



The nature of biological radiation and the deceleration of aging

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Abstract

Living organisms have specific biological radiation. This radiation has a material nature, because it affects the objects that surround living creatures and can be registered. The paper discusses the examples of the effects of biological radiation on plant life. It was found that biological radiation can both accelerate and slow down the growth and wilting of plants. The relationship between biological radiation and magnetic field was shown. An explanation of the emergence of geographical "zones of longevity" as a consequence of a high concentration of biological radiation in areas of high geomagnetic field was proposed. A theoretical explanation of the physical nature of biological radiation was proposed.

Keywords: *Biological radiation, Biowaveguide, Saturated water, Magnetized water*

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1. Introduction

According to the results of the research described in the work Zueva (2020), it was found that biological objects have specific radiation that is different from the standard set of acoustic and electromagnetic waves occur in the process of their vital activity. This radiation has a material nature, since it can affect objects located near living organisms, as well as carry out the transfer of biological information from one organism to another.

Also in the work Zueva (2020), it was shown on the basis of the experiments that biological radiation is constantly present in the atmosphere in a scattered state, and that it can be collected and accumulated in various substances. To collect biological radiation, a "biowaveguide" the device for wave transfer of biological information was used, as well as a hollow paper pyramid and permanent magnets. The accumulation of biological radiation occurred in water, glass and quartz. In addition, in the aforementioned work it was shown that biological radiation can be accumulated on various objects without use of special devices.

The accumulation of biological radiation in water leads to a change in its physical properties, namely, to an increase in the gas solubility factor, that is expressed in a significant reduction in the formation of air bubbles in water with increasing temperature. The water accumulated biological radiation was called "saturated."

The saturation of water with biological radiation occurred, inter alia, as a result of prolonged exposure to the magnetic field of the south pole of a ring ferrite magnet. Moreover, the influence of the magnetic field of the north pole of the magnet did not lead to the saturation of water with biological radiation. For this reason, the author concluded that biological radiation may have a nature similar to the nature of magnetic field.

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To clarify the nature of biological radiation, as well as the reasons for the similarity of its effect on water with a magnetic field, the author of this article conducted a series of experiments, described below.

2. Materials and methods

2.1. Magnetized water

The author conducted the experiments to determine whether water treated with the magnetic field (hereinafter referred to as magnetized water) has an effect on the vital activity of plants.

Experiment 1: The viola of the N-Thumbelina variety was taken as an experimental organism (Figure 1).



Figure 1: Before the start of the experiment (March 2, 2019)

For this variety of viola, an almost continuous flowering with an average flower life of two to three weeks is characteristic. Prior to the experiment, the lifespan of the experimental viola flowers corresponded to this standard.

For the experiment, water for irrigation of the viola was magnetized by the south pole of the ring ferrite magnet. Water treatment was carried out as follows: a plastic bottle of water was placed on the south pole of the ring ferrite magnet. A few hours later, complete magnetization of water occurred, this manifested itself as the absence of air bubbles in the water tank.

At the beginning of the experiment, the experimental viola was irrigated exclusively with water magnetized by the method described above. For almost three months of such irrigation, the lifespan of the viola flowers has increased to six weeks.

In addition to increasing the lifespan of the flowers of the experimental viola, the period for their replacement was also extended, that is, the flowers began to grow more slowly than before the experiment. At the same time, the flowers appeared after three months of irrigation with magnetized water had a more saturated color than the previous flowers. Also, more saturated color acquired new leaves of the viola (Figure 2).

Thus, as a result of the three-month irrigation of the viola with magnetized water, the following changes occurred with it:

1. The growth rate of new flowers and leaves decreased.
2. The life expectancy of the flowers at least doubled.
3. The pigment concentration increased in new flowers and leaves.

Experiment 2: As an experimental organism, *trifolium repens* (white clover) was taken.

