



Movement of structured water and the life

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Abstract

Mechanochemical processes are investigated at a frequency of 1 Hz in the moving water. Shown that oscillations of water gives an increase in the concentrations of protons and products with a high oxidation potential necessary for the life. The obtained results helps to the understanding of the processes in the blood capillaries – the main link of metabolism. The role of the movement is illustrated by the development of buds of Kalanchoe

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Introduction

When the heart stops, the movement of moisture, the body dies, and the protein exists. Proteins are absent in the trees, grass, but they live, until it moves water from the roots. Jellyfish is 96%, and 99% water. What is left for the proteins, fats, carbohydrates, and salts? Analysis of gases in areas of the USA with a smog or without it, gave a constant content of H_2O_2 in rainwater. The content of oxides of N and S varies widely. [1,2]. Authors believed that the cloud fluctuations are saturated with O_2 resulting in H_2O_2 . Infected Sn under water [3,4], although infects metastable structure I_c [5], it solvents disposable, but the infection is at vibration [3]. In the body of any living creature, most part of the water, but we know very little about its main role in the life of Nature, and it's struggles with the troubles that it carries the crown of her creation, living common to all views "walking views", believing them, not wanting to reflect on their absurdities. The pulse of living beings has the same value of 1 Hz is hardly accidental. For the simulation of blood circulation selected the same frequency.

Experimentals

Measured changes in the potential of Pt or quinhydrone ($Pt/C_6H_4O_2 \cdot C_6H_4(OH)_2$) electrodes against a saturated calomel (SCE) reference electrode and glass electrode readings with fluctuations of

water. Water samples were usual water, river, melt, distilled. For the removing of dissolved gases, water was boiled and cooled in a closed vessel. With one portion of water held in a test experience on the air, and with another of the same batch in a sealed box. The signal is clearly reproduced from the traffic and almost does not depend on the possible absorption of gases from the air. After each cycle of vibration occurs identical relaxation. Shaking of the vessel is carried out either by a single push manually or by series of shaking with the help of a doser, by a piston dispenser with a given frequency and volume by means of a movable piston taking away and injecting water; or by means of a time relay with a frequency given by a metronome causing reciprocating motion of the trolley with water. The signals were recorded discretely by a voltmeter ME-31, by PC each 0.75 sec or recorder H307/1 continuously. The water was placed in a shielded vessel. Background noise from working nearby relay, doser, meter is more than an order of magnitude lower than the signal. It is caused by thermal motion of the water, giving dissociation of water. Phenomenon equally and reproducibly with a stationary electrode and vibrating with the water together. Relaxation to almost the original value, monotonically and is identical after each cycle of the oscillations, grows with the number of aftershocks, indicating the accumulation of the reaction products. Moving truck was always across the magnetic field of the Earth to eliminate the possibility of magnetization. The temperature control was $\pm 0,2^\circ C$, but in the experiments for determining the composition of the gases, the accuracy was $\pm 0,1^\circ C$. Experiments with controlled atmosphere is produced in the sealed box, and water boiled and cooled hermetically.

