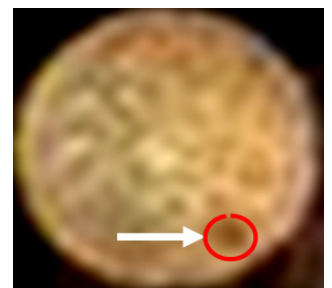
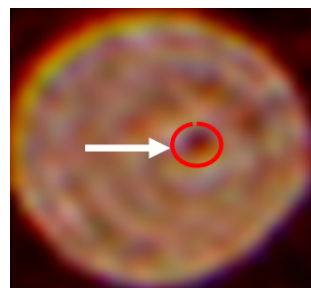
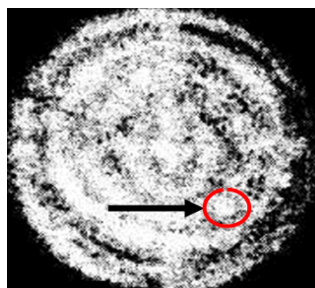
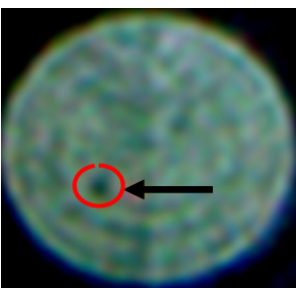
"Balls of Prana" in the temple of Egypt in Aiva Bibi mosque (Kazakhstan)...



"Balls of Prana" in natural conditions (Kamyanets-Podolsky, Ukraine) ...

"Balls of Prana" before and after the lecture (Ukraine, Vinnitsa) ...

Mysterious structure of "Balls of Prana"... Attention is drawn to the "granular" structure of the energy layers and the zones of their "centralization" (no comment)...



2.3.4. ELECTROMAGNETIC ACTIVITY OF THE HYDROSPHERE

(NATURAL GENERATORS)...

Water is capable of generating a current into an artificially created external circuit using chemically inert electrodes DE and AE!

Moreover, its ability to generate significantly differs from the known electrical conductivity. In the aquatic environment, the directionality of the charge carriers is realized from DE+ to AE- (Fig. 2.3.4 b). When a galvanic battery is included in the circuit (6P-E22, 12V; small 2.3.4 a), their transport depends on the polarity of the source and is implemented in the direction from (-) to (+). This regularity is also preserved when the battery polarity is combined with different variants of contact with DE, or AE. A closed loop through an aqueous medium was formed by various combinations of DE-AE electrode pairs with an external current source. In these cases, electromotive force (e.m.f.) the circuit was always directed from "-" to "+", the voltage fluctuated within $345 \pm 14 - 980 \pm 30$ mV, the current strength was 195 ± 12.3 and 6.000 ± 49.5 μ A. Changing the contacts of the external current source from -1 to + caused opposite deviations of the galvanometer arrow, Fig. 2.3.4(1), position 1...4

A specific situation arises when DE and AE are used without a traditional external current source. So, if in circuits with a pair of electrodes of the same type DE-DE and AE-AE (Fig.2.3.4 (6), position 5...6) water does not react and the galvanometer needle does not deviate, then the electrode pair DE-AE determines the directional transport of charge carriers (Fig.2.3.4 (6), position 7...8).

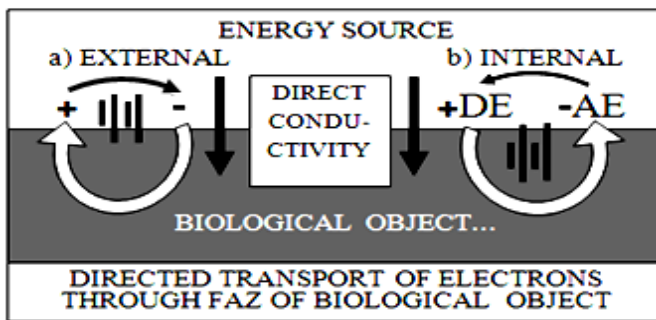


Fig. 2.3.4 (a,б)