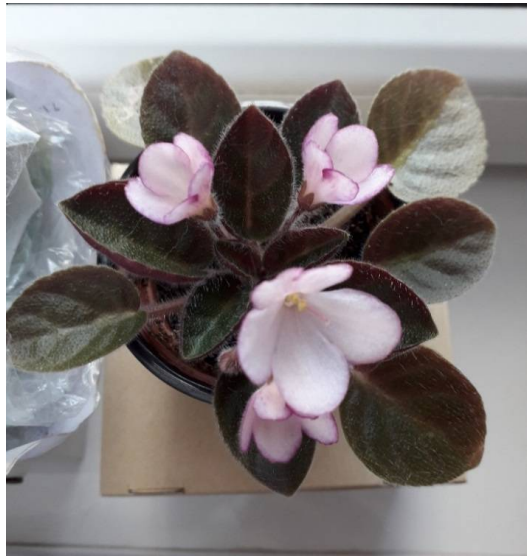


Figure 2: During the experiment (May 22, 2019)

For the experiment, the seeds of *trifolium repens* in equal quantities were planted in two identical plastic pots. In one pot, the ground with seeds was irrigated with ordinary drinking water, in another, the ground was irrigated with water, magnetized by the south pole of large (D85 × d32 × 10 mm) ring ferrite magnet with axial magnetization.

A few days later, *trifolium repens* sprouts appeared in the pots. Moreover, in the pot, where the ground was irrigated with magnetized water, the number of sprouts was several times less than in the pot with the ground irrigated with ordinary water (Figure 3).



Figure 3: On the left is ordinary water, on the right is magnetized water (April 21, 2019)

The *trifolium repens* irrigated with ordinary water grew much faster than the *trifolium repens* irrigated with magnetized water, but it was also less viable. So, two weeks after germination, most of the sprouts irrigated with ordinary water died. At the same time, the sprouts irrigated with magnetized water continued to grow and develop in the same amount (Figure 4).

After another week, it became apparent that the *trifolium repens* irrigated with magnetized water grows stronger and healthier than the *trifolium repens* irrigated with ordinary water (Figure 5).

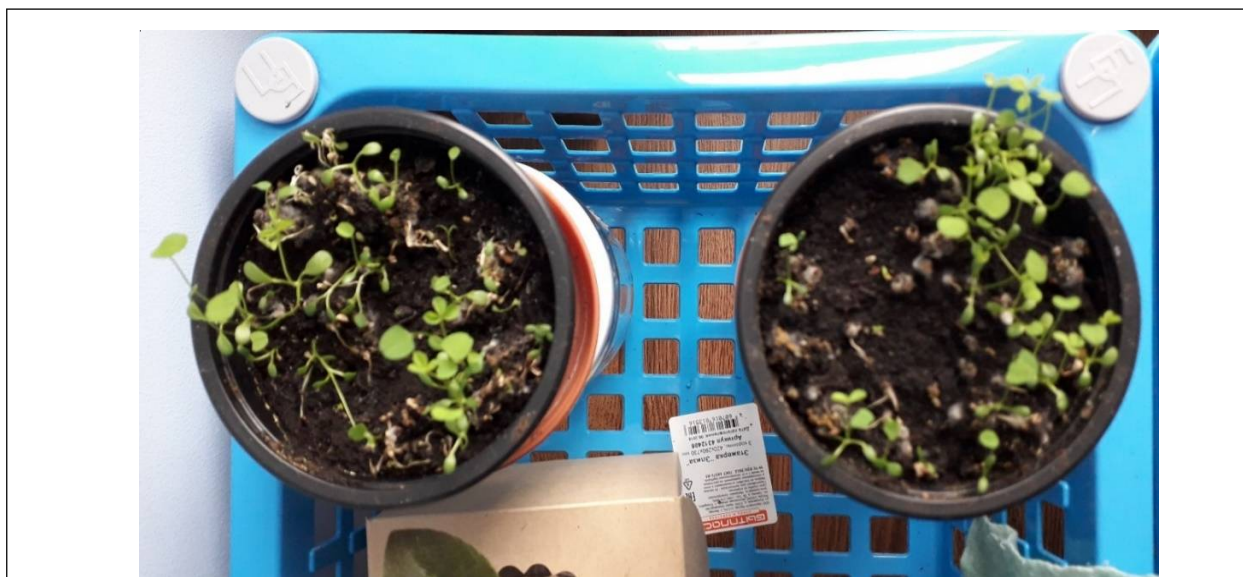


Figure 4: On the left is ordinary water, on the right is magnetized water (May 2, 2019)