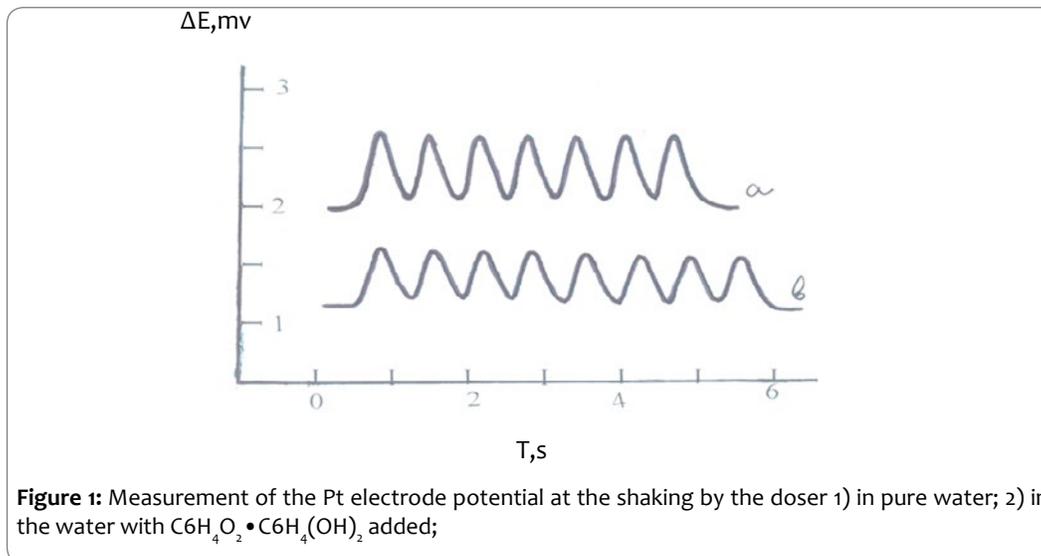
Experimental and discussion of results

Authors [1,2] confused the cause and effect: there is constant movement of a water in the clouds creates a constant content of H_2O_2 , and O_2 is released from it to air. Rightly said da-Vinci about "animated" (always moving) water. People noticed too: "Grow like mushrooms after the rain." A lot of water in the swamps, but more importantly, that they got the moving water with the right products, the form of water with the ability to build new clusters for their matrix. When the sea spilled oil, the fish is not enough of O_2 . Spilled oil dampens of H_2O vibrations of, so nothing produces H_2O_2 and O_2 for life of Nature, for green friend including. The fish are looking for in the alien environment of salvation and we all believe, as taught us that the O_2 in the water from the air, and not Vice versa. Respecting the photosynthesis and

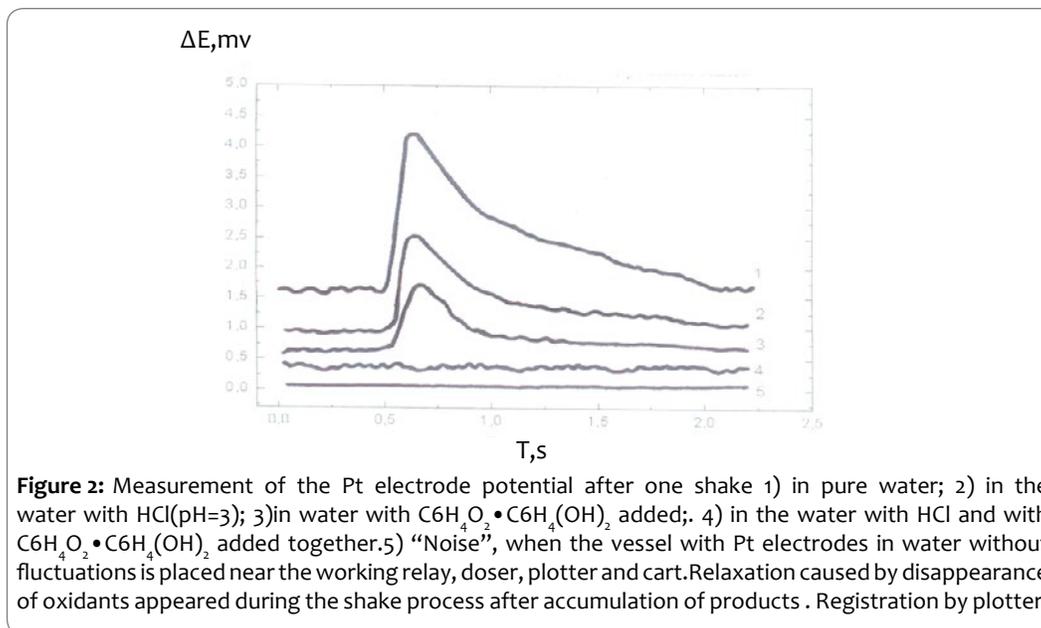
green friend for the whole benefit of it, someone else's merit to ascribe to him is not necessary. CO_2 absorbed and O_2 will stand by $n(\text{H}_2\text{O} + \text{CO}_2) = n(\text{CH}_2\text{O} + \text{O}_2)$, but the same back at the backlash after the death, burning, rotting. Plants are not eternal. Seas covered 71% of the Earth's surface, the plant remains only 29% of the land. Most of them are in the deserts, rocks, ice, high mountains, where there are no plants. Half time takes place in cold seasons, half in the dark. And green friend appeared, when on the Earth arose O_2 . after its release from icy clothes. Volcanoes took out the gases to the surface. The "Greenhouse effect" the ice melted. When there is the water, the Sun

creates rivers, avalanches, currents, waterfalls, icemoving; the Moon - the tides and the low-tides; the Stars of the Cosmos – permanent waves. Life originated in the ever-moving waters of the world oceans of the Earth.