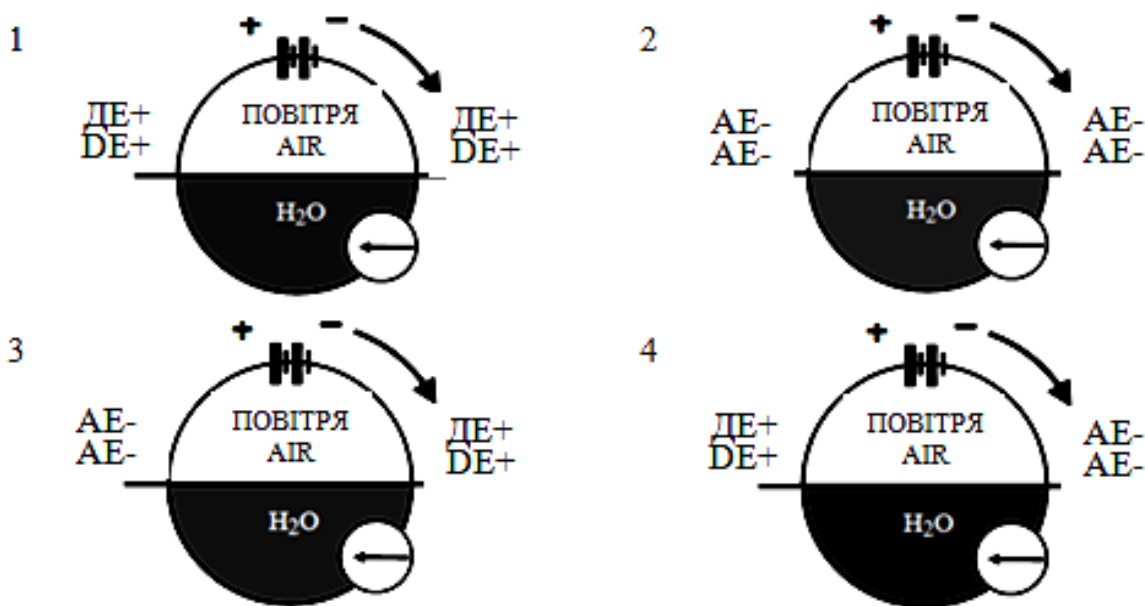


Fig. 2.3.4(1)

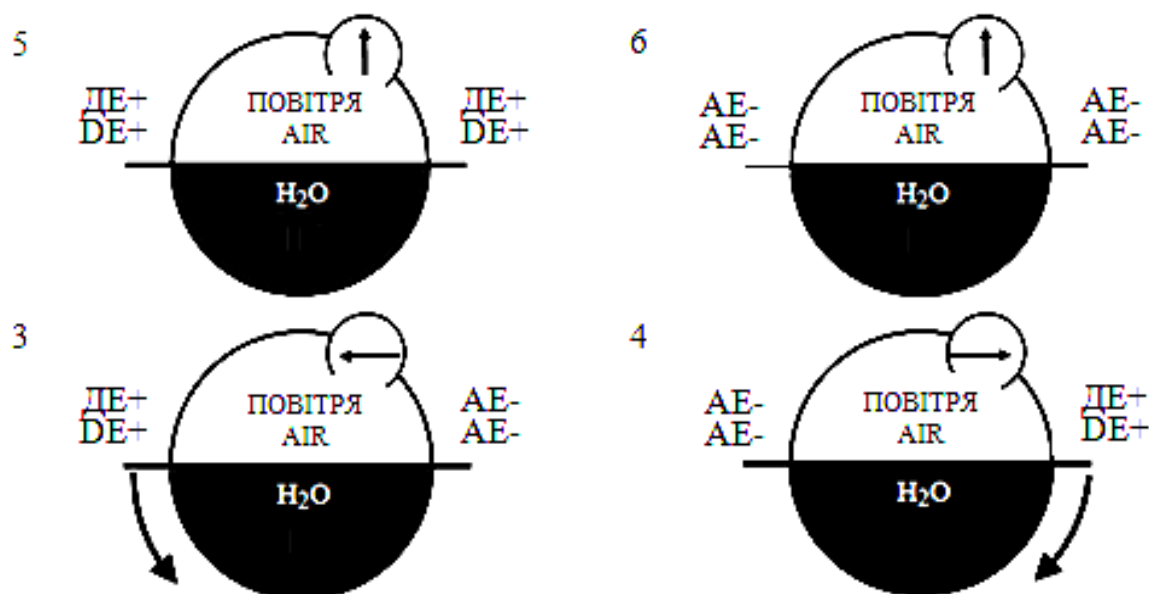
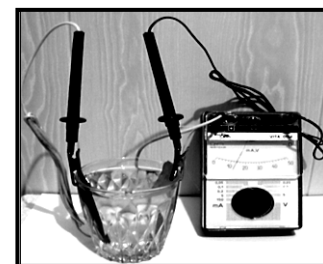