Figure 5: On the left is ordinary water, on the right is magnetized water (May 9, 2019)

Further, the experimental conditions were changed. Instead of the single ferrite magnet, the water for irrigation the experimental trifolium repens sample was magnetized by the south poles of two half-ring ferrite magnets ($R27 \times r10.75 \times 7$ mm) with axial magnetization. As a result of this replacement, the experimental trifolium repens sample began to grow faster than the control, irrigated with ordinary water (Figure 6).

Thus, the author found that water magnetized in different ways affects plants differently. Water magnetized by the south pole of a single magnet slows plant growth. Water magnetized by the south poles of several magnets simultaneously accelerates plant growth. In order to verify this conclusion, the author conducted the Experiment 3.

Experiment 3: As the experimental organisms, triticum durum grains were taken.

In preparation for the experiment, triticum durum grains were soaked for 24 h in ordinary drinking water. Then, when the triticum durum was saturated with water, the grains were divided into four equal portions and laid out in plastic containers. Thus, four samples were formed:



Figure 6: On the left is ordinary water, on the right is magnetized water (May 20, 2019)

Sample 0 was irrigated with ordinary drinking water (control sample).

Sample 1 was irrigated with water magnetized by many small (D10 × 1 mm) disk-shaped neodymium magnets with axial magnetization.

Sample 2 was irrigated with water magnetized by one large (D20 × 10 mm) disk-shaped neodymium magnet with axial magnetization.

Sample 3 was irrigated with water magnetized by one large (D85 × d32 × 10 mm) ring ferrite magnet with axial magnetization.

In all cases, the water was magnetized only by the south poles of the magnets.

Two days later, based on a comparison of the growth rate of the Samples and the number of grains germinated in each of them, a rating of the Samples was compiled from the fastest growing to the slowest growing:

Sample 1 was the fastest growing - Sample 0 and Sample 2.

Sample 3 was the slowest growing and had the smallest number of germinated seeds.

The condition of the samples at the indicated moment is shown in Figure 7.



Figure 7: Triticum durum on ordinary and magnetized water (August 7, 2019)

Almost all the time of the experiment, the rating of the samples for the growth rate and the number of sprouts in each of them remained unchanged. There was a significant lag in the growth rate of the Samples 2 and 3, irrigated with water magnetized by solid magnets. In this case, the Sample 1, irrigated with water magnetized by many small magnets, grew faster than all other Samples and had the largest number of sprouts (Figure 8).



Figure 8: *Triticum durum* on ordinary and magnetized water (August 11, 2019)

By the end of the experiment, the Sample 0 overtook the Sample 1 in the growth rate, but the Sample 1 still had the largest number of sprouts from all samples. In this case, the Sample 1 was the first to show the signs of wilting of the sprouts (Figure 9).



Figure 9: *Triticum durum* on ordinary and magnetized water (August 16, 2019)

Throughout the experiment, the Sample 3 has the smallest number of sprouts. Also, the Sample 3 most of the time of the experiment showed the slowest growth.

According to the results of the experiment, it was unequivocally found that water magnetized by the south pole of a single magnet slows down the growth of plants. At the same time, water magnetized by the south poles of several magnets simultaneously contributes to the accelerated growth of plants, as well as the germination of more seeds. However, plants grown on such water may have a shorter lifespan.

It should be noted that the author tried the effect of magnetized water on herself. According to the subjective assessment of the author, water magnetized by the south pole of the ring ferrite magnet has a sedative and analgesic effect (eliminates muscle pain and pain caused by an attack of heartburn). At the same time, water magnetized by the south poles of several magnets contributes to a deterioration in well-being (a decrease in concentration and the return of pain during heartburn).