Reduced pH glass electrode in the pitching of the vessel manually. 5 min. pH was decreased by 0.1, and 5 minutes of rest, the pH returned to the original. Periodic fluctuations give the periodic growth (+) ΔE for Pt and quinhydrone electrodes in the ratio 2:1 by the moving of water any way.



In Fig. 1 seen some increase in the common E from the accumulation of products. The difference in the increase in ΔE by half in water with quinhydrone. With fluctuations from the one shake also differ by half. Fig. 2 shows that the total peak (fig 2, 2) of total changes in Red-Ox potential is equal to the sum of two equal peaks, appears with the addition of HCl at a pH=3



quinhydrone fig (2, 3). There is (fig 2, 4) no signals when added to water of both impurities. The noise in the stationary pure water near the running relay and the doser is equal ~ 0 (fig 2, 5). A long hesitation, give savings more products and return to the original E longer. Fig.3 shows the behavior of the potential of the Pt electrode in the. melt water from its original values E in

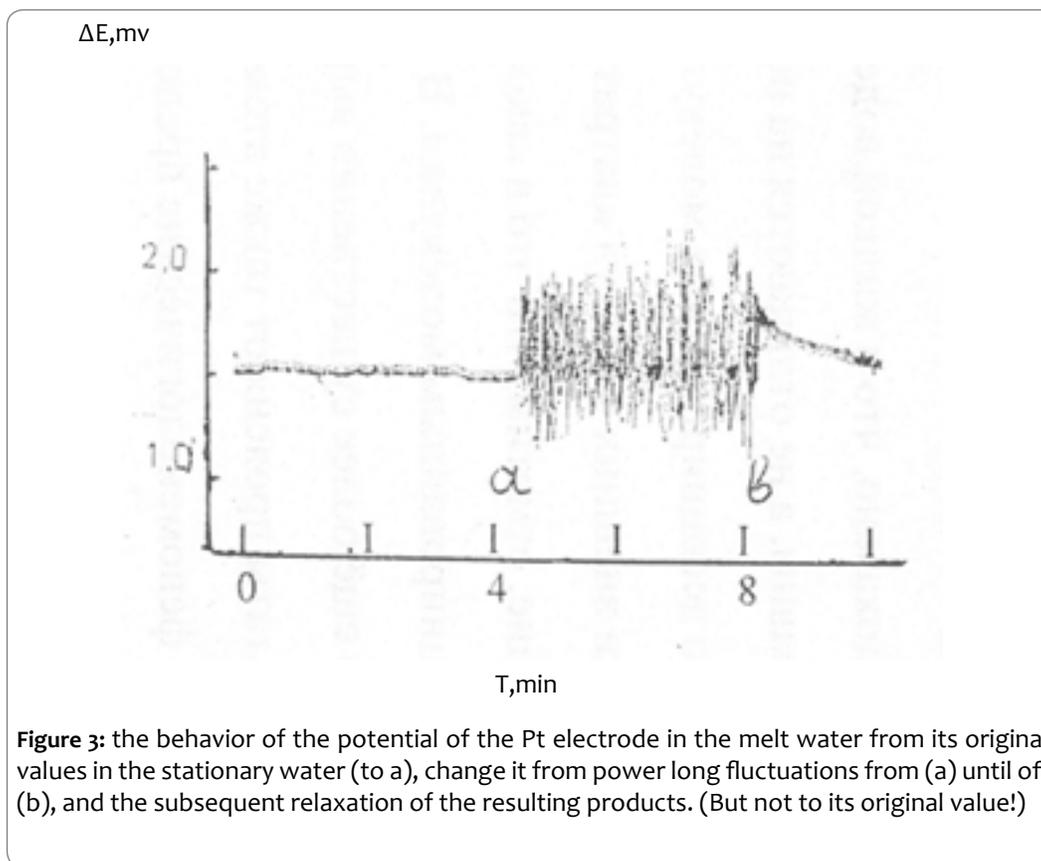


Figure 3: the behavior of the potential of the Pt electrode in the melt water from its original values in the stationary water (to a), change it from power long fluctuations from (a) until off (b), and the subsequent relaxation of the resulting products. (But not to its original value!)

