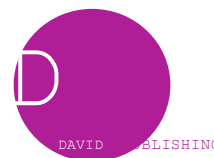


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Breathing Enable the Magnetic Properties of Erythrocytes (Hem Fe) Oxygen, Cells and Carbondioxide

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Contents

KRATAK SADRŽAJ (srpski)

PREFACE	4
ABSTRAKT	5
1. INTRODUCTION	5
2. MAGNETIC CHARACTERISTICS OF CELLS	6
2.1 The development of cytoplasm and organelles	6
2.2 The development of nucleus and cell membrane	6
3. CROSSING OVER	7
4. CELL DIVISION	8
4.1 Interphase	8
4.2 Prophase	8
4.3 Metaphase	9
4.4 Anaphase	9
4.5 Telophase	9
4.6 The development of tumor cells	9
5. MAGNETIC CHARACTERISTICS IN OXYGEN AND CARBON DIOXIDE EXCHANGE ..	11
6. GENERAL FACTS ABOUT BREATHING	11
7. NERVOUS SYSTEM IN REGULATION OF BREATHING	12
7.1 Gradual inhalation signal	13
7.2 Increased pulmonary ventilation	13
7.3 Sensory nervous centers in respiration control	13
7.4 The control of tissue concentration of O ₂ , CO ₂ and hydrogen ions	14
7.5 Oxygen in breathing control	14
7.6 Mixed effect on alveolar ventilation	15
7.7 Constancy of the partial pressure of O ₂ , CO ₂ and pH in blood	15
7.8 Breathing regulation during muscular work	16
8. THE IMPORTANCE OF THE PAPER	17
9. CONCLUSION	18

Kratak sadržaj rada:

Disanje omogućavaju magnetne osobine eritrocita (hem Fe) kiseonik, ćelija i ugljendioksid

Cilj rada. Dokazati da su magnetne osobine (MO) učesnika u disanju odlučujuće pri respiraciji. Objasniti uticaj Zemljinog magnetnog polja (ZMP) , kosmičkog zračenja (KZ) i MO ćelija na evoluciju i respiraciju.

Prikazati MO ćelije tj. kako su nastale citoplazma i membrane jedra i ćelije. Objasniti Crossing over. Detaljno prikazati uticaj ZMP na deobu ćelije .

Objasniti razmenu kiseonika i ugljendioksida u plućima i ćelijama MO. Objasniti kako funkcioniše nervni sistem kao regulator respiracije.

Metod rada. Izučavanje literature o ćeliji, respiraciji i ulozi nervnog sistema u disanja. Povezivanje prirodnog ZMP , KZ i MO ćelija sa evolucijom i respiracijom.

Rezultati. Svaka ćelija poseduje MO. One su veoma važne pri metabolizmu svih ćelija. Crossing over obezbedjuje polimorfizam a koga omogućava ZMP. Odlučujući faktor koji podstiče deobu ćelija je ZMP.

Strujni impulsi (akcioni potencijali)su generisani KZ. Disanje omogućavaju MO kiseonika, ugljendioksida, hemoglobina i ćelije.

Zaključak. MO omogućavaju respiraciju. ZMP, KZ i MO ćelija imaju odlučujući doprinos u evolucionim procesima uopšte. ZMP je pokretač podele ćelija. Mikrostrujni impulsi iz centralnog nervnog sistema su regulatori respiracije. Provodljivost mikrostrujnih impulsa u telu je brza elektronska i spora jonska (hemijska).

Ključne reči: ZMP,KZ, MO ćelije

PREFACE

At the very beginning, it's point out to some facts in understanding presented issues, which refers to misconceptions in biological science that diffusion and partial pressure are gas characteristics that enable breathing. Uncertainties in medical physiology in this work is explained by knowledge of magnetics and electromagnetics.

It's good to say that magnetic and electromagnetic forces are present in atoms and molecules. Since the atom is composed of electrons orbiting the nucleus, which is composed of protons and neutrons, the existence of magnetic-electromagnetic forces in the atom and around is obvious. Knowledge of electronic theory of valence, indicates that the magnetic – electromagnetic forces rule in and around molecule, which is logical. Earth – the planet, magnetized sphere that is surrounded and infiltrated by magnetic field.

That means that biosphere and components of the Earth (lithosphere, hydrosphere and atmosphere) are characterized by existence of Earth's magnetic forces. The origin of the Earth's magnetic field isn't fully explained, but it is considered to be due to movement of the Earth's core and resulting currents in the Earth as a heavenly body. It becomes clear that magnetic-electromagnetic forces in the cell are resulting vector values of macro Earth's magnetic forces and micro magnetic – electromagnetic forces from molecules and atoms as main structure of macromolecules and these cells.

When you fully understand that Earth's magnetic field is natural intensity and its variations, that it initiates division of mother cell into two daughter cells (as described in the paper), it's easy to understand that anomalous increase of magnetic – electromagnetic field, i.e. extremely high intensity – flux of the Earth's magnetic field, is dominant cause of various diseases.

It should be noted that it's important to put aside thinking relating on medical and biological view, that partial pressure and diffusion are major characteristics that enable breathing. Liberate the learned “truth”, because these are information remembered with maximum charge in the central nervous system, whose interneuron potential is up to 100mV (millivolts), and each new text, after reading and learning, is remembered with interneuron potential in brain that is up to 3mV.* It is believed these are the reasons why such a useful and perspective work like this is hardly acceptable in present scientific community.

Therefore it is recommended to the readers of this publication, published in “X International Congress of preventive medicine in Serbia” in Vrnjacka Banja , in June 2008. to rise above existing scientific inertia (and interneuron potential of the central nervous system – brain function), to study and understand the written explanations, because it's the only way to increase your own interneuron potential of newly information to the highest level. It is also expected a recognition on this revolutionary discovery, which will open up immense benefits for the welfare of mankind.

Every conversation (generous) and dialogue on issues exposed is unreservedly accepted. Discussion is open on any uncertainties on the subject matter of this paper.

Please note that paper is usually referred to newly published work. Studying biological, biophysical and physical literature, there wasn't anyone who had significant research results with this issue i.e. with multidisciplinary approach, so it could be referred to them. Over twenty years there has been research of the impact of physical fields on environment and most of my published work related to etiopathogenesis of various diseases. As far as I know there are no published papers such as mine, and that's one of the reasons why I mainly refer to my own published work.