2.2. Water “saturated” with use of cavity structures and directly living organisms

Based on the similar effects on the water of the south pole of a magnet and a hollow pyramid (Zueva, 2020), the author made an assumption that water saturated with biological radiation through a hollow paper pyramid may have an effect on plants similar to the effect of magnetized water. In order to verify this assumption, the Experiment 4 was conducted.

Experiment 4: As experimental organisms, triticum durum grains were taken.

A day before the start of the experiment, triticum durum grains were soaked in ordinary drinking water. After swelling, the grains were divided into five equal parts and laid out in plastic containers. Thus, five Samples were obtained: four experimental and one control. Each experimental sample was irrigated with water saturated with biological radiation in one of the following ways:

Sample 0 – Ordinary drinking water.

Sample 1 – Water directly saturated with biological radiation of a human (the author of the experiment held a glass of water in her right hand for several minutes before each watering).

Sample 2 – Water saturated with radiation through a paper pyramid (a container of water was constantly inside the pyramid).

Sample 3 – Water saturated with radiation through a multi-cavity structure (Grebennikov, 1997) of plastic tubes (a glass of water was placed on vertically arranged plastic tubes).

Sample 4 – Water saturated with viola radiation through a biowaveguide.

Two days after the start of the experiment, the difference in the growth rate of the Samples became noticeable. Based on the observed difference, an approximate rating of the growth rate and the number of sprouts in the Samples from the fastest growing to the slowest growing was compiled. The Samples 1, 3, and 4 grew faster. The Samples 0 and 2 grew more slowly than the others. The slowest and having the smallest number of germinated seeds was the Sample 2. The appearance of the Samples at the indicated moment is shown in Figure 10.

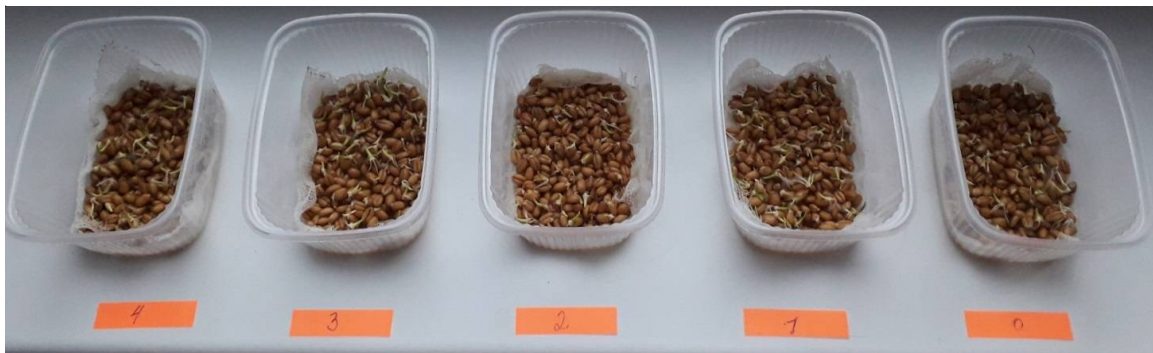


Figure 10: Triticum durum in ordinary and “saturated” water (August 18, 2019)

Over the next few days, the rating of the growth rate and the number of shoots in the samples was constantly changing. However, the Samples 1, 3 and 4 all the time showed the fastest and most dense growth, and the Sample 2 invariably remained in last place of the rating.

On the 10th day of the experiment, the Sample 0 surpassed the Sample 3 in the growth rate, but was still inferior to it in the number of sprouts. At the same time, the Sample 1 was the fastest growing. The Sample 4 was the next in the ranking. The Sample 2 showed the slowest growth and the smallest number of shoots (Figure 11).