Fig. 2.3.4(2)

At the same time, their transport for any variants of the location of the electrode pair was always in the direction from the electrode +DE to -AE, maintaining the usual e.m.f. from "-" to "+" in the outer part of the circuit. In other words, we see that in our conditions water actually acts as a natural generator of energy. This raises an important question about the nature of charge carriers: electrons or ions?

It is known that the electrical conductivity of water is due to its ionic composition. But "deionized water" (from a Milli-Q unit from Milli-pore; USA) changed our confidence. The "deionization" process consisted of several stages: distilled water was passed through the first carbon filter (to remove organic compounds), two ion exchangers (mixed cation and anion exchangers), the second Super-C carbon filter (fine purification of organic compounds) and sterilization filters...

Despite the practical absence of ions in the obtained samples (the final concentration was brought to 18^{-10} ϕ 18 M Ω), the latter generated a current in the loop of the DE-AE electrode pair. In one of the experiments, with an electrode area of 8 cm², the generation of water was limited to 4 μ A. But after checking its electrical conductivity in a circuit with a battery ($I=45.4$ μ A), the generating capacity of water sharply increased to 40.8 μ A [in our opinion, due to additional saturation of the medium with electrons (ions?) From an external source...]. It becomes clear that water and composite systems based on it should have different generating activity. Indeed, if tap water generates up to 3.1 mA, then a 1.5% sodium chloride solution is 78 mA, and 3% is 140 mA...



Natural generation model based on aqueous solutions.

The activity of water generation depends on the area of the DE and AE electrodes. If a pair with the same (156 cm²) areas generates 146-310 μ A (214-584 mV), then a decrease in the DE area leads to a decrease in the current by 53.1%, and the voltage to 64.4%. A similar change in the AE area is accompanied by a slight decrease in current by 8.81%

and voltage by up to 2.4%, which indicates a practical absence of dependence. The current and voltage in the circuit do not depend on the distance between the DE and AE electrodes and the duration of generation. In one of the experiments, we observed the phenomenon for 52 hours. Insignificant fluctuations in current (227-235 μA) and voltage (360-391 mV) caused its termination due to the lack of reliable dynamics. And finally, the strength of the current and voltage in the circuit does not depend on the angular relationship between the electrodes. Thus, the DE-AE electrode pair is capable of initiating water generation. In this case, the current strength reaches significant values (210-16,000 μA) and depends on the area of DE +. Water is able to simultaneously generate current in different (independent of each other) external circuits. Let's give an example.

