BREATHING AND MAGNETIC CHARACTERISTICS

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BRIEF CONTENTS

Introduction (general)

Biosphere is characterised by Earth magnetic field and cosmic radiation, and ruled by magnetic and electromagnetic forces.

Atoms consist of electrons, protons and neutrons. Atoms' nuclei have magnetic forces. Inside atoms rule magnetic and electromagnetic forces. Molecules are created by connection of valence electrons. Everything happening in the biosphere is under the influence of magnetic and electromagnetic forces. Biochemical processes happen in the Earth's macro-magnetic field with micro-magnetized substances - molecules.

Aim of the work. On the basis of facts, to show and prove that magnetic characteristics of oxygen, carbon dioxide, hems (hemoglobin - eritrocite) and cells are the main factors in respiration process. In order to achieve this, the Earth magnetic field influence should be explained, as well as the influence of cosmic radiation, and magnetic characteristics of macro- molecules (consturcting substance of cell), upon evolution, reproduction and respiration.

To present magnetic characteristics of cell, i.e. how cytoplasma and nucelus's and cell's membranes are created. To explain how and why does Crossing Over occur. To present in details, the Earth magnetic field's influence upon division of mother cell into two daughter cells.

To explain oxygen and carbon dioxide exchange in lungs and cells, from the aspect of magnetic characteristics. To eliminate the wrong opinion that during breathing the main factors are the diffusion characteristics, and partial pressures of gases. Because of many unclear things about nervous system functioning in breathing regulation, the aim is to explain how this respiration regulator functions.

Work method. Study of official scientific literature about cell, respiration and the nervous system role in the regulation of breathing. Connecting natural Earth magnetic field, cosmic radiation, and magnetic characteristics of cells with the evolution, reproduction and respiration. This is something new in the field of interpretation of biological, i.e. biochemical processes.

Results. On the basis of what is presented in the Chapter on cell magnetic characteristics, it may be suggested that every cell has a characteristical magnetization, i.e. magnetic characteristics. They are very important in metabolism processes of all cells. Crossing Over is a very importan mechanism which provides polymorphism, which is provided by Earth magnetic field, i.e. influences the evolution of living world. Since it is known that Crossing Over is very frequent occurance in malignant diseases, it can be suggested that cells' tumor occurs in an enormous magnetic field. From what is presented, we can conclude that a part of chromatides can be magnetized. The decisive factor that triggers the cells' division is the Earth magnetic field. Tumorous cells, which uncontrollably divide, occur in an unnatural magentic field, most commonly produced by urbanization.

On the basis of all the presented concerning oxygen and carbon dioxide exchange, we can suggest that magnetic characteristics enable respiration.

Chapter about nervous system in breathing regulation, explains how micro-current impulses (action potentials which produce nervous impulses) are generated by cosmic radiation. Then, it is explained in what way do oxygen, carbon dioxide, hemoglobin, and cell characteristics enable breathing.

Conclusion. Magnetic characteristics enable respiration. Earth magnetic field, cosmic radiation, and magnetic characteristics of macro-molecules have a decisive contribution towards evolution processes, in general. The Earth magnetic field is a triggering force for division of mother cell into two daughter cells. Cell's division and Crossing Over lead to a conclusion that cause of tumor appearance is an enormous, unnatural magnetic field. Right this enormous magnetic field enables a tumor cell to divide continually and uncontrollably, what makes an ever-living cell. Micro-current impulses, generated in the breathing part of the central nervous system, are respiration regulators. Conductivity of micro-current impulses in body is fast electronic and slow ionic (chemical). All biochemical processes are presented.

Key words: Earth magnetic field, cosmic radiation, cell's magnetic characteristics (organele, membrane) micro-electric currents - nervous impulses - action potentialities.

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 to me, there is no explanation that takes into account magnetic characteristics (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 I will present respiration functions according to inspiration and expiration processes. Especially detailed, I present the nervous system role in breathing process regulation. Other functional parts I will present in another paper, only then the entire process of breathing will be presented in continuity. I have sellected the role of nervous system in respiration process because it is the least explained in literature. Especially because fundametal ingnorance is found in the human biology.

The known principles I will briefly comment, and I will stress those parts which reveal new scientific presentation of respiration functioning explanations. In the text, I will also explain 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. I point out that no biochemical process is in contradiction to occurances influenced by MC, they are rather complementary to each other.

The role of Earth magnetic field (EMF), and MC of cells in living world evolution, and living organisms reproduction, I will explain in details.
I will also explain why is every cell magnetization center located in its nucleus, and how cytoplasma and membranes are generated, what represents a great evolutionary step in the living world. These new scientific explanations are my contribution, as a geophysicist, to further development of biological science.