the stationary water without shocks first, then change it from include (a) to off (b), relaxation of these products later. The emergence of Ox-products can't occur without the appearance of Red-products, as well as ions H⁺ without OH⁻ ions. The pc without any guidance about this regard is itself calculated summary pair of relaxation curve products such as the assumption and the loss of Ox-products with reduction (+) the values of E and increase (+) the values of E as a loss of a Red-products. Mathematically was treated of relaxation of the accumulation of the reaction products in the absence of electrodes. They are introduced only to indicate the process occurs in the movement of water, for which they are not needed. There is a mathematical processing of the relaxation curve buildup of reaction products in oscillating water in the absence of electrodes. There is experimental data calculated curves as the sum of loss of Ox-products of reduce of the + values of E and the growth + the values of E at loss of Red-products. The kinetics of relaxation is given by the equation $y = 51,75 \cdot e^{-0,0894x} + 12,65 \cdot e^{0,0168x}$, representing the superposition of two exponentials of the recombination products, formed in case of fluctuations of water from impacts of polymers that contain up to 10^{13} [6,7] H₂O molecules. In their sustainable power system hydrated electron [8] that is, radical H^{*}, atomic H. So the polymers capable of chemical processes without compromising the conservation law [9]. The energy of the polymer is much greater than the energy of one H-O bond. Mechanical impact on klusters tearing bonds H-O, with the peak consists of the sum of the peaks from the growth of the [Ox] products and [H⁺] (fig 2). Again, according to the calculations of the relationships in gases [10] the ionic bond order of magnitude weaker, and the peak appearance of ions would be higher. But water is this. Bonds are broken as with a gap of a pair of electrons to radicals and preserving it at OH⁻, ion, and these processes are equally probable

(fig 2) O can't feature a pair of "legal" covalent electron from the H in molecule and the couple shared with "foreign" proton. So, in the water all O-H are equal. Hence the opposite and unacceptable to the usual common to all views conclusion: hydrogen bond isn't negligible in comparison with ionic and covalent in water. What is true of a single molecule or dipole [13] wildly for the condensed phase, created by hydrogen bonds, solid at small sizes O and H. Similar is observed in keto-tautomerism, in peptide linkages, etc. But for water to understand it is beyond the power to scientists-parrots, even with the known fact of the presence in the NMR spectrum of water one, not two lines O-H, as was at their difference After mixing of heavy D₂O with the NH₄OH attempt to separate them will not give NH₄OH without D, D₂O without H. They were taught, taught about gas, not like glass polymer. Authors [13] write about calculations of individual molecules (pages 327, 371) where hydrogen bond is negligible. Schoolparrots to it zero attention and pray for is given in [13], the interatomic spacing and the binding energy for gases and have been actively attacking pseudoscience, daring to distinguish liquids from gases. Bond O:H can at tears save a pair of electrons at O then H:OH = H⁺ + :OH⁻, increasing the concentration ions; section of its gives radicals gives: H:OH = H^{*} + *OH; 2H^{*} = H₂; 2*OH = H²O² 2H₂O₂ = 2H₂O + O₂. (Fig 2), [5, 10-12]. But don't risk to say about the equality of bonds in the water and on the occurrence of O₂ on Earth is of abiogenic water moving constantly to reviewers. They preach: "It's an electrochemical ANY STUFF. If it was so, the air was full of H₂." Children know about H₂-He layer, about the low [O₂] on top. Reviewers from prestigious journals without experiment all knows! Know how to change the pH, heard about the increase in the limiting current ions with stirring. But the water haven't them! Water is water only. I kept as relics these protocols of the secret of the sages. It is not new. Newton gave to Menshikov the diploma of the Royal society.