*in the electrophysiology, very low frequent brain activity is further divided into spontaneous activity (EEG) and evoked (induced) potential (EP)... EEG potential sizes ~ 10 – 100 mV, frequency around 0-50 Hz, depending on the state of the brain. In learning and memory, with

presence of new stimulants, there are potentials of small amplitude of 1-3 Mv "(lit... D.Raković, Fundamentals of Biophysics, Gros KNJIGA, Belgrade 1995.)

Author

ABSTRAKT

Aim of work. To prove that magnetic characteristics (MC) of participants in breathing are crucial in respiration. To explain the impact of Earth's magnetic field (EMF), cosmic radiation (CR) and MC of cells on evolution and respiration. To show MC of cells, i.e. development of cytoplasm and membrane of nucleus and cell. To explain crossing over. To show in detail the impact of EMF on cell division. To explain the exchange of oxygen and carbon dioxide in the lungs and cells MC. To explain how the nervous system works as a regulator of respiration.

Methodology of work. Studying the literature about cell, respiration and the role of nervous system in breathing. Linking natural EMF, CR and MC of cells with evolution and respiration.

Results. Every cell has MC. They are very important in every cell metabolism. Crossing over provides polymorphism, enabled by EMF. Crucial factor in cell division is EMF. Electrical pulses (action potentials) are generated by CR. Breathing is enabled by MC of oxygen, carbon dioxide, hemoglobin and cells.

Conclusion. MC enable respiration. EMF, CR and MC of cells are crucial factors in evolution processes generally. EMF is the initiator of cell division. Micro electrical pulses from central nervous system are regulators of respiration. Conductivity of micro electrical pulses in the body is fast – electronic and slow – ion (chemical).

Keywords. EMF, CR, MC of cell.

1.INTRODUCTION

Official scientific explanations of the breathing process are unclear and, very often, contradictory. This paper is trying to clear up these unclear things and wrong opinions found in literature.

As far as it is known, there is no explanation that takes into account MC of hemoglobin (hem-two valences Fe-magnetite), oxygen (O₂ - an obvious paramagnetic), carbon dioxide (CO₂ - diamagnetic, because O₂ changes MC) and cells (magnetization center of every cell is in its nucleus).

In this paper, it will be presented respiration functions according to inspiration and expiration processes.

Especially detailed, it's presented the nervous system role in breathing regulation. Other functional parts will be presented in another paper, only then the entire process of breathing will be presented in continuity. The role of nervous system in respiration process is selected because it is the least explained in literature. Especially because fundamental ignorance is found in the human biology.

The known principles will be briefly commented, and those parts which reveal new scientific presentation of respiration functioning explanations will be stressed. In the text, it will be also explained some unclear things on the basis of logical thinking.

In order to explain many unknown things, biological science must consider MC which exist and exert their influence upon all the processes on the planet Earth, especially upon the living world evolution. It's pointed out that no biochemical process is in contradiction to occurrences influenced by MC, they are rather complementary to each other.

The role of EMF and MC of cells in living world evolution, and living organisms reproduction, will be explained in details.

It will be also explained why every cell magnetization center is located in its nucleus, and how cytoplasm and membranes are generated, what represents a great evolutionary step in the living world. These new scientific explanations are contribution, to further development of biological science.

2. MAGNETIC CHARACTERISTICS OF CELLS

MC in a cell are micro-magnetic fields generated as a product of micro-magnetization of constructing elements in a cell. At the beginning of this paper, it's pointed out that when we speak about MC in and around cells, we speak about micro-magnetic characteristics.

The mentioned MC O₂, CO₂ and hemoglobin are known to everyone. MC of cells are unknown to biological science. The following text has the goal to use arguments and logical explanation in order to contribute towards the truth, which is doubtlessly clear, that every cell has its MC, i.e. magnetization, which depends mostly upon cells' nuclei dimensions. The larger the nucleus the stronger the magnetization, and vice versa. Scientific literature knows where the strongest magnetization is in human body located - it is in the area of pineal gland. The conclusion is that all cells have typical MC, and the strongest are in the central nervous system cells (CNS) i.e. neurons which usually either have no cytoplasm or it is extremely thin.

2.1 The development of cytoplasm and organelles

In biological science it is well known that cytoplasm and cell membrane generation is a big evolutionary step in the living world. But, how have they been generated, it is not known. As far as it is known, generation of cytoplasm has been discussed very much, but clear explanation has not been given. This paper contributes towards explanation of this question.

It is supposed that life has been generated through the first self-replicative DNA, which consists of molecules with paramagnetic characteristics, and around it there are protein molecules. Thus, magnetic field of the first single-stranded RNA enabled, by separation gathering of substances around RNA, and this is cytoplasm and first membrane generation. Cytoplasm has a different molecule construction and density compared to substances out of cell.

By an induced magnetic field, originated from cell's organelles, cytoplasm was produced.

2.2 The development of nucleus and cell membrane

Concentration of paramagnetic substances in a nucleus, which contains mostly chromosomes and chromatin, produces an induced magnetic field around the nucleus. On the interface of the induced magnetic field of the nucleus there concentrate substances of typical magnetic field, which make a double-layered cell nucleus membrane.

In the very cell, beside nucleus, in the cytoplasm there are a great number of other organelles, which also have membranes, whose genesis is, probably, similar to the one of nucleus' membrane, and which are, also, constructed by paramagnetic. They have characteristically magnetization vectors, which produce an induced micro - magnetic field around organelles. These magnetizations gather according to the vectors laws, and give a complete cell's magnetic field. As we know, there exists macro EMF, and then on the connecting point of these two magnetic fields there concentrate typical substances, right in the point of balance of two magnetic pressures (magnetic field of organelles and EMF). This point is characterized by substances which construct the cell's membrane, i.e. plasma-membrane, which consists of two layers of "lipid molecules in which various proteins are built in"

(lit. 1). These substances concentrate, because this type of magnetic field enables only them a separate gathering, which can be seen through microscope as a two-layered cell's membrane. These explanations are acceptable, considering that biological science has not given any appropriate explanation of these phenomena.

Considering all the above presented, it's concluded that every cell has a characteristic magnetization, i.e. MC. They are important for metabolism in every cell. It's emphasized that there are much more evidence proving that cells have MC; for instance, magnetic resonance (diagnostic method in medicine) functions on the principle of different magnetizations in cells. Crossing Over is a great argument for proving the MC existence in cells that follows next.