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, I point 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 towrds 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 is the strongest magnetization in human body located - it is in the area of pineal gland. My conclusion is that all cells have typical MC, and the strogest are in the central nervous system cells (CNS) i.e. neurons which usually either have no cytoplasma or it is extremely thin. In biological science it is well known that cytoplasma 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 I know, generation of citoplasma has been discussed very much, but clear explanation has not been given. I will try to give a contribution towards clearing up 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 one-membered DNA enabled, by separation gethering of substances around DNA, and this is cytoplasma and first membrane generation. Cytoplasma has a different molecule constuction and density compared to substances out of cell.

By an induced magnetic field, originated from cell's organelles, cytoplasma was produced. Concentration of paramagnetic substances in a nucleus, which contains mostly chromosomes and chromatine, produces an induced magnetic field around the nucleus. On the interface of the induced magnetic field of the nucleus there concentrate substances of typucal magnetic field, which make a double-leyered cell nucelus membrane.

Cell membrane generation:
In the very cell, beside nucleus, in the cytoplasma 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 paramagnetics. They have characteristical magentization vectors, which produce an induced magnetic field around organelles. These magnetizations gether according to the vectors laws, and give a complete cell's magnetic field. As we know, there exists the Earth macro-magnetic field (EMF), and then on the connecting point of these two magnetic fields there concentrate typical substances, right in the point of ballance of two magnetic pressures (magnetic field of organelles and EMF). This point is characterised by substances which construct the cell's membrane, i.e. plasma-membrane, which consists of two layers of "lipide molecules in which various proteins are built in" (lit. 2). These substances concentrate, because this type of magnetic field enables only them a separate gethering, which can be seen through microscope as a two-leyerd 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, I would conclude that every cell has a characteristic magnetization, i.e. MC. They are important for metabolism in every cell. I point out 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 magentizations in cells. Crossing Over is a great argument for proving the MC existence in cells, that follows next.

CROSSING OVER

A big proof that chromatides on hromosomes are megnetized 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 chromatides 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. 2). As we know, EMF's direction is north-south, so the vectors of EMF have magnetized parts of chromatides 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 chromatides break. There are two more proofs confirming chromosoms' magnetization. The first is: "if gens on chromosoms are close to each other, they develop rather rarely. The further they are from each other the greater the possibility for their separation" (lit. 2). 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 chromosoms, so the unique induced magnetic field is on all segments of both chromatides, and then there is no exchange in the form of Crossing Over. If homologous gens on chromosoms are far from each other, then elementary magnetic domains (which have magnetic momentum) are of indipendent orientation, since gens magnetize differently, too, so the gens' segments which get south magnetization tend to move towards north. While gens' segments, which magnetaize northward, tend to move towards south. This brings up break of homologous segments on chromosoms in north-south direction.

The second proof that chromosoms 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. 2). 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 recimbinations, and, by that, polymophism" (lit 2). 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 chromatides, caused by, for example, radiation, chemical matters, viruses, bacteries, and especially malignant diseases, increase frequency of the parts of chromatides' exchange" (lit. 2). I must point out that my reports about the cause of malignant diceases appearance (lit. 3,5,6) have explaned 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 malignantd diseases.

On the basis of all the above presented, we can colclude that chromatides are magnetised, and that is why the magnetization center of every cell is in its nucleus.

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. cytoplasma 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 mithosis, and it lasts for rather a short time period. Mithosis is divided into four morphological phases, as follows: prophase, metaphase, anaphase, and telophase. The mithosis process is mostly the same in all eucariot cells (cells with differentiated nucleus). The division is realted to cell's cytoplasma and organelles, too.

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

In the prophase, each chromosome consists of two chronomenes, 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 nucelus 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. 2). Claim that microtubules (constructing substances of the dividing spin), allegedly, move centriols towards cell's opposite poles, does not make sense. I would like to repeat the following: 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 centriols there appear filaments of star-shaped morphology (what is typical for magnetizations around magnetic poles), made in the form of accumulation of substances with characteristical MC, and called micro-tubules. Micro-tubuls connect with each other and make dividing spin. Generation of nucleus' membrane suggests that it is clear why does membrane disassemble. The cuase is in the change of magnetization center, namely, centriols, by their magnetic forces, disassemble membrane, which fragments, and mixes with cytoplasma.

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 fibriles they are connected with centriole. This configuration is called equatorial plate. And in this phase, chromosomes get magnetized more and more, with the same kind of magnetization.