Several electrode pairs were placed in dielectric containers with water. Their areas were different, and the contours were located in opposite and intersecting directions (Fig. 2.3.4 (7)). In the first position, the activity of each contour was 450 μA and 260 μA , in the second - 470 and 280 μA , and in the third, 524 and, 320 μA . During three hours of observation, the data practically did not change, which justified the conclusion: water is capable of generating energy simultaneously in several independent and even intersecting directions! Water is capable of providing multicomponent generation with one common electrode DE or AE. In a complex circuit with a common +DE and three identical -AE, the activity of each new circuit decreased by 28.9-21.2% of the individually possible one. In this case, the total activity of the combined chain increases by 60.5-128.4% (Fig. 2.3.4 (8)).

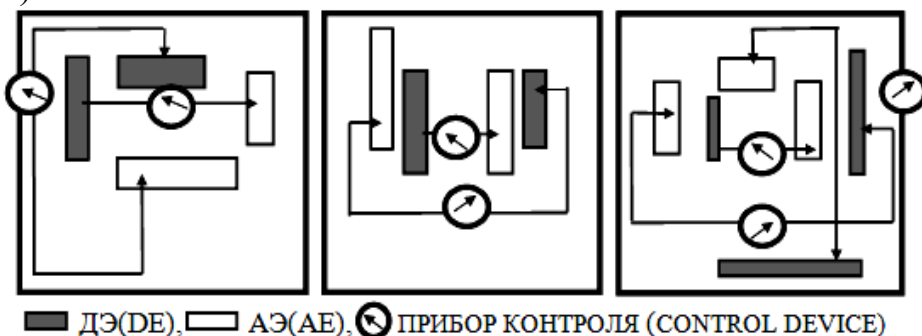


Fig. 2.3.4 (7) Ability of water to generate multi-vector.

of water generation depended on the total area of electrodes + DE. Thus, water revealed its next secret, being a natural generator of energy. And, most likely, it is she who provides energy-informational transformations at the level of the Living (the discovered effects are similar for liquid composite systems and biological objects). At the same time, it is worth remembering some water phenomena that are directly related to LIF and information transformations ...

In a circuit with a common electrode -AE and the same area DE + (Fig.2.3.4 (9)), the activity of each new circuit increases by 62.5-78.1%. The total activity of a complex circuit reaches 92.5-288.1.

That is, the activity

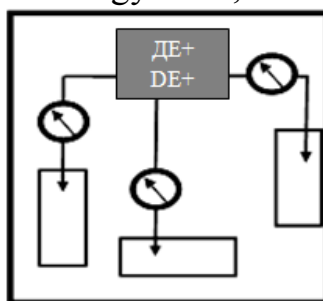


Fig. 2.3.4(8)

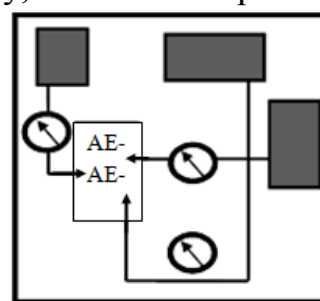


Fig. 2.3.4(9)

Today it is known that:

- "Water molecules are dipole magnetic particles with positive and negative

poles. Upon contact, they immediately merge (plus and minus), forming cluster systems" ...;

– "The absorption of EM-energy by biological systems is provided by free water molecules and is accompanied by the effect of their vibrational-rotational movement" ...;

– "Rotating vibrations of a DNA molecule excite shock waves in an aqueous medium and cause an electric current in the dipole circuit of structured water. Due to electrostriction, the electric waves are transformed into acoustic (and vice versa), which leads to their combined propagation" ...;

– "Water dipoles under the influence of an alternating magnetic field generate vibrations that propagate in the dense medium of the body as sound. At the same time, the wavelength of photons is five orders of magnitude less than the wave of the initial electromagnetic radiation" ...;

– "Cosmic radiation amplifies the human EM-field by 4 times" ...

Effect of external EMF on water... Magnetic poles affect water in different ways: under the influence of the north it is structured and acquires antibiotic and antibacterial properties and under the influence of the south, on the contrary. It should be noted that self-organizing systems (to which water and thanks to it all Living) are characterized by "nonequilibrium". In this case, the transition from one non-equilibrium state to another (due to internal energy) can be several orders of magnitude greater than the work of the acting stimulus.