3. CROSSING OVER

A big proof that chromatids on chromosomes are magnetized is the Crossing Over, i.e. exchange of (separation of) tied in gens, in which process homologous chromosomes exchange homologous segments. "In the area of bridges, one-membered DNA breaks easily. If this break occurs in north-south direction, two recombined chromatids appear. Therefore, homologous chromosomes have exchanged their parts, the Crossing Over has been done. If break occurs in east-west direction one thread of DNA is intact, and the other one is recombined" (lit. 1). As we know, EMF's direction is north-south, so the vectors of EMF have magnetized parts of chromatids so much that they break in the location of bridges, right in the north and south direction. This would mean that what is magnetized in the north, breaks and goes to south, and what is magnetized in the south, breaks and goes to the north. The change of gens on one DNA thread in east-west direction points out that magnetic forces are the ones which have enabled this. Gens that divide towards east-west direction have diamagnetic characteristics. Lines of magnetic forces push them either towards east or west, and are replaced by other molecules, which can be paramagnetic, too, that is very logical. This magnetization and magnetic pushing of diamagnetic gens is relatively strong, because chemical connections between gens on chromatids break. There are two more proofs confirming chromosomes' magnetization. The first is: "if gens on chromosomes are close to each other, they develop rather rarely. The further they are from each other the greater the possibility for their separation" (lit. 1). If gens are very close to each other on homologous segments, magnetization of gens is unique. Elementary magnetic domains (molecules that have magnetic poles in north-south direction, and can orient themselves in the magnetic field) are connected in gens on homologous segments of chromosomes, so the unique induced magnetic field is on all segments of both chromatids, and then there is no exchange in the form of Crossing Over. If homologous gens on chromosomes are far from each other, then elementary magnetic domains (which have magnetic momentum) are of independent orientation, since gens magnetize differently, too, so the gens' segments which get south magnetization tend to move towards north. While gens' segments, which magnetize northward, tend to move towards south. This brings up break of homologous segments on chromosomes in north-south direction.

The second proof that chromosomes are magnetized is following: "There are many hypotheses on Crossing Over mechanism, but the most acceptable one is R. Holliday's. Homologous segments must posit one against other, and to stay in such position long enough" (lit. 1). This gens complex must stay in such position for long time, because magnetization takes time, in order that elementary magnetic domains orient themselves and gain induced magnetizations of homologous gens' segments, and only then separation occurs.

"Crossing Over is a very important mechanism, which enables recombination, and, by that, polymorphism" (lit 1). This is a clear proof that EMF has a great role in living world's evolution, i.e. in the living world's adaptation to the changes of external environment.

In literature it is written that "exchange on chromatids, caused by, for example, radiation, chemical matters, viruses, bacteria, and especially malignant diseases, increase frequency of the parts of chromatides' exchange" (lit. 2). It must be pointed out that reports, about the cause of malignant diseases appearance (lit.2, 3,4), have explained that cancerous mutations most commonly occur in artificial (enormous) magnetic fields, so it is only logical that exchanges of tied in gens (Crossing Over) are very frequent in malignant diseases.

On the basis of all the above presented, we can conclude that chromatids are magnetized, and that is why the magnetization center of every cell is in its nucleus.

4. CELL DIVISION

Tissues and organs generate and develop in EMF. Cells, as the basic mass of tissues and organs, are made of ferro-magnetic, para-magnetic (have MC, and their susceptibility is from 0-10), and diamagnetic (have no MC) substances.

Tissue and organs growth develops through two different processes. The first one includes the basic cell's mass growth, i.e. cytoplasm and nucleus increase, and the second one the very cell's division. The growth develops during a rather long life period of the cell, and is called interphase, while the second part of the growth is division - cell's mitosis, and it lasts for rather a short time period. Mitosis is divided into four morphological phases, as follows: prophase, metaphase, anaphase, and telophase. The mitosis process is mostly the same in all eukaryote cells (cells with differentiated nucleus). The division is related to cell's cytoplasm and organelles, too.

4.1 Interphase

Interphase lasts during two thirds of the cell's life cycle, usually; and the very division lasts during its one third. Here, it should be noticed that peaceful phase of EMF is two thirds of one day, most commonly, and one third of it belongs to the natural EMF variations. In the terms of time, it would mean that interphase lasts cca 16-20 hours, and the very division cca 1-2 hours. The interphase is long enough to enable EMF to support intensive metabolism by its magnetization, which is manifested through chromosomes' changes. Because of magnetic and electro-magnetic characteristics of the molecules on chromosomes, in cell's nucleus there occur despiralization of chromosomes, what enables chromosome's DNA replication and RNA synthesis, i.e. transcription. Material from extracellular space provides accumulation of substances in the cell, for replication and transcription, by magnetic separator attraction thanks to the resulting magnetic fields of organelles of the cell. Separated substances of typical MC, entered the cell due to the characteristic temperature in and around the cell, i.e. temperature allowed only certain substances to obtain the typical MO, to selectively entered into the cell. Paramagnetic substances are built into the DNA ladder by magnetic "code", i.e. it replicate itself, and also the same principle is used for transcription the nucleotides for RNA.

Upon completion of interphase, begins division - mitosis, i.e. prophase.

4.2 Prophase

In the prophase, each chromosome consists of two chromomeres, connected by their proteins, and they are called chromatides, also, which are connected at one location by centromer. EMF magnetize all chromosomes, additionally, by the same kind of magnetization. In the vicinity of nucleus there can be seen two pairs of centriols, which, under the influence of EMF, are magnetized with the same kind of magnetization, and that is why they separate and move towards opposite poles of cell. Between centriols, there appear fibriles which make a dividing spin. "The mechanism of dividing spin is still unknown" (lit. 1). Claim that microtubules (constructing substances of the dividing spin), allegedly, move centrioles towards cell's opposite poles, does not make sense. The following should be repeated: The existing pair of centriols consists of paramagnetic substances, so

in EMF it is magnetized with the same kind of magnetization, and that is why they separate and move towards cell's opposite poles. Between the centrioles there appear filaments of star-shaped morphology (what is typical for magnetizations around magnetic poles), made in the form of accumulation of substances with characteristic MC, and called micro-tubules. Micro-tubules connect with each other and make dividing spin. Generation of nucleus' membrane suggests that it is clear why does membrane disassemble. The cause is in the change of magnetization center, namely, centrioles, by their magnetic forces, disassemble membrane, which fragments, and mixes with cytoplasm, and similar is happening with nucleus.

4.3 Metaphase

Then follows a phase in which chromosomes are very outstanding, and they can be seen together with their number and shape, and that is metaphase. Chromosomes in the central plane of the dividing spin are connected with centromere, and by fibrils they are connected with centriole. This configuration is called equatorial plate.

4.4 Anaphase

And in this phase, chromosomes get magnetized more and more, with the same kind of magnetization.

Now comes the instance when centromeres divide, and chromatids separate, and move towards the opposite poles of cell, just because of their same-kind-magnetization. This conclusion can easily be assumed as an axiom, because it is clear as it is. This phase is called anaphase. The following will be emphasized: "although there are several hypotheses, the phenomenon of chromatids' movements towards the opposite poles of cell, it still has not been explained definitively" (lit. 1). Exactly, the above given explanation is logical and unambiguous. Equatorial plate is degraded due to the weakened inter chromosome magnetic forces that consumption of couple of molecules of ATP enabled (by increasing temperature).

4.5 Telophase

The chromatids, which could be named "daughter" chromosomes, reach the opposite poles of cells, and this phase is named telophase. The chromatids, concentrated around cell's poles, now make their own magnetic field. According to the law of vectors addition, a unique magnetic field is generated, on whose border the nucleus' membrane is created. Material for membrane are paramagnetic substances of endoplasmic reticulum fragments. Probably, something similar happens to other cell's organelles, which also divide, i.e. first they disintegrate, and then are generated in the cell's cytoplasm. Then, a collective induced magnetic field is made by cell's organelles, which by their magnetic field, first, make a dividing furrow, and then, a membrane for newly generated daughter cells. In literature it is said that "the controlling mechanisms of dividing furrow formation are not sufficiently clear, yet" (lit 1). In the equatorial part of the dividing cell, there begins collection and separation of cytoplasm, what is an answer to the existence of two separate magnetic fields. This is why the dividing furrow is made right on the border between two magnetic fields, and then characteristic two-layered lipid membrane. Because lipids are typical paramagnetics (lit 4) and they are concentrating in balance area of EMF pressure and resulting micro magnetic field of nucleus and organelles.

It should be noticed that telophases in the vicinity of nucleus, concentrate substances with outstanding MC left out from nucleus, they replicate and, during the interphase, they grow, and those are centrioles which function during the division.

4.6 The development of tumor cells

Finally, it's important to quote the following: "Cell's division has been studied intensively, and, although morphological changes have been described in full details, many important biochemical processes in the foundation of this morphological changes have not been completely explained, like

factors inducing the cell division, and many other processes, mentioned before. For unknown reason, some cells begin to divide uncontrollably, which leads to tumor appearance" (lit 1). Now it is completely clear that factors which induce the cells' division are natural EMF. As for some cells which are dividing uncontrollably, leading to tumor appearance, it is one more proof about the existence of MC of cells. After twenty years of research work, it was found out that tumors occur only in enormous magnetic fields and variations, i.e. they are artificial magnetic fields generated, mostly, by urbanization. Tumor cells get stronger MC than healthy cells, because they are generated in an enormous flux of magnetic field (lit 2, 3). That is why, the above mentioned, magnetic resonance can easily locate them in body. In order to get an exact diagnosis, an intravenous paramagnetic contrasting substance is injected in the form of application into blood (a usual clinical procedure) when diagnosing tumor. Before the occurrence of tumor cell, which is of clone origin, "physically viscous magnetization (PVM) of organs or part of organs, that most of the time is in enormous magnetic field, is developing" (lit. 5, 6, 7). PVM occurs because of the presence of enormous magnetic field from environment. The occurrence of PVM means that cells are additional magnetized because of the presence of increased magnetic flux. Then, in PVM area, increased concentration of substances with paramagnetic characteristics happened. In literature those substances are known as "carcinogenic substances" (CS), which are at the same time electrophiles, i.e. they are all paramagnetics. Based on these findings literary misconceptions about the cause of the tumor, that CS is the cause of the origin and development of tumors, must be detached. So the cause and consequence are mixed, i.e. the cause is PVM, and the consequence is accumulation of paramagnetics, CS in that organ or part of the organ. It is also known that the metabolism takes place more intensively in the area of PVM, so the consequence is developing of characteristic enzymes and proteins (tumor markers are determined). Concentration of hydrogen ion is also changing because of characteristic MC of hydrogen. These conditions are suitable for paraoncogen mutation, which mutates into an oncogen, a detailed explanation is presented in the literature, no. 3. Ever - living malignant cell emerged by mutation and only in the enhanced magnetic field in an organ or part of the organ where PVM is already created. Telomeres of malignant cells, with already created mutation, can be restored by new paramagnetic molecules that is enabled with presence of PVM, which produces enzymes and proteins with increased MC. That means that the ends of telomeres, after a large number of magnetization and demagnetization, are losing MC, and they are replaced with new paramagnetic substances, which happens continually. It's pointed out that first came PVM of organ or part of organ, where tumor will occur, due to the presence of enormous magnetic and variable magnetic field from environment, i.e. paramagnetic substances are accumulating in tissue in which characteristic proteins, called tumor markers, developed. It's logical that they are different for different tissues. Science about tumors knows carcinogens substances – chemical causes of tumors. These paramagnetic substances accumulated in the PVM area, can displace the thinned portions of telomeres at the ends of chromosomes, which have lost the ability of magnetization, and the new substances that are now able to magnetize and degaussed, are implanted. Therefore, the cell divides unlimited times and represents ever – living cell - malignant cell.

This will be clear to everyone when they understand that tumor genesis has been discovered.

4.7 The nature of cell's death

The explanation of cell's death is given in the following section. From the presented, it is clear that MC of chromosomes are decisive in division, because they can be magnetized. It is a logical conclusion that upon cessation of magnetization possibilities of chromitides, there occurs the death of cell.

It is a well known fact that magnetizations and demagnetizations are limited in all magnetics, especially in paramagnetics. It is known that the more telomers (ends of chromatides) divide the thinner and shorter they become, accordingly their possibility of magnetization weakens, because inter-molecular magnetic forces on telomers are weaker and weaker, so they become shorter which leads to the cell's end of its life cycle.

5. MAGNETIC CHARACTERISTICS IN OXYGEN AND CARBON DIOXIDE EXCHANGE

Unclear things about diffusion and partial pressure marked as causes of O₂ and CO₂ exchange in respiration, found in literature, are briefly presented.

Diffusion is a free moving of gas molecules from an area of higher concentration to the area of lower concentration, tending to equalize partial gas pressure, which is a tendency towards gas homogenisation. Movements of molecules is random. Molecules collide and change their direction of movement. Such an explanation of O₂ and CO₂ exchange does not reflect the real picture, because it is exactly known that O₂ ties in with hemoglobin, just because of the known MC O₂ hem. CO₂, as a diamagnetic, gets transported from cell into blood and capillaries, at the end in alveoles, from where, through expirium, into atmospheric air. CO₂ exit from cells and capillaries happens because of diamagnetic characteristics, for, inside a cell and in capillary blood there rule magnetic forces which throw out CO₂. That is way it can be said that partial pressures of O₂ and CO₂ have no greater importance in these gases' exchanges. This statement is confirmed by the arguments that follow. In literature, it is presented that, for example, "diffusion capacities of CO₂ (quantity of gas that will diffund through membrane per one minute, with a pressures difference of 1mmHg – ml/min/mmHg), has not been measured up to now for the following technical difficulties.

CO₂ diffunds through respiration membrane so quickly that the average partial pressure of CO₂ (PCO₂) in blood of lungs capillaries does not differ much from PCO₂ in alveolus - the average difference is less than 1 mmHg – so that by today's methods such a small difference can not be measured exactly." (lit.8) These conclusions, as the ones that follow, clearly suggest that it is not PCO₂, but diamagnetic MC. Some actions have been taken to determine PCO₂ and PO₂ with indirect method using carbon monoxide (CO), on the basis of the law that diffusion capacities for some gases are directly proportional to the diffusion coefficient (solubility of gas/root of molecule gas mass) of that gas, but similar difficulties occurred. "Measuring of partial pressure of O₂ in lungs capillaries blood is difficult and not exact" (lit. 8). That is why physiologists have measured diffusion capacity of CO, and then calculated firstly diffusion capacity of O₂, and from it the diffusion capacity of CO₂. New difficulties occurred, such as "partial pressure of carbon monoxide in blood, in fact, equals zero, because hemoglobin gets tied in too quickly with it so that pressure has no time to develop" (lit.8). It is not possible to measure PCO in blood for the same reasons as of O₂, because both gases are outstanding paramagnetics, so that hemoglobin ties them in by its magnetic forces very quickly. It is known that in the cells that are suspended, the PO₂ may have a value of about 0 (0.1-0.5 kPa), so that the effective regulatory mechanisms which will enable an adequate supply of the cell with this gas are necessary (lit 9). It's clear that the essential effective regulatory mechanism, which will enable the supply with O₂, are actually magnetic properties of the participants in breathing.

This suggests that MC is cause of gases exchange in body.

Another fact confirms the above stated. It is a diver's going into the water to dive. It is known that the deeper the water the higher partial pressures become. For example, if the depth of water is 10 m pressure is 2 atmospheres, at the depth of 20 m pressure is 3 atmospheres etc. PO₂ and PCO₂ in the air under the water, also, gets higher, but exchange of gases in diver's lungs is the same as on the surface.

We are free to conclude that MC are the main factor in O₂ and CO₂ exchange.

6. GENERAL FACTS ABOUT BREATHING

Breathing has the role of providing O₂ to all the cells of organism and taking CO₂ away from lungs' tissues, which is generated by O₂ burning in cells.

Breathing process is an exchange of O₂ from the atmospheric air and CO₂ from blood. These gases exchange is done in alveoles and capillaries. Burning of O₂ through the process of metabolism

happens in all the cells which are the constructive elements of organs, and organs are constructive elements of organism. Burning of O₂ releases energy which is necessary for all living beings. In order to achieve this energy aim, breathing process goes through several functional parts, as follows:

- a) Micro-current impulses generated in CNS (breathing centers are located in medulla oblongata and pons) stimulate muscles of diaphragm and thorax to move up and down, making the inside cavity of thorax, i.e. lungs, larger and smaller, which are inspiration and expiration stages.
- b) Atmospheric air enters into alveoles (empty space) and capillaries (blood space) where the exchange of O₂ and CO₂ takes place, the exchange process happens because of MC, hemoglobin, O₂ and CO₂.
- c) Transportation of O₂ through blood to all cells.
- d) O₂ enters cells because of stronger MC of organelles (of all cells) than the MC of hemoglobin where it burns and CO₂ is generated, noticing that O₂ changes magnetic characteristics in CO₂ molecule.
- e) CO₂ as a diamagnetic, gets thrown out of cells, because of MC of organelles, into the blood,
- f) which transports it into alveoles, from where through expiration it goes into the atmosphere.

This is how the entire cycle of breathing goes on being repeated cyclically in the same order of processes.

7. NERVOUS SYSTEM IN REGULATION OF BREATHING

Nervous system adjusts ventilation of alveoles exactly according to the needs of organism.

Anatomy respiration centers (RC) are made of smaller and larger islands of gray matter in CNS (neuron body, neuroglia-astrocytes, dendrites, and axons' first parts) with a very rich and branchy network of blood vessels. RC are located in reticular substance located between spinal cord and midbrain. The exact location is brain trunk and pons.

It is known that CNS through blood gets ten times more O₂ than other organs in body.

Gray matter through blood gets much more O₂ than white matter. It means that concentration of O₂ in gray matter is rather increased. Thus, generating of micro-currents by the soft component of ionizing CR is large, that is enabled by anatomical construction and location of CNS (lit 10). Created micro-currents are conveyed by axons and synapses to muscles of diaphragm and ribs which stretch lungs during inspiration. After the action potential, elastic withdrawal of lungs and thorax, what makes expiration.

Rhythmic repetitive demonstration of action potentialities, i.e. micro-current impulses, is provided by a rhythmic showery coming of soft CR component, which is ionizing and forms a cloud of electrons that go towards the lowest electrical resistance and potential, through axons and synapses, towards peripheral and autonomous organs of body (lit 10). Anatomy of CNS states that the mechanism of nervous impulses' transportation through synapses in humans is but chemical. This is not true, because the transportation is performed through fast electronic and slow chemical (i.e. ionic) way. Both ways are, mainly, present during the convey of micro-electric currents in body.

Further physiological explanations of the respiration are, mainly, clearly presented. It's repeated that RC is in medulla oblongata and pons, i.e. located in several groups of neuron islands, which are dorsal, ventral, and pneumotoxic.

Only the things that are not known will be commented, such as: "breathing rhythm is mostly made in dorsal group of respiratory neurons. Even when all peripheral nerves which enter into medulla oblongata, as well as brain trunk above and below medulla oblongata, get cut, this group of neurons still sends repetitive salvos of the inspiratory action potentials. The main cause of this repetitive emptying is still unknown." (lit 8).

The mentioned neurons group belongs to the islands of gray matter which is very bloody, thus, enriched by oxygen. At the beginning of this Chapter It's explained how do repetitive salvos, i.e. micro-current impulses, occur. Yet, it should be explained how comes that this neurons group sends

repetitive salvos even after all peripheral nerves, which enter medulla oblongata and brain trunk above and below medulla oblongata, were cut. This happens because O₂, conveyed through artery blood vessels, is present in that gray matter and after the mentioned cutting, so the ionizing CR (soft component) continues to generate micro-currents sending them in the form of salvos, because the CR is showery very similar to the repeating salvos, and does not depend on the separate brain centers' nerves cutting.

7.1 Gradual inhalation signal

Gradual inhalation signal occurs by the convey of nervous signal (micro-electric current from dorsal neurons group) into primary inhalation muscles, mainly, of diaphragm, at the beginning is very weak nervous impuls, and at the end is very strong and instantly disappears. Then, elastic withdrawal of lungs and thorax occurs, what makes exhalation. Exhalation depends on the duration of inhalation, just as the very frequency of breathing. In literature it is noticed that the usual way of controlling gradual signal, instant disappearance of signal and breathing frequency is the following: "The earlier disappearance of gradual signal, the shorter inspirium lasts. Because of still unclear reasons this shortens the length of expirium" (lit 8). It should be noticed that if inhalation is short it is clear that exhalation will be short, too. Controlling breathing systems signalize frequency.

Explanation of the inhalation gradual signal is following: At the beginning the micro-current impuls (signal) is weak, and gradually it becomes stronger, then, after cca 2 seconds, it instantly stops. This, most probably, happens because CR gradually generates micro-currents up to the moment when number of O₂ molecules suddenly decreases, which is the basic substance for electrons and ions production in CNS. With the disappearance of O₂ molecules, which by the support of CR are able to release electrons, the current impulse for respiratory muscles gets disconnected. There is a supposition that this inhalation signal can be suddenly stopped as a result of respiratory muscles strain (micro-electric switch for strain), the electrical resistance of the final nerve fibers increases and breaks the current, i.e. action potential.

7.2 Increased pulmonary ventilation

Ventral group of breathing neurons provides breathing signals when there is need for larger lungs' ventilation. The same neurons group innerves abdominal musculature during hard muscular work. Functioning of this neurons group, because of the increased ventilation, is activated due to larger delivery of O₂ through blood to the RC neurons. Then, stronger micro-currents are generated into the ventral neurons group, so now they take part in the entire breathing process, especially during harder muscle work.

Apneustic center, located in the lower part of pons, probably functions according to the condenser principle, i.e. when there is an excess of current it charges up to the moment of its shortage, for any reason, sending of action potential starts, and then it starts emptying necessary micro-currents to the dorsal breathing center. Function of this center is not clear, because many data concerning structure, movability, electric resistance, conductivity, and micro-temperature changes which can change MC of cells, i.e. molecules, are missing, and that change in the axons generates micro currents of action potential.

7.3 Sensory nervous centers in respiration control

Sensory nervous centers in lungs take part in breathing control by vagus receptor centers for strain, located in the muscular part of bronchi walls and bronchiols in lungs. When lungs are inflated sensors get stretched and disconnect the current gradual impulses provided by vagus nerves from dorsal neurons group. In literature it is called Hering-Broer's inflation reflex. This mechanism protects lungs from over-inflation. The most probable detailed explanation is following:

Axon fibers (efferent somatomotoric-drainage) stimulate muscles in bronchis and brochiols all over the lungs to stretch during inspiration up to the limit of inhaled air (in humans cca 1,5 l). There,

there are also vagus sensory fibers which stretch up to the limit of inflation, then they stop micro-current impulses towards muscles, and now somato-sensory inlet fibres (vagus receptors for stretch) overtake the current action potential and return it to RC in which way they make the inhalation shorter. It should be noticed that these are sensors sensitive to lungs muscles' strain, namely, its functions, probably, as a micro-electric switch of these sensors. This is how Hering-Broer's inflation reflex could be explained.

7.4 The control of tissue concentration of O₂, CO₂ and hydrogen ions

Ventilation control in relation to the needs of organism, which relates to maintenance of tissue concentration of O₂, CO₂ and hydrogen ions on the proper level, is a chemical control of breathing. Excessive quantity of CO₂ (or excessive quantity of hydrogen ions) mostly influences directly the respiration center which send motoric signals into breathing musculature. O₂ achieves the control through chemo-receptors located in carotides in aorta arch where artery blood is, and are called corpuscles.

Direct chemical control of RC CO₂ and hydrogen ions is effected through chemo-sensitive neuronal region, and is located bilaterally in medulla oblongata, only a part of a millimeter below ventral surface. "It is believed that hydrogen ions are the only important direct stimulator of these neurons" (lit 8). The chemical reaction which enables hydrogen ions to effect RC chemosensitive neurons is known. But how? CO₂, as a product of metabolism, appears in chemosensitive region, where it joins with water, and where it builds carbonic acid which dissociates into hydrogen ion and bicarbonate ion, then hydrogen ions increase their inter-molecular magnetic forces (flux increases), thus ionizing the micro-currents increase and overflow into dorsal neuron center. This is an explanation how do hydrogen ions (paramagnetic) effect RC, mainly.

Organism's adaptation to chronic increase of CO₂ (hydrogen ions) concentration has been explained by metabolism, i.e. kidneys correct the hydrogen and bicarbonate concentration.

7.5 Oxygen in breathing control

Role of O₂ in the control of breathing through peripheral chemo-receptory systems, located in the form of corpuscles in carotides and aorta, also, a few of them are located in other arteries of thoracic and abdominal cavity. "Exact mechanism through which the low partial pressure of O₂ excites nervous' endings in carotide and aorta's corpuscles, is still unknown" (lit 8). Therefore, it is not known how does the low O₂ concentration in artery blood directly stimulates nervs' ends in corpuscles. The explanation is following: Since it is known that through corpuscles artery blood flows and has twenty times larger mass than the very corpuscles, this means that the blood flow is extremely large. The very corpuscles have nervs' endings directly sensitive to the low PO₂. Artery blood is free from CO₂, because it flowed through alveoles and capillaries in lungs, but it was not saturated with O₂, i.e. erotocyte did not get O₂, so the MC of the very hem in erotocyte without O₂ is stronger. Since the artery blood flows rapidly through corpuscles, beside nervs' ends of vagus where magnetic flux is changing all the time, which generates at the ends of nervs' fibres micro-current impulses which in the form of frequent nervs' impulses through vagus fibres go to RC. Frequency is achieved because of movement speed of arterial blood next to sensory corpuscles, work of the heart as a pump i.e. systole higher movement speed, diastole lower blood movement speed, which also contributes to the change of the magnetic flux around corpuscles with vagal drainage fibers.

From this explanation it is easy to conclude the following: The smaller O₂ in artery blood the bigger and more frequent are nervs' impulses of chemosensitive receptors (this was found), and vagus fibres convey them to RC. Now in RC we have additional micro-currents which directly stimulate muscles of diaphragm and ribs, in this way greater alveolic ventilation occurs.

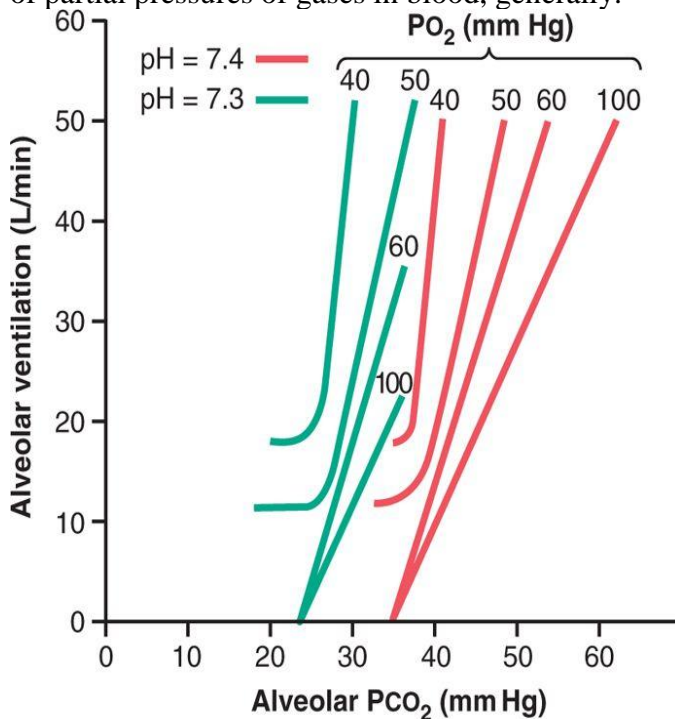
Stimulation of RC by peripheral hemo-receptors micro-electric currents is of the electronic origin.

It is generated by changable magnetic field (flux) at the nervs' endings. It is characterized by changable frequency, which depends upon the speed and number of eritrocites unsaturated with O₂, i.e. hems in it. This is why the peripheral stimulation (fast electronic) is five times faster than the

central one (ionic-chemical slow), what is especially important at the beginning of hard physical work.

7.6 Mixed effect on alveolar ventilation

In literature a mixed effect of PCO_2 , pH (concentration of hydrogen ions) and PO_2 upon alveolic ventilation is presented. It is concluded that with pH 7,3, i.e. more hydrogen ions and pH 7,4, less hydrogen ions, the curves of diagram of alveolic ventilation and PCO_2 move rightwards and leftwards, but only with constant PO_2 40, 50, 60, 100 mmHg (lit 8 Fig..41-7). These rightward and leftward movements have not been explained. In literature it is stated that curves serve to determine alveolic ventilation when PCO_2 in alveoles is known. As hydrogen ion is an outstanding paramagnetic and when it is more present in blood (pH 7,3) then there is less places on hemoglobin for connection of O_2 , because hydrogen ion connects with hem and then there is less places for O_2 , that is why does the decreased alveolic PCO_2 follow, because in cells less CO_2 molecules generate and the curve of the diagram moves leftwards. The second case is less hydrogen ions (pH 7,4), what means the more places on hemoglobin for O_2 in blood, the larger gets alveolic PCO_2 , because in cells appear more CO_2 molecules and the curve moves rightwards. This explanation is clear Fig. 41-7. Conclusion is: magnetic characteristics of molecules in blood are very important for maintenance of partial pressures of gases in blood, generally.



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fig..41-7

A complex diagram showing interrelations of effects between partial pressure of CO_2 partial pressure of O_2 , and pH upon alveolic ventilation. (On the basis of results from: Cunningham,Lloyd. BB: The Regulation of Human Respiration. Oxford: Bllackwell Scientific Publications, 1963.)

7.7 Constancy of the partial pressure of O_2 , CO_2 and pH in blood

Regulation of breathing during muscular work is a clear proof that MC of O_2 , hemoglobin, cells and CO_2 are very important during the process of respiration. "During muscular work consumption of O_2 and generation of CO_2 can increase even twenty time" (lit 8). This means that as the consumption of O_2 and generation of CO_2 increases, alveolic ventilation increases in accrodance with metabolism in organism. This is why artery PO_2 , PCO_2 and pH stay always constant, which has been found, too. This, aproximatly constant concentration can only be maintained by MC. It's known, that there is no chemical reaction which can have such an effect upon the speed of

metabolism during a short time period, i.e. upon O_2 consumption and generation of CO_2 , as well as upon their consumption decrease, all this in function of organism's needs. Statement: "since that measurements of artery PCO_2 , pH and PO_2 have shown that none of these factors change during muscular work in order to stimulate breathing" (lit 8), confirms the previously suggested, and also the constant saturation of hemoglobin O_2 present is in accordance.

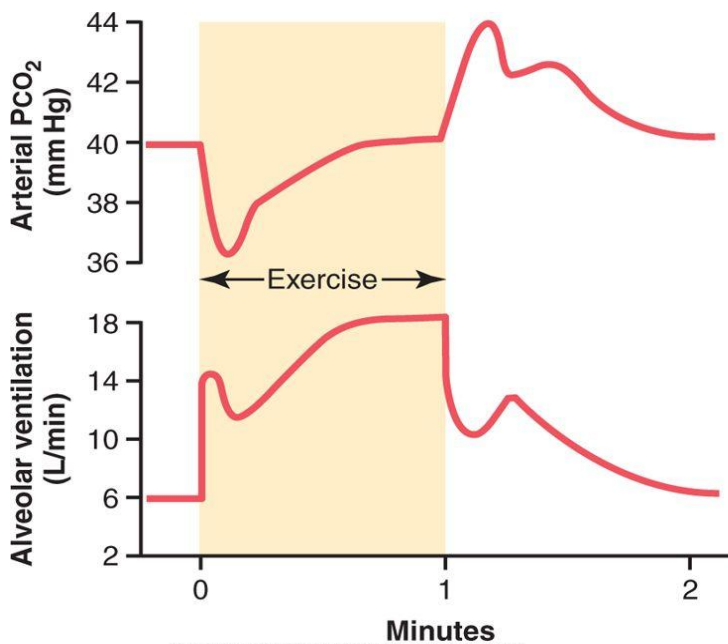
It is known that number of eritorcites in blood is mostly constant, so the constant number of eritorcites performs the transportation of O_2 to cells. The logical conclusion is that always the constant quantity of O_2 is being delivered to cells with each inhalation and similar thing stands for generation of CO_2 in cells during metabolism. Conclusion is clear: PO_2 , PCO_2 , and pH are constant values because of nearly the same magnetic saturation of hemoglobin with O_2 .

7.8 Breathing regulation during muscular work

It should be considered why does ventilation increase during muscular work. It's known that this physiologically important process has not been sufficiently explained. The possible explanation would be that the increased ventilation during physical work is a result of "a spontaneous activity of brain" (lit.10), which gives stimulative micro-current impulses (action potential) from the higher brain centers into RC, what increases ventilation. In support of this explanation there are curves shown in (lit. 8 – Fig. 41-9), which show an increased alveoles ventilation and state of PCO_2 during a harder muscular work. The alveoles ventilation curve clearly shows that ventilation adjustment have two phases and consists of a quick electronic phase which is automatism - a spontenuous brain activity and slow ionic phases - chemical adjusting activity of ventilation. PCO_2 and muscules work's curve shows slow effect of PCO_2 changes in relation to the beginning and end of muscules work, what is logical because its chemical reactions in organism take time to occur in order to change PCO_2 in artery blood.

It's known that we can, by our own will through higher brain centers, control respiration, i.e. we can hipervalentize and hipovalentize lungs in order to produce great changes of PO_2 , PCO_2 and pH in blood. This would mean that by self-willed association we produce micro-current impuls which in the cerebrum's crust provoke response of spontaneous brain activity, which sends a micro-current impuls into RC, and it increases ventilation by breathing muscules. On the basis of these two examples it can be supposed that increased ventilation during muscular work is just learned answer from CNS, what coresponds to the spontaneous brain activity, i.e. to automatism. (lit.10).

At the end, it's very important to repeat once more that all biochemical reactions as well as roles of hormones, proteins, enzymes are not in contradiction to this work, rather they are complementary. It's also pointed out that all scientific discoveries so far presented are not possible to interpret in any other way but from the aspect of insight into magnetism and CR. This serves to additionally fill the gap in scientific explanations which have been missing so far, and to eliminate many missinterpretations.



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FG...41-9

Changes of alveolar ventilation (lower curve), and artery partial pressure of CO₂ (upper curve) during and after cessation of muscular work. (Extrapolated for humans on the basis of the data obtained for dogs; from: Bainton, CR: Effect of speed vs grade and shivering on ventilation in dogs during active exercise. *J. Appl. Physiol.*, 33:778, 1972.)

Little is known about micro-temperature changes in and around cells. It is known that they are changable, for example because of ATP (adenosine triphosphate) and O₂ burning, but how much, it is not known. Temperature changes strongly affect MC and change them. This applies to all matter, and particularly to paramagnetics. If we knew conditions of micro-temperature changes everything presented in this report would be much more valid.

8. THE IMPORTANCE OF THE PAPER

This paper presents fundamental research and innovation in biology and medicine, which represents a clear explanation of the many ambiguities that are present in all biological sciences. By knowing intermolecular magnetic properties, almost all etiological uncertainties which cause serious diseases such as cancer, atherosclerosis, diabetes, mental disorders and much more, can be detected. This paper clearly recognizes that the epidemiology of mass disease enters the environment as a cause, i.e. analytical epidemiology receives quality. These findings are changing i.e. innovating therapeutic approaches in the treatment and prevention. Magnetic properties clearly explain the physiological uncertainties i.e. biophysical studies fully define the physiological unknowns and then it is possible to act on them.

So we end up with the quality and quantity of life. To explain the significance of this work requires a lot more space, but it must be said briefly that there are unforeseeable perspectives in all fields of biology and medicine. From the literature of this paper, it can be perceived the number of published work with spectacular results, and causes are anomalous magnetic fields present in people's living space.

9. CONCLUSION

Magnetic characteristics of hems - hemoglobin, oxygen, carbon dioxide, and cells enable gas exchange in organism.

Contemporary science is not acquainted with magnetic characteristics of cell. This is why I present that the magnetic characteristics enabled generation of cytoplasma, nucelus membrane, and cell membrane. It has been clearly documented that the Earth magnetic field and paramagnetic molecules, of which cells consist, enabled generation of cytomplasma and nucleus and cell membrane. This represents a great evolutionary step in the development of living world on the planet Earth.

Crossing Over is explained by magnetization of the parts of chromosome, which is defined as an exchange of the parts of homologous chromatides in the direction of natural magnetic lines of force, i.e. north and south. It has also been presented why are tumor cells enriched by these exchanges. Earlier reports about generation and development of tumor confirm this, werefrom it is clear that tumors are generated in an enormous magnetic field. The strogest confirmation of this is diagnostic method of magnetic resonance in oncology which functions due to vectors magnetization of cells. Since the Earth magnetic field participates in Crossing Over, it is clear that the Earth magnetic field participates in evolution (adaptation of the living world to the external environment).

Division of cells occurs under the influence of the Earth magnetic field, because everything that is made of paramagnetic substances, and located in magnetic field, magnetize. This gives the role of a promoter to the Earth magnetic field in cell division, and represents news in biological sciences. A cell that becomes wild and starts dividing endlessly is a malignant cell, and is generated by gen's mutation in, most oftenly, artificial magnetic field. Mutation of paraoncogen enables unlimited division of malignant cell, and, this is the formula of eternal life.

We are free to say that the cosmic radiation, Earth magnetic field and magnetic characteristics of constructing substances of macro-molecules enabled, in the most part, creation of life on the planet Earth.

Magnetic characteristics are dominant forces which give the greatest contribution to oxygen and carbon dioxide exchange in alveoles and capillaries. Magnetic characteristics enable oxigen to enter into cells and to throw carbon dioxide out of the cells and capillaries, i.e. from alveoles, into the atmosphere.

The most important functional totality in respiration, that is nervous system in breathing regulation, has been presented. It has been explained that generator of micro-electric currents in the central nervous system is ionozing cosmic radiation (soft component). The great delivery of oxygen through blood into the gray matter of the central nervous system enables cosmic radiation to generate a cloud of electrons whose moving direction is towards autonomous and peripheral organs. These micro-currents (action potentials) stimulate, by axons and synapses, all the happenings in body. Reception system, again through micro-currents, returns nervous impulses into the central nervous system, where the organism's response to the external excitements generates.

Many unclear points have been cleared up thanks to the comprehension of magnetism and cosmic radiation. There are some insignificant problems left to be fully explained, but with additional informations about micro-temperature changes in organism, as well as about electrical and magnetic characteristics of particular centers, everything that is now unknown, would be cleared up.

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