Now comes the instance when centromers divide, and chromatides 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. I would like to point

out the following: "although there are several hypotheses, the phenomenon of chromatides' movments towards the opposite poles of cell, it still has not been explained definitively" (lit. 2). Exactly, the above given explanation is logical and unambiguous.

The chromatides, which could be named "daughter" chromosomes, reach the opposite poles of cells, and this phase is named telophase. The chromatides, 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 paramegnetic substances of endoplasmic retuculum fragments. Probably, something similar happens to other cell's organeles, which also divide, i.e. first they disintegrate, and then are generated in the cell's cytiplasma. Then, a collective induced magnetic field is made by cell's organeles, which by their magnetic field, frist, make a dividing furrow, and then, a membrane for newly generated daughter cells. In literature it is said that "the controlling mehcanisms of dividing furrow formation are not sufficiently clear, yet" (lit 2). In the equatorial part of the dividing cell, there begins collection and separation of cytoplasma, what is an answer to the existance 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-leyered lipid membrane. Because lipids are typical paramagnetics (lit 4,7).

It should be noticed that telophages 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 centriols which function during the division.

Finally, I would quote the following: "Cell's division has been studied intensively, and, although morphological changes have been discribed 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 2). 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 existance of MC of cells. After twenty years of research work, I have 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 megnetic field (lit 3,5). 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. I hope that this will be clear to everyone when they understand that tumor genesis has been discovered.

In the following section I give the explanation of cell's death. 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.

Ever-living malignant cell is generated by paraoncogen mutation into oncogen only in an enormous magnetic field. Most probably, telomers of malignant cells, already created through the mutation,

can be restored by new paramagnetic molecules. That means, telomers' ends, after greater number of magnetization and demagnetization, lose MC, and are replaced by new paramagnetic substances, which happen all the time. That is why such cell divides endlessly, and represents an ever-living cell.

MAGNETIC CHARACTERISTICS IN OXYGEN AND CARBON DIOXIDE EXCHANGE

In brief, I will present unclear things about diffusion and partial pressure marked as causes of O2 and CO2 exchange in respiration, found in literature.

Diffusion is a free moving of gas molecules from an area of higher concentraction to the area of lower concentraction, tending to equalize partial gas pressure, which is a tendency towards gas homogenisation. Movements of molecules is random. Molecules colide 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 alveoles - the average difference is less than 1 mmHg – so that by today's methods such a small difference can not be measured exactly." (lit.1) 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 monixide (CO), on the basis of the law that diffusion capacities for some gases are directly proportional to the diffusion coeficient (solubility of gas/root of molecule gas mass) of that gas, but similar difficulties occured. "Measuring of partial pressure of O2 in lungs capillaries blood is difficult and not exact" (lit. 1). 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 occured, 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. 1). 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. 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.

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 constractive 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 funcional parts, as follows:

1. 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 inspirium and expirium stages.

2. Atmospheric air enters into alveoles (empty space) and capillaries (blood space) where the exhange of O2 and CO2 takes place, the exchange process happens because of MC, hemoglobin, O2 and CO2.

3. Transportation of O2 through blood to all cells.

4. 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.

5. CO2 as a diamganetic, gets thrown out of cells, because of MC of organelles, into the blood, which transports it into alveoles, from where through expirium it goes into the atmosphere.

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

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-astrocits, 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 cosmic radiation (CR) is large, that is enabled by anatomical construction and location of CNS (lit 9). Created micro-currents are conveyed by axsons and synapses to muscules of diaphragm and ribs which strech lungs during inspirium. After the action potential, elastic withdrawal of lungs and thorax, what makes expirium.

Rhytmic repetitive demostration of action potentialities, i.e. micro-current impulses, is provided by a rhytmic 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 9). 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. I would repeat that RC is in medulla oblongata and pons, i.e. located in several groups of neuron islands, which are dorsal, ventril, and pneumotoxic.

I would like to comment the things that are not known, such as: "breathing rhytm is mostly made in dorsal group of respiratory neurons. Even when all peripheral nervs which enter into medulla oblongata, as well as brain trunk above and below medulla oblongata, get cut, this group of neurons still sends repetitive salvoes of the inspiratory action potentials. The main cause of this repetitive emptying is still unknown." (lit 1).

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 I have explained how do repetitive salvoes, i.e. micro-current impulses, occur. Yet, it should be explained how comes that this neurons group sends repetitive salvoes even after all peripheral nervs, 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 salvoes, because the CR is showery very similar to the repeating salvoes, and does not depend on the separate brain centers' nervs cutting.