Thus, during the Experiment 4, triticum durum samples irrigated with water saturated with biological radiation obtained directly from living organisms had the highest growth rate and density. The leader of the rating, the Sample 1, was irrigated with water saturated with biological radiation of a human (the author). The Sample 4 was irrigated with concentrated by means of a biowaveguide (Zueva, 2020) biological radiation of viola.



Figure 11: *Triticum durum* in ordinary and “saturated” water (August 24, 2019)

The slowest growth was observed in the Sample 2, irrigated with water, placed during the experiment inside the hollow paper pyramid. That is, it was found that the pyramidal shape of objects contributes to the concentration of biological radiation inside them, slowing down the growth and development of plants.



Figure 12: *Triticum durum* in ordinary and “saturated” water (August 27, 2019)

3. Results and discussion

3.1. *Biological radiation and deceleration of aging*

Based on the results of the Experiments 1-4, where it was shown that near the south pole of a solid magnet, as well as inside objects of a pyramidal shape, radiation is concentrated that helps to slow down the growth, development, and also withering (the Experiment 1) of plants, the author made the following assumption.

It is known that in highlands people often live longer than in lowlands. Perhaps this circumstance is facilitated by their constant presence near objects of a pyramidal shape—mountains. In addition, in places of a particularly large number of centenarians, there is probably an increased magnetic field, which is directly connected with a high concentration of radiation, that slows down the growth and development processes. Theoretically, this radiation is able to slow down the aging process, not only of plants, but also animals, as well as human beings.

To verify this assumption, the author turned to the media and found out that the largest concentration of centenarians in the world is known for the Bama Yao Autonomous County of Guangxi Zhuang Autonomous Region of the People’s Republic of China (hereinafter - Bama) ([Bama: Land of Longevity, 2013](#); and [Bama Longevity Village](#)).

After a thorough study of available information about this area, the following was found out ([Bama: Land of Longevity, 2013](#); and [Bama Longevity Village](#)):

1. The territory of Bama is surrounded by many mountains of a pyramidal shape, while these mountains abound in karst caves.
2. On the territory of Bama there is an increased geomagnetic field. In this case, the reason for the increased geomagnetic field on the territory of Bama is a fault zone located under Panyang River.
3. The bulk of the centenarians of Bama live on the banks of Panyang River, which is the main source of water for drinking and agricultural needs.
4. Vegetables and fruits grown in Bama contain a high concentration of nutrients.
5. The diet of centenarians of Bama is mainly vegetarian in nature, that is, it includes a large amount of plant food.
6. The water of Panyang River in Bama helps to eliminate gastritis, as well as inflammatory processes on the skin.

These data were compared with the results of the research conducted by the author:

1. According to the results of the Experiment 4, hollow pyramidal objects saturate the water placed inside them with biological radiation, which slows down the growth and development of plants.
2. As it was shown in the work ([Zueva, 2020](#)), as well as in the Experiment 3, water placed near a source of a magnetic field of a certain configuration is saturated with biological radiation that slows down the growth, development and wilting of plants.
3. According to the Experiment 1, water magnetized by the south pole of a single magnet not only slowed the growth of the viola and increased the life expectancy of its flowers by more than two times, but also increased the concentration of pigment in its tissues.
4. According to the author's personal experience, the water magnetized by the south pole of the ring ferrite magnet has a sedative and analgesic effect, in particular, it eliminates pain caused by an attack of heartburn.

Assuming that water saturated with biological radiation that slows down the growth and development of plants (as shown in the Experiments 3, 4) and also contributes to an increase in their life expectancy (as it was shown in the Experiment 1), has a similar effect on all living organisms, including people, the pattern of the phenomenon of longevity of Bama inhabitants becomes clear.

The fault zone under Panyang River, which is the reason for the increased geomagnetic field on the territory of Bama, saturates its water with radiation, that slows down the aging processes of living organisms and extend their life span. This "saturated water" also contributes to an increase in the concentration of nutrients and other substances in local vegetation, including those used in food, just as similar water contributed to an increase in the pigment concentration in viola tissues in the Experiment 1.

