

# "The Cosmic Philosophy"



**Konstantin Tsiolkovsky**

# The Animal of Space



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The article gives a broad view of the overall spread of life in the space, its diversity, points to worlds within worlds, to the endless periodicity and complexity of matter and phenomena, to the existence of infinitely remote epochs when the “ethereal” animals existed – not like terrestrial ones and difficult to imagine them, although perfect and conscious ones.

From a limited earthly point of view, the animal is made up of 29 known elements. Its main component is water; it can tolerate temperatures no higher than 100°C and no lower than 100-200, and then it does not live in this condition (insensitivity, or anabiosis), but only persists; most of them require a certain average temperature close to 20°C. The animal requires an atmosphere containing oxygen and water vapor. The sources of its activity, that is, its movement and thought, are other organisms or, in extreme cases, the sun (animal-plants, or zoophytes). It seems, an animal cannot live without atmospheric pressure and gravity. Its body should have a temperature above the freezing point and no more than 37-40°C. A mature animal has a certain height. Even the higher animals (human) are very imperfect. For example, life expectancy is short; the brain is small and poorly arranged, etc.



In essence, all this is only the result of adaptation to the conditions of life on Earth – mainly to life on the equator, and a sign of incomplete phylogenetic development (evolution). On other planets, under other conditions, the structure of the animal will be different. The Earth will also give the best over time. Let's analyze in order all the data about terrestrial organisms.

Why is an animal made up of 29 elements, why does it not include other elements, such as gold, platinum, etc., and if it does, then by chance, in negligible quantities, without playing any role? (And of these 29, 9 ones are probably not needed).

The first reason is that the animal feeds on plants, and plants just contain these substances. Why are plants made up of these substances? Plants are surrounded by atmosphere, water and water vapor; it puts its roots into the soil. Therefore, it should contain these substances. Namely: water gives the plant hydrogen and oxygen. The soil, dissolving in water, most of all carries to plants calcium, phosphorus, chlorine, sulfur, sodium, potassium, fluorine, magnesium, iron, silicon, manganese, aluminum, etc. The atmosphere gives oxygen, carbon and nitrogen. In negligible quantities, the soil and its water contain other elements, but their quantity is small, because these are rare substances or heavy and hidden in the bowels of the earth and therefore little accessible to plants ones. If other elements prevail on the Earth's surface and in the atmosphere, then the composition of animals and plants would be different.

There are more heavy elements on the surface of planets close to their suns, and therefore heavy elements should enter into the composition of organisms there. On the contrary, on planets far from their suns, lighter substances would enter the body, since there are more of them there.



Man extracted heavy metals from the bowels of the earth and made, for example, gold a part of his body (teeth, etc.). In general, the composition of animals on Earth may still change.

What is the conclusion? All substances are suitable for creating organisms under suitable conditions. One must think that on each planet, according to the substances of its surface, distance from the sun, the properties of the latter, the temperature of the planet and other conditions, the most diverse substances prevail in organisms.

An animal consists of solids and liquids. But not only water is liquid. On the contrary, on planets far from the sun, at low temperatures, water is a mineral at all, and the predominant liquid substances have a different composition, for example: liquid carbon dioxide, various oils, alcohols, carbohydrates, liquid gases, etc. They would have become part of the seas and organisms. Also, on planets close to the suns, our solid bodies would be liquid there and could become part of animals.

The atmosphere of other planets may also have a different composition. On cold planets, hydrogen would predominate, on close ones, water vapor or other liquids converted into gases due to heat.

From this we will draw a new conclusion: on both cold and hot planets the creatures are possible, beings composed of those seas, atmospheres and soils that exist on the planets.

Is it really necessary for the abundant development of life to have an ambient temperature hovering around 25°C? We have seen that neither high nor low temperatures deprive the



planet of oceans and atmospheres (only of a different composition), and therefore do not deprive of animals. The latter ones will be composed of liquids and gases suitable for the average temperature of this planet. This means that the most diverse temperatures of the planets do not prevent the rich development of life on them.