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 breathig frequency is the following: "The earlier disappearance of gradual signal, the shorter inspirium lasts. Because of still unclear reasons this shortens the lenght of expirium" (lit 1). 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 cosmic radiation are able to release electrons, the current impuls 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 stran), then, that it functions as an ordinary electroscope, and the like.

Ventril group of breathing neurons provides breathing signals when there is need for larger lungs' ventilation. The same neurons group inerves abdominal musculature during hard muscualr 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.

Apneuistic 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 macro-temperature changes which can change MC of cells, i.e. molecules, are missing.

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 nervs 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 (eferent somatomotoric-drainage) stimulate muscules 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 impuls towards muscles, and now somato-sensory input 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 muscules' strain, namely, it functions, probably, as an micro-electric folder of these sensors. This is how Hering-Broer's inflation reflex could be explained.

Ventilation control in relation to the needs of organism, which relates to maintenance of tissue concentration of O2, CO2 and hydrogene ions on the proper level, is a chemical control of breathing.

Excessive quantity of CO2 (or excessive quantity of hydrogene ions) mostly influences directly the respiration center which send motoric signals into breathing musculature. O2 achieves the control through chemo-receptors located in cariotides in aorta arch where artery blood is, and are called corpuscules.

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 1). 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) concentraction has been explained by metabolism, i.e. kidneys correct the hydrogen and bicarbonate concentraction.
Role of O2 in the control of breathing through peripherial chemo-receptory systems, located in the form of corpusculles in carotides and aorta, also, a few of them are located in other arteries of thoraxic and abdominal cavity. "Exact mechanism through which the low partial pressure of O2 excites nervous' endigs in cariotide and aorta's corpusculles, is still unknown"(lit 1). Therefore, it is not known how does the low O2 concentration in artery blood directly stumulates nervs' ends in corpusculles. The explanation is following:

Since it is known that through corpusculles artery blood flows and has twenty times larger mass then the very corpusculles, this means that the blood flow is extremely large. The very corpuscules have nervs' endigns 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. erotrocite did not get O2, so the MC of the very hem in erotrocite without O2 is stronger. Since the artery blood flows rapidly through corpusculles, 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. 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 muscules 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 genrated 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.

In literature a mixed effect of PCO2, pH (concentration of hydrogen ions) and PO2 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 PCO2 move rightwards and leftwards, but only with constant PO2 40, 50, 60, 100 mmHg (lit 1 Fig..41-7). These rightword and leftward movements have not been explained. In literature it is stated that curves serve to determine alveolic ventilation when PCO2 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 O2, because hydrogen ion connects with hem and then there is less places for O2, that is why does the decreased alveolic PCO2 follow, because in cells less CO2 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 O2 in blood, the larger gets alveolic PCO2, because in cells appear more CO2 molecules and the curve moves rightwards. I hope that 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.

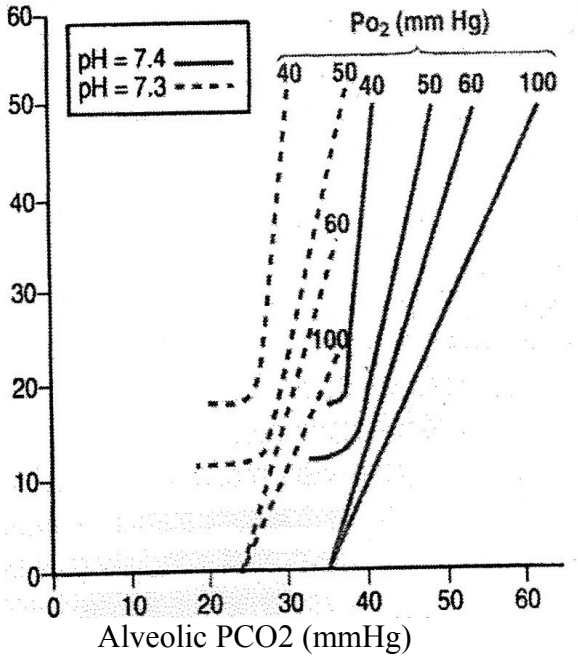

Fig.41-7
A complex diagram showing interrelations of effects between partial pressure of CO2 partial pressure of O2, and pH upon alveolic ventilation. (On the basis of results from: Cunningham, DJC i Lloyd. BB: The Regulation of Human Respiration. Oxford: Bllackwell Scientific Publications, 1963.)