The inhabitants of Bama drink the water of Panyang River saturated with biological radiation, and also eat fruits and vegetables grown using this water. Both of these factors slow down the aging process of local residents and increase their life expectancy.

An additional source of radiation that increases the life expectancy in Bama can be karst formations in local mountains.

In addition to Bama, the author also considered several other regions of longevity, called the "Blue Zones" ([Buettner, 2008](#)), in particular: Okinawa island (Japan), the province of Ogliastra (Sardinia, Italy), Loma Linda city (California, USA), Nicoya Peninsula (Costa Rica); and discovered that all of them are in one way or another in zones of volcanic activity. It is also known that volcanic activity is directly related to the increased level of the geomagnetic field ([Magnetic Field Studies Over Volcanoes, 2016](#)) and, consequently, to the increased concentration of radiation that increases the life span.

In order to verify the assumption that radiation, that contributes to slow down in the growth and aging of living organisms, accumulates in places of volcanic activity, Experiment 5 was conducted.

Experiment 5: As experimental organisms, triticum durum grains were taken.

After preliminary soaking for 24 h in ordinary drinking water, triticum durum grains were equally divided into four Samples and laid out in plastic containers. The Sample 0 was irrigated with ordinary drinking water.

The Sample 1 was irrigated with water saturated with radiation of a piece of quartz from the shore of the Lower Multinsky Lake in the Ust-Koksinsky District of the Altai Republic of the Russian Federation. The Sample 2 was irrigated with water saturated with radiation of a piece of schist from the shore of the Second Lake on Krasnaya-Mountain in the Ust-Koksinsky District of the Altai Republic. The Sample 3 was irrigated with water saturated with radiation from a piece of schist from the banks of the Katun River in Tyungur village, Ust-Koksinsky District, the Altai Republic.

Lower Multinsky Lake belongs to the group of Multinsky Lakes located in the Ust-Koksinsky District of the Altai Republic of the Russian Federation. The lake is located at an altitude of 1,627 meters above sea level on the northern slope of the Katunsky range. The Katunsky range is composed of granite and metamorphic schists.

The Second Lake on Krasnaya-Mountain is located at an altitude of about 2,300 meters above sea level. Krasnaya-Mountain does not belong to any of the Altai mountain ranges and is an extinct volcano.

Tyungur village is located in the Ust-Koksinsky district of the Altai Republic of the Russian Federation on the left bank of the Katun River. The village is located at an altitude of 853 meters above sea level.

During the first day after the start of the experiment, the difference between the Samples was not observed, but over the next three days it became noticeable. Based on the difference in the growth rate of the Samples and the number of sprouted grains, a rating was compiled from the fastest growing to the slowest growing Sample:

Sample 1 - the fastest growing - Sample 0 and Sample 3.



Figure 13: Experiment 5 (August 28, 2019)

Sample 2 - the slowest growing.

In the following days of the experiment, the rating of the growth rate and the number of sprouts in the Samples did not change. The Sample 2, irrigated with water saturated with radiation of the piece of schist from Krasnaya-Mountain (extinct volcano), showed noticeably slower growth than other Samples (Figure 14).