We see that even our organisms adapt to low temperatures. But, of course, these are the most imperfect creatures or an intelligent human knowing how to protect himself from the cold with an artificial environment that costs him a terrible strain of strength. But after all, the northern animals migrated from warm countries, their homeland is the equator, they were not adapted to the harsh climate. Only hundreds of thousands of years could do this, and for a few ones only. Therefore, we have not yet seen the lush blooming of life in winter and polar climate. However, the main reason for the scarcity of cold countries is the lack of solar energy.

The body temperature of the higher beings of the Earth is close to  $37^{\circ}\text{C}$ . Why is that? The birthplace of life is the equator. Life began in its waters (the reason is uniform heat and an abundance of solar energy). There, the average water temperature fluctuated around  $25^{\circ}\text{C}$ . This is the temperature of the first animals, the height of whose life, its vivid manifestations corresponded to this temperature. The animals took the temperature of the environment, endured the low temperature also, but felt good only at the average temperature of the environment.

Due to the weak life energy of the first creatures, their body temperature was only slightly higher than the ambient temperature.



But the warm-blooded ones appeared with their powerful manifestations of life. As a result of it (heat, combustion or chemical processes inside the animal), the temperature of their bodies has greatly increased in comparison with the average temperature of the environment. So, animal temperatures are always slightly higher than the average temperature of the planet. Since the temperature of the planets can be very diverse, so can the temperature of animals. Some are very hot; others are as cold as ice – from a human point of view. I'm not talking about those cases when the temperature of the environment is slightly higher than the temperature of the animal. In this case, the warm-blooded ones are threatened with death, since the brain (heated) stops its activity. But then the skin or lungs evaporate water, heat is absorbed from the body and the brain maintains a normal temperature. Its sharp fluctuation is fatal for any organism. So, on the Moon and the few planets always facing one side to the Sun, the temperature ranges from  $250^{\circ}$  below to  $250^{\circ}$  or more above zero.

How to live in such conditions? No matter how great is the temperature difference on the outside of the planet – this does not exclude life, since the inside of the planet retains a constant temperature. Animals, digging holes, will find salvation in them both from excessive heat and from extreme cold. However, the position of the lower beings is helpless here. The beginning of the development of life with these sharp temperature contrasts is difficult. Of course, there are limits to everything, and to the endurance of life among other issues. Places inconvenient for the life of lower beings can be taken over by conscious ones with the highest developed knowledge and technology.

Is the sun necessary for the existence of animals? The energy of the sun's rays is very widespread in the universe: in the Ethereal Island only there are up to a million billions of young and old suns, emitting their rays relentlessly. It is clear that most animals exist due



to solar energy. However, it can be done by the power of some other kind of energy. So, the suns extinguish temporarily, distant planets have almost no life. High temperature and chemical energy remain for a long time inside the celestial bodies, cold from the surface. And this makes it possible to preserve and continue the life of organisms for a long time. However, there is no special need to feed on these pitiful remnants of celestial energy, since there is as much of it as you want in the form of flaming suns. Theoretically, any kind of energy can support life, for example, the energy of motion and rotation of planets, gravity, heat, atomic energy and other types of it. In what way – we will not enter into this.

The animal's brain is very important. Can it increase with the same growth and how much? Of course, the structure of the brain is of great importance, but also the volume of the brain is a good quality, increasing memory and mental power. If we can carry heavy loads, then why can't we carry a more massive head? Mechanics shows that the volume of the brain can increase by two or three times without any damage. So far, however, we are encountering obstacles to this. On the one hand, the difficulties of childbirth increase, on the other – the development of the brain (in the first stage) leads to narrow religiosity; a person renounces himself in favor of his neighbors and leaves no offspring. In the second stage, the same development leads to pessimism, which kills brightest (religious) hopes, frightens and causes nervous disorders, illness and early death. Only in the third stage – with the highest development of knowledge and mind – a certain balance between egoism and altruism is obtained, when a person begins to realize the need to take care of himself and his offspring as well.

The first reason can be eliminated by premature birth and subsequent development of the embryo in a special artificial environment. Human should, as it were, return to the period of carrying eggs (birds, reptiles, etc.). The second and third reasons are eliminated by



precautions during the development of the first and second stages and by the immediate development of the third one, which gives rise to optimism, thanks to higher knowledge, insight into the depths of nature and true wisdom.