President of the RASciences Admiral Litke, chemistry expert, by his two votes failed election of genius Mendeleev and so was "chosed" Belstein. For a corporal went millions of Homo Sapiens. Democratic bombing the infidels. Before burned at the stake. The word electrode connoisseurs rejoice: "It, and not the movement of the water changing Red-Ox potential of the water and "ANY STUFF" breaks water into products." In the oceans, in the blood circulatory system has no electrodes, and there is mechanochemistry. Experiments have shown that fluctuations in H_2O without electrodes are better. They only indicators of processes and they even catalyzed relaxation. This was shown by the experiments of savings products with the electrode or without: (A) the electrode during the oscillation was in the H_2O when closed or open (B) of the measuring circuit; (C) to prevent absorbing oxygen from the air electrode was in the stationary test tube with H_2O . The electrode remove from the water is impossible: the O_2 from the air will give a "relaxation". After the cessation of the fluctuations in was removed, the electrode was in the water, exposed to vibrations. Compared the Pt and Sn in the shake in same conditions by the energy of tremors, their duration and composition of H_2O at different positions of the electrodes. The accumulation of the transformation products of H_2O and decline in the potential for Pt electrodes of different sizes and for Sn electrode showed: 1) fluctuations (C) without electrodes gave the maximum value of the accumulation; 2) Circuit (A) accumulation slightly decreases in comparison with (B). 3) increase the area of Pt reduces the accumulation. 4) Sn almost catalyzes relaxation, and Pt catalyzes the reverse transformation of the desired life of the active substances. Perhaps this is related to diseases of the circulatory system have worked with her. The circuit of a cell (A stronger than B) promotes recombination. We emphasize the peculiarity of the positive role of H_2O movement on natural processes. Very important appeared products. But not less important property of the polymer when impacting change. They change their structure, and are near matrix building a new structure in their image and likeness. Because the H_2O in the man and Medusa are structured differently. Because in

the presence of the seed at a distance or on the inert substance is H_2O vapor in the condensation build a similar structure and cause infection Sn [3,4] In the inanimate Nature as a living, to create a new phase required a fetus. And they are different for everyone, though, and are created from the same H_2O . Distorted polymers are built according to the matrix, and the healthy cells of the body are arranged to place the injured patients structures need a healthy healing structure. Growing mushrooms or kidneys Kalanchoe they provide ready-made building material for growth.

The movement of water and development of plants

Held a simple, affordable chemical laboratory experience. Two Petri dishes of the same size filled with the same quantity of dry soil. It is in 3 parts, consists of turf and peat land and 1 part sand. Near a window without direct sunlight .cups feature next, and they put the same dry leaf buds, roots and all. Water for the reference experiment is prepared from melted snow thermostating it at $18^\circ C$, which hold the glaze in equal amounts different water. Water intended for watering of test specimens within 30 min using a piston dispenser, is gaining a given dose of water from the vessel and introducing her back with a frequency of 1 Hz is subjected to fluctuations. Changes ΔE Pt electrodes during single and prolonged oscillations recorded on H301 against the SCE. (1) the Cup is placed the subjects of kidneys. For a given mode, the water temperature in the vessel rises by $0,1^\circ C$. Therefore, it is pre-adjusted to $17,9^\circ C$. So both types of H_2O after the cessation of the shaking have equal temperature. Portions of 20 ml water the kidneys once every three days. In 21-day experience complete. Samples of experimental and control shown in Fig. 4 and 5. Subjected to fluctuations in water gave plants and products, and building material from damaged structures of polymers, willingly accepting the forms of the matrix, in this case the plant itself. Moving water not only give the desired products of chemical reactions, but you will get H_2O in the polymer structure, depressed by restructuring and is able to build the desired matrix in the body, to patch its holes. Resting water of these qualities has not, it is less mobile in this respect.