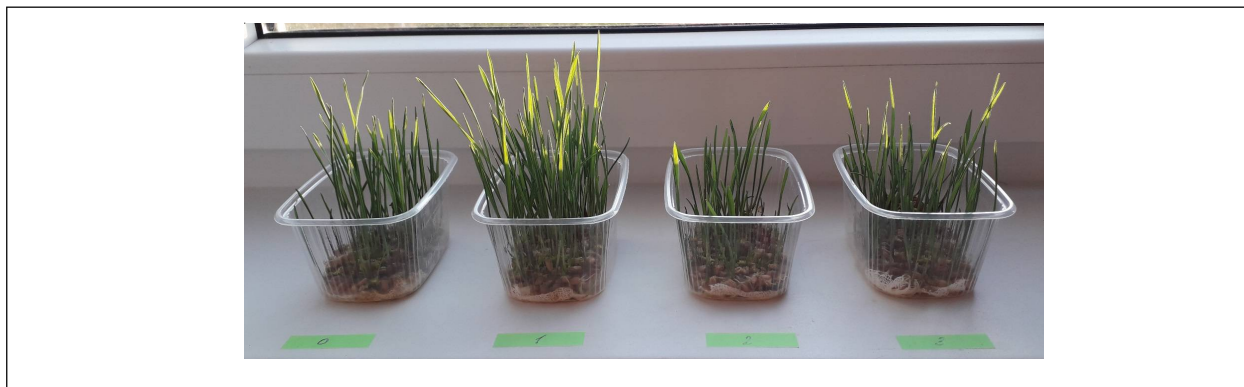


Figure 14: Experiment 5 (September 1, 2019)

The results of the Experiment 5 confirm the author's assumption about the presence of radiation, that contributes to slowing down the growth, development, and, probably, aging of living organisms in areas of volcanic activity.

It should be noted that the triticum durum sprouts in the Sample 2 from the Experiment 5 grew better and had a healthier appearance than in the Sample 2 from the Experiment 4 and the Samples 2 and 3 from the Experiment 3. Based on this, it can be concluded that the radiation slowing down the processes of growth and development, of natural origin, has a more beneficial effect on living organisms than similar radiation of synthetic origin.

4. Conclusion

Conclusions from the results of the experiments

First of all, it is necessary to note the similar nature of the effect on plants of water magnetized by the south pole of a solid magnet, and water saturated with biological radiation through a hollow paper pyramid, namely, the slowdown of growth and development.

It is also necessary to note the similar nature of the effect on plants of water magnetized by the south poles of several magnets, water saturated with biological radiation obtained directly from living organisms, as well as water saturated with biological radiation through a multi-cavity tube structure. This water contributed to better germination of grains and their accelerated growth.

At the same time, accelerated growth of triticum durum, irrigated with water, magnetized by the south poles of several magnets, as well as water saturated with biological radiation through many plastic tubes, was observed only at the initial stage of plant development. In a later period, the growth of these triticum durum samples slowed down and gradually inferior in rate to the samples irrigated with ordinary water. At the same time, triticum durum samples irrigated with water saturated with biological radiation obtained directly from living organisms (viola and human) not only maintained leadership in the ranking of growth rate and number of sprouts throughout the Experiment 4, but also showed significantly better growth than triticum durum samples irrigated with ordinary water.

An explanation of the difference in the effect of water saturated with biological radiation using a multi-cavity structure, or magnetized with several magnets, and water directly saturated with biological radiation of living organisms, may consist in the fact that in the first two cases, the water simply activated the internal vital forces of grains, compelling them to faster and better germinating. In the case of direct saturation of water with biological radiation of the viola or human, this water probably transmitted additional energy nutrition to germinating grains and triticum durum sprouts, that contributed to their constant accelerated growth.

In this regard, special attention should be paid to the results of the Experiment 5, namely, the Sample 1, irrigated with water saturated with radiation of quartz piece from the shores of Lower Multinsky Lake. Despite the fact that this radiation was not received directly from a living organism, it nonetheless provided constant accelerated growth of triticum durum. That is, the Sample 1 from the Experiment 5 developed similarly to the Samples 1 and 4 from the Experiment 4 and, therefore, received additional energy nutrition. This may indicate that in the area of the Katunsky range there is an increased level of biological radiation that transmits additional energetic nutrition to living organisms.

By analogy with radiation that contributes to the accelerated growth of plants at the initial stage of their development (that is, formed by many magnets or tubes), it can be assumed that radiation that contributes to their slow growth (that is, formed by a solid magnet or hollow paper pyramid) inhibits the consumption of internal forces and resources of plants, and therefore the processes of their growth, development and wilting.

Thus, it can be concluded that several types of biological radiation are present in the experiments described above: two types of "accelerating radiation" and one type of "moderating radiation". All of them, as it shown in the work (Zueva, 2020), increase the oxygen solubility factor in water, i.e., prevent the formation of air bubbles in water with increasing temperature. The similarity between these types of radiation also lies in the fact that all of them are constantly present in the atmosphere in a scattered state and can be collected by means of certain forms and structures.