Regulation of breathing during muscular work is a clear proof that MC of O2, hemoglobin, cells and CO2 are very important during the process of respiration. "During muscular work consumption of O2 and generation of CO2 can increase even twenty time" (lit 1). This means that as the consumption of O2 and generation of CO2 increases, alveolic ventilation increases in accrodance with metabolism in organism. This is why artery PO2, PCO2 and pH stay always constant, which has been found, too. This, aproximatly constant concentration can only be maintained by MC. As far as I know, there is no chemical reaction which can have such an effect upon the speed of metabolism during a short time period, i.e. upon O2 consumption and generation of CO2, as well as upon their consumption decrease, all this in function of organism's needs. Statement: "since that measurements of artery PCO2, pH amd PO2 have shown that none of these factors change during muscular work in order to stumulate breathing" (lit 1), confirms the previously suggested, and also the constant saturation of hemoglobin O2 present is in accordance.
It is known that number of ecritorcites in blood is mostly constant, so the constant number of eritorcites performs the transportation of O2 to cells. The logical conclusion is that always the constant quantity of O2 is being delivered to cells with each inhalation and similar thing stands for generation of CO2 in cells during metabolism. Conclusion is clear: PO2, PCO2, and pH are constant values becase of nearly the same magnetic saturation of hemoglobin with O2.

It should be considered why does ventilation increase during muscular work. As far as I know, 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.9), 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. 1 – Fig. 41-9), which show an increased alveoles ventilation and state of PCO2 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. PCO2 and muscules work's curve shows slow effect of PCO2 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 PCO2 in artery blood

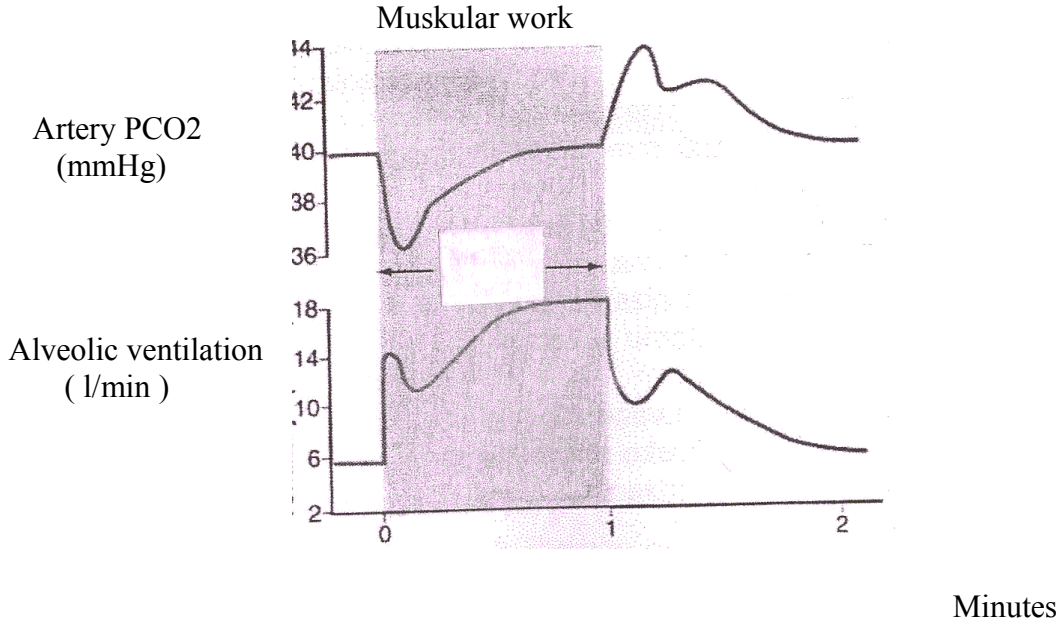

Fig 41-9
Changs of alveolic ventilation (lowercurve), and artery partial pressure of CO2 (upper curve) during and after cessation of muscular work. (Extrapolated for humans on the basis of the data obtained for dogs; from: Bainton, CR: Effect of speed vs grade and shivering on ventilation in dogs during active exercise. J. Appl. Physiol., 33:778, 1972.)

As we know, 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 PO2, PCO2 and pH in blood. This would mean that by self-willed association we produce micro-current impuls which in the cerebrum's crust provocate 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.9).
At the end, I mus repeat once more that all biochemical reactions as well as roles of hormones, proteins, enzimes are not in contradiction to this work, rather they are complementary.
I also point 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.

Little is known about micro-temperature changes in and around cells. It is known that they are changable, for example because of 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.

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. My 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, I believe, this is the formula of eternal life.

We are free to say that the 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 cosmis 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, I believe, everything that is now unknown, would be cleared up.

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