The ambiguity of the response, the significance of the prehistory, and the duration of the aftereffect are characteristic of experiments with nonequilibrium systems. Their feature is an automatic increase in sensitivity to external influences with a decrease in the strength of the initial threshold information. If such a system is shielded from strong factors, it begins to react to other influences that are not delayed by the screen and were not previously noticeable against the background of stronger ones. That is, water, as a non-equilibrium system, after receiving external (or internal) information is capable of long-term aftereffects, the effectiveness of which exceeds the duration of the "initial shock". At the same time, systemic complexity leads to a cascade of secondary changes. So, water is sensitive to the slightest impurities of substances, changing its own molecular structure. Human biomagnetic fields (10-13T), sufficient to obtain a significant one, also act as a modulator (N.Sinitsin, 1998).

2.3.5. RADIANT ENERGY OF THE SUN PHOTOSPHERE.

It was believed that our star is a ball of gas, which consists of 73% hydrogen, 25% helium and 2% other elements. But in 1990 in Amsterdam, at the 8th General Conference of the European Society of Physicists, a message was made that literally shocked the scientific community. It turned out that the distance between the particles of the solar substance (meaning the body of the Sun) is equal to the electron wavelength increased by four times (less than 10^{-9} cm). But at this distance, none of the known chemical elements can fit, including hydrogen with helium...! The conclusion suggests itself: the sun is not

a ball of gas! Another conclusion stunned the scientific community: even after billions of years, the temperature and size of the Sun will remain practically unchanged. So, the Sun is an "energy device" immeasurably more perfect than a thermonuclear installation...

In this respect, the phenomenon of Hale (1973) is interesting, who established that at a known constant polarity of the earth's poles, the polarity of the solar hemispheres changes from one 11-year cycle to another. As a consequence, the terrestrial EM-effect of solar activity changes cyclically. Such phenomena directly affect any biological system, incl. and on a person whose body (like the earth's surface) bears a negative charge, and the head and brain are in a positively charged ionosphere. In this case, the directed movement of energy carriers goes from the surface of the skin to positively charged tissues (and vice versa), creating an integral and interconnected energy network in the biological system, which periodically changes its direction. Such biophysical dynamism determines not so much the mechanisms of adaptation of biological systems to the external environment and survival in extreme environmental situations, but is a manifestation of the cosmophysical dependence and controllability of the Living.

It should be noted that L.Chizhevsky for the first time experimentally substantiated the hypothesis of the influence of cosmic energy factors on the function and vital activity of biological systems. Heliobiology, developed by him in the thirties, was comprehended and understood only with the beginning of space flights, and became the basic idea of direct energy exchange between living matter and the external environment. Thus, solar radiation is the main source of energy for life on Earth.

From an ecological point of view, its biological significance is determined by infrared, visible and UF rays. In general, the amount of radiant energy passing through the atmosphere is practically constant ($1.98 \cdot 10^{-2}$ cal/cm²min; this value is called the "solar constant"). Part of the radiation, reflected from the clouds, returns to outer space, and about 20% is absorbed by water vapor and heats the air. In this case, ozone absorbs most of the UF rays, and the rest of the rays reach the Earth's surface in the form of direct or scattered radiation and depend on the angle of incidence, transparency of the atmosphere and time of day.

Solar energy movement in ecosystems. The import of solar energy to green plants is associated with the supply of inorganic matter in the form of sun rays to the biogeocenosis. Their transformation into chemical energy (potential and internal) occurs in the chloroplasts of plant cells (while part of the radiant energy is lost in the form of heat). The distribution of energy in an ecosystem is determined by food (trophic) chains from species to species. At the same time, the energy level of first-order consumers is much higher than the energy received from producers. Energy storage occurs simultaneously with the formation of its reserve (with a favorable energy balance in the ecosystem, energy storage should remain constant). Energy is exported from the ecosystem through the release of heat into the environment and the emigration of organisms from it.