At the same time, the radiation that contributes to the accelerated growth of plants is probably simply formed by several inconsistent flows of the same biological radiation, which contributes to their slow growth. So “accelerating radiation” in the experiments described above arose as a result of close co-location of several magnets or cavity structures. Biological radiation of living organisms, due to the complexity of their internal structure, probably also has a predominantly inconsistent character. However, judging by the results of the Experiment 4, it has a greater energy potential than the “accelerating radiation” collected from the atmosphere through several magnets and multi-cavity structures.

In this case, “moderating radiation” in the experiments described above was always observed either near the south pole of the single magnet, or inside the pyramid. Perhaps the coordinated orientation of magnetic domains inside a magnet, as well as correct geometric shape of a pyramid, contribute to the formation of a single consistent radiation flux.

Theoretical explanation of the nature of biological radiation

For a theoretical explanation of the nature of biological radiation, the author compared the results of the experiments described in present work, as well as in the work (Zueva, 2020), with available information about phenomena known in history that have properties similar to those of biological radiation.

First of all, it is necessary to list the properties of biological radiation established in the work (Zueva, 2020):

1. Biological radiation carries information about the structure of living organisms up to the genetic level, as well as about their physical condition (health, illness).
2. Biological radiation affects living organisms by transferring biological information from one organism to another.
3. Biological radiation, going beyond the boundaries of a living organism, quickly dissipates, but at the same time it remains in the atmosphere, and therefore it can be collected again.
4. Biological radiation can be accumulated (deposited) in any substance or object, for example, in water or in a cup, and then transferred to another object.
5. Biological radiation is directly related to the magnetic field of permanent magnets.
6. Biological radiation increases the oxygen solubility factor in water.

Thus, it was shown in the work (Zueva, 2020) that biological radiation has a material nature and can be fixed.

Next, it is necessary to list the properties of biological radiation, clarified in present work:

1. There are at least three types of biological radiation:
 - inhibiting the internal forces of living organisms and thereby slowing down the processes of their growth, development and aging;
 - activating the internal forces of living organisms and thereby accelerating the processes of their growth at the initial stage of development;
 - nourishing radiation - transmitting additional energetic nutrition to living organisms and thereby ensuring their constant accelerated growth and development.
2. Various configurations of magnetic fields and various geometric shapes contribute to the formation of different (consistent and inconsistent) flows of biological radiation.

It is known that pyramidal shaped objects are able to concentrate electromagnetic radiation, increasing the electric field strength in their internal cavities (Balezin *et al.*, 2018).

Also, a permanent magnet can be simplified as a set of coordinated microscopic electric currents. Moreover, a consideration of a permanent magnet in this way (by analogy with an electromagnet) makes it possible to understand why radiation that changes the oxygen solubility factor in water is present only near the south pole of magnets.

Thus, biological radiation is probably a kind of electric current that can propagate beyond a conductor, but quickly dissipates. As it was shown above, this electric current is present everywhere in the atmosphere. At the same time, it is concentrated in an increased volume near permanent magnets, pyramidal objects of artificial and natural origin (mountains), cavity structures and living organisms. In addition, this electric current,

interacting with various objects and substances, contributes to the accumulation of energy in them, that can be then transferred to other objects.

To summarize, the fact that biological radiation is an electric current is indicated by the following:

1. It is concentrated near objects with sharp edges (pyramids).
2. It's energy is stored in dielectrics (quartz, glass).
3. It is always present near the south pole of permanent magnets.

According to the author, biological radiation can be longitudinal electromagnetic waves, the existence of which was found by the doctor of physical and mathematical sciences Nikolaev Gennady Vasilievich (Nikolaev, 2003; Nikolaev and Protasevich, 1998; and Tomilin, 2009). Nikolaev G V also called longitudinal electromagnetic waves the main way of communication between the cells of a living organism.

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