But the size of the brain can also increase along with a proportional increase in the whole animal. On the Earth, the increase in growth is hindered by gravity. Mechanics strictly proves that the brain mass of similar-shaped (homothetic) animals is proportional to the cube of the decrease in gravity to which the animals are subjected. So, on Mars and Mercury, where the gravity is two times less than on Earth, the brain volume could be 8 times larger than ours, of course, for the same external shape of animals. The growth of these creatures would be twice as large as on Earth. On the Moon, the height would be 16 times, and the brain mass would be 216 times more.

This conclusion of mechanics does not apply to aquatic creatures, because their gravity is destroyed by the counteracting force of water. But the industry is impossible in the water (you can't make a fire), there is little amount of oxygen, solar energy (light), and therefore life has not gone and cannot go further there.

When a person will settle in artificial conditional dwellings, in the ether, that is, when he will leave the Earth, having overcome its gravity, there, in the ether, between the planets, there will be no obstacles to the voluminous development of the brain, except for the complexity of the large brain and its feeding organs, which, of course, will put a limit to the development of brain mass.



While a human is on the Earth (part of humanity will definitely remain on the Earth), until then the brain volume can only increase 2-3 times. It will be ugly, but it is possible to get used to everything. Beauty is a conditional and subjective thing.

Mammalian lungs have an extremely imperfect structure. This organ must be transformed. Take the digestive tube as an example.

In lower beings it has an entrance, but it has no special exit. Digested food residues are released from the same hole they enter. So, locusts spew feces by mouth. This slows down the digestive process. Therefore, higher animals have acquired an outlet. By this step they have taken advantage over ones who do not have it. Primitive blood circulation was also wave-like (back and forth). A proper pump (heart) and a circular movement of blood take place only in the highest ones.

Similarly, the lungs of most mammals, taking air in and extracting oxygen from it, discharge respiratory products through the same opening. Due to this, the oxidation of blood is slow; the respiratory organ has a large volume and gives little oxygen to the animal. The respiratory chamber, as well as the digestive chamber, should have an outlet. The air must enter continuously into one hole and exit into another. We see that it is possible from the consideration of the anatomy of insects and birds, involuntarily releasing enormous energy during flight. Insects have through tubes (trachea) through which air flows. They lack an air pump only. However, it is impossible to guarantee that at least some insects do not have it. In birds, the pectoral muscles are penetrated by similar tubes, although the mechanism of movement of air in them is unclear: either the jets of air flow in one direction, or they oscillate back and forth, as in the lungs. It is only clear that the air flow



in these tubes is caused by the contraction of the pectoral muscles during flight (when exactly huge energy is needed).

There is no doubt that the evolution of higher animals, even on Earth, could have taken a different course and produced animals with a through-breathing organ. Such beings are quite possible on millions of billions of other planets. They may also appear on Earth, naturally or artificially, when human will begin to transform his body. Physiologists know how many disadvantages the bodies of even higher animals have. All of them must be eliminated by training, selection, cross-breeding, operations and other methods. We are talking only about a few imperfect ones – for example only. Even humans don't have even a single proper or perfect organ. Note that in many aquatic creatures, oxygen dissolved in water moves in the same direction with it. For example, in fish – from the throat to the gill slits.

Maybe because of this, fish get by with such a negligible amount of oxygen, which we see in the water.

Does a human need heaviness, and exactly the same as on Earth? In case of conformity or external similarity of organisms (with equal size or height), heaviness suppresses growth the more, the stronger it is. So, it also reduces the volume of the brain, and consequently, mental power. It turns out that it is harmful.

The idea, that the complete elimination of gravity does not interfere with life in the least, can be seen from the fact, for example, that aquatic animals, where gravity (or weight) is obliterated by the back pressure of the liquid, do not suffer at all. Rather, nowhere do the sizes of organisms reach such a large scale as in the oceans. A whale is helpless on land,



but frolics in the water like a kitten. An animal placed upside down does not die and does not suffer, although the gravity is reversed. Moreover, it does not suffer in a lying position, when the pressure of the blood column decreases several times. A human in this position can perform swallowing, digestive and other movements. Baths, destroying the gravity in patients, in many cases facilitate them, in addition to medicinal (therapeutic) action. Weakened gravity should reduce the mass of the organs of movement (legs, wings, etc.), if it does not increase the growth of