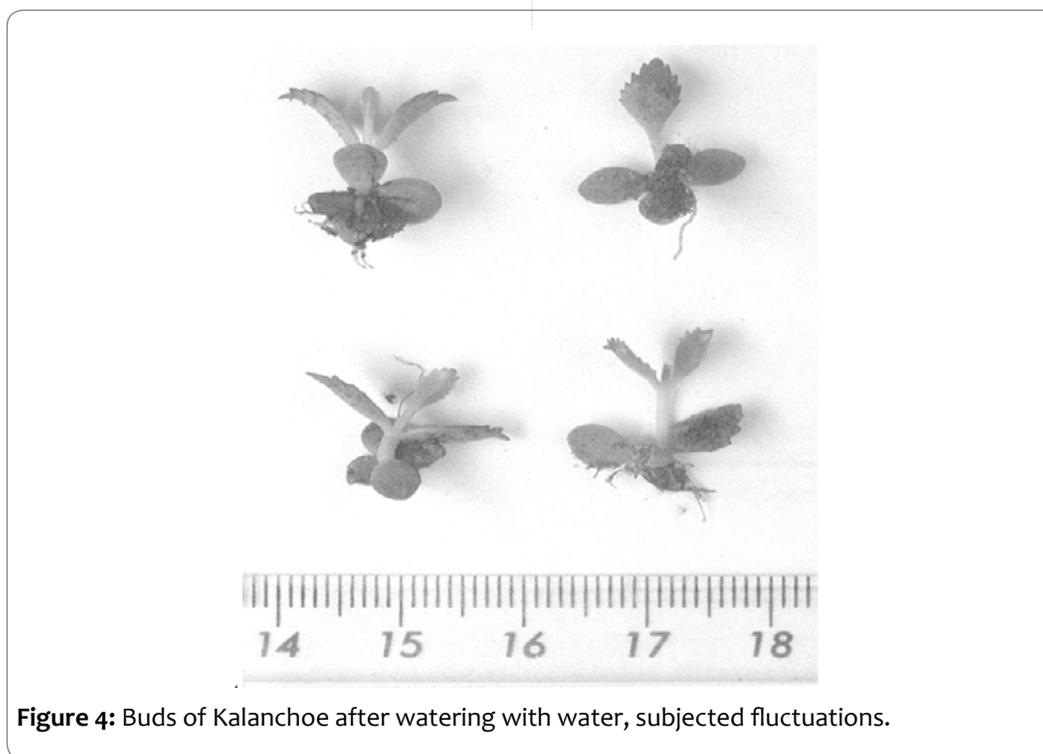


Figure 4: Buds of Kalanchoe after watering with water, subjected fluctuations.



Figure 5: Buds of Kalanchoe after irrigation with water without fluctuations.

In Figure 4 shows the resulting new leaves. They aren't on the test (fig5), although they, too, have grown, but considerably behind in growth even in such a short period of time.

Discussion of results

In ice the arrangement of atoms O a strictly defined structure with tetrahedrally not dense packing. In liquid water the molecules are not in the lattice. Although the middle order is the same, the lack of long-range order allows the secondary molecules to penetrate in the "Central" molecule, resulting in higher density of water compared to ice. Water – like glass. It polymers with sizes up to $100\ \mu\text{m}$ [6,7]. There hydrated electron stable. [8]. So in any rain (moving the water!) content of H_2O_2 , as mentioned [1,2], is constant. Different structures of polymers changes from collisions. Moreover, that will create products. Not only they but also the broken structures of the polymers are retained after termination of the oscillations (Fig.3). Their recombination is influenced by present substances. On placed in H_2O related $\beta\text{-Sn}$ and I_c structure of InSb epitaxial may occur metastable I_c ice structure at a temperature at $150\text{-}200^\circ\text{C}$ higher than it exists as a phase, giving the opportunity to infect Sn on a distance, or from the memory of the contact, or under water [5], to grow single crystals αSn and even defined profile. In organisms, 70 - 90% composed of H_2O , polymers of water exist in the inherent structures. "The wreckage of polymers" adjusted for them, supporting the body. Moving water not only give the right of life products mechanochemical reactions, but will also get H_2O in the structure, ready to build a new, are needed for this body. So on the biological and geological processes affect physical and chemical factors. There is a unity of Nature. Using the inexhaustible energy from the outside, the world's reserves of O_2 are constantly added to the by vibrations of H_2O . Though formed and ozone. Near the

waterfalls, from the friction of ice upon ice drift on the river its scent is felt very much. In all types of water movement and ice, as when it rains the plant life gets and necessary substances (O_2 , H_2O_2 , etc), and construction materials (polymers water with defects). The words about mushrooms after the rain even in the marshland says that the Supervisory people sees, if we don't always understand the reasons. Perhaps something similar happens when "magnetized" water, which is trained in various schools was not interested and ridiculed as a pseudoscience. The authors branded, that research was banned, and it remains unclear whether there is an effect or not The authors branded that research was banned, and it remains unclear whether there is an effect. The authors branded that research was banned, and it remains unclear whether there is an effect. The authors branded that research was banned, and it remains unclear whether there is an effect. How much H_2O are sometimes seen, but unknown features have yet to confirm, understand, apply! H_2O with amazing "anomalous" properties of the most interesting substance in the world and for life on Earth and for science. Dissociation into ions is generally recognized, despite the failure of kT to break the O-H bond. Weak mechanical impact tear from polymers separately durable bonds. There are temperature fluctuations of the water. They provide the dissociation of ions and Red/Ox products. Necessary to quantum concepts such directional fluctuations of that energy of 10^7 molecules will have one for its dissociation! From experimental evidence the inevitable conclusion different from the usual. Historically, the first theories have emerged as analogues of liquids with gases that do not have rigid structure.

The laws of ideal gases applied to the infinitely diluted solutions. The real solutions have instead of concentrate to enter the activity, bringing difficulties to the calculation of the activity coefficient $f=a/c$. The physical meaning f as a consequence of the ion environment is clear. Deviations from the formulas for ideal gases "fixed" in the framework of the atomic-molecular model. The classical theory the number of cases tolerably explains that "reconciled" with the unlikely fluctuation. Phenomenology ignores it, which is hardly reasonable. Liquids have a higher density than the gases, causing doubts about the applicability of the gas laws, even as amended. To ignore with impunity the orientation of the covalent bonds it is impossible. The theory of absolute speeds of reactions are absolutely unable to meet the experiment. As a weak mechanical impact lead to dissociation into ions and the formation of the water Red-Ox products (H_2O_2 [10], H_2 and O_2 [5,10-12]) The formation mechanism of Red-Ox products are discussed in [10-12]. The total energy of the polymers from the sum of bonds of van der Waals, hydrogen, covalent, ionic source relationship, united in a common molecule, as in the crystal according to the zone theory, one link O-H Integrated work is spent on the creation of decomposition products, H_2O is divided into two ~ equal parts. (Fig.2) of Work spent on the gap of the retaining e-pairs at O (Fig.2,3). and with a gap it (Fig.2,2) are as of 1.14:1.0 within error experience. So, in liquid water the energy of covalent and ionic bonds ~ equal and the hydrogen bond is not weak and form a grid with a uniform grid. Energy to break the bond O:H with the formation of ions not rather than with the formation of radicals. If the ionic and covalent bonds were different in magnitude by 10 times, the efficiency of dissociation and radical formation substantially different, but it is not that can be seen Fig. 2. Fluctuations in temperature of water leads to dissociation and the appearance of Red/Ox products, although weaker than the external shocks, by the same mechanism. This is a real understanding of the phenomenon. After cessation of mechanical stress resulting ions, and Ox and Red products recombine, everything returns to equilibrium values for the given conditions. The rejection of conventional views is inevitable. In the liquid, and not gas from other relationships and three-dimensional structures is dominated short directed covalent, not long-range spherical symmetric Coulomb. There is the significant differences of the properties in the bulk and on the boundary of the fractal, which gives the additive nature of the dependence of the energy of the composition, localization of reactions in the framework of short-range order that is not assumed in the classical theory. Water is polymer amorphous body, where the strain breaks not only weak intermolecular connections, but also strong molecular. A shift in any of the bodies leads to the rupture of chemical atomic and molecular bonds. The sp^3 hybrid orbitals and the two lone pairs of O identify short-range order structural units, the tetrahedral environment and the possibility O having coordination number 4. These ideas about the structure of water developed in many works [10-12,14-16]. Polimers (H_2O) $_n$ create glassy mesh of the structural units. Models for H_2O as gas or metals with long-range spherically symmetric Coulomb forces are inadequate. The theory of socialization of the electrons in the zone requires amendment, "effective mass of electrons m_e " type of activity in the theory of solutions. Understand the meaning of a and f at the ionic strength, but if m_e sometimes can be with (-) values, and so "corrects" the calculations without physical meaning. Application of zone model for short-range directional covalent bonds is not adequate and not effective. Model of amorphous solids with short range connections and a variety of forms more precisely. As noted Pauling, the theoretical physicists solutions of the Schrödinger equation for any complex substances for such a long time

have not, it is to continue to use simple, reliable structural chemical representations [17]. Phenomenology does not replace the atomic and molecular propositions about substances and the mechanism of their interactions.

Conclusions

1. Showed the positive role of the movement of water for plant development.
2. Explained reason for the existence of electrolytic dissociation.
3. Confirmed the idea of the abiogenic origin of O_2 and the role of the water movement in this.
4. Suggested that Channels of proton conductivity provide stand-off is due to the soliton mechanism of energy migration. Suggested that energy fluctuations corrects damage to the structure of the hydrogen bonds. . Due to this structure, the cell works as a single unit: signals from one part are immediately transferred to all other.
5. May I suggest to wise theorists to consider a adequate model of the condensed phase of water

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