Light as an electromagnetic factor. Consider at least the duration of the action of light. It is known that the Earth's axis is tilted to the plane of the ecliptic (the circle of the Sun's motion) at an angle of 66°33'. This slope results in different lengths of day and night.

For example, the length of the day at 40° north latitude (near Lviv) is distributed as follows: January 9.5 hours; February 10.5 hours; March 11.9 hours; April 13.2 hours; May 14.3 hours; June 18.8 hours, and nights, respectively, 14.7; 13.7; 12.4; 11.1; 9.9 and 8.8 hours. During the equinox period (March 21 and September 23), day and night throughout the Earth have the same duration. All these indicators are directly related to the biological rhythms of human life and depend on the purity of the atmospheric layer.

The energy value of light is due to the photosynthesis of plants and the formation of organic matter (plant biomass, on the transformation and use of which life on Earth depends). For plants, the rays of the visible and invisible parts of the solar spectrum are important, especially orange-red (0.65-0.68 microns) and blue-violet (0.40-0.50 microns). UV rays (0.06-0.30 microns) are very active. They promote the photosynthesis of plants of highly active biological compounds, stimulate cell reproduction, increase the content of vitamins and antibiotics in plants and their resistance to diseases. Solar energy of photosynthesis is called physiologically active radiation (PAR). Its activity depends on the presence of colored pigments in plants: chlorophylls, carotenoids and others, which selectively work in the PAR ranges. Green pigments (chlorophylls) absorb the red and blue-violet parts of the spectrum, while carotenoids only absorb the blue-violet part. PAR depends on the angle of incidence of the rays, the transparency of the atmosphere and the intensity of illumination. In relation to light, plants are light-loving (heliophytes), shade-loving (sciophytes) and shade-tolerant (facultative heliophytes).

Light affects the processes of reproduction of plants and animals as a "photoperiodic stimulant". For the next cycle of growth and development to begin, they need to survive the cold and receive physiological confirmation of the end of the winter period (temperature and light signal the end of the dormant period and the beginning of the growing season). Photo-periodism is closely related to the well-known mechanism of the biological clock and serves as a universal means of regulating functions in time. Despite the significant difference between the flora and fauna, the phenomena of photo-periodicity in them are similar. The fact is that the length of the day is perceived by the receptors of functional systems (eyes in animals, plant pigment), which trigger the mechanisms of activation of hormones and enzymes and determine the corresponding physiological or behavioral effects. It should also be remembered that from the equator in one minute the Sun evaporates a billion tons of water, which every minute absorbs the energy of the Sun and gives it to the Earth, causing the movement of air, rains, storms...

Выводы...

1. Of all field interactions, EM-fields require special attention, which determine the biophysical processes of the Living and the habitat of biological systems (as a common factor in the mutual dependence of the surrounding world and the internal environment of biological systems)...

2. The information provided allows us to consider the PHAS of the skin and internal organs as representatives of EM-reception and form a hypothesis of a "biophysical vegetative link" at the border of the external and internal environment...

3. The proposed concept provides for the following interdependent sequence of functional vegetative pathogenesis:

– the external environment forms a zone of EM information around biological systems...;

– FAZ of the skin provide afferent reception of external EM factors and the transmission of transformed information through the "functional vegetative system" (FVS) of a person at the level regulating its central nervous system ...;

– FAS of internal organs according to the "functional autonomic system" (FVS) provide afferent reception of external EM information, its biophysical transformation and transmission to the regulatory centers of the central nervous system ...;

– at the level of the regulatory divisions of the central nervous system, the transformation of afferent EM information into efferent signals for the ANS (correct and understandable at the level of "vegetative correction") ...

Now let's try to prove the biophysical reality of the "lost vegetative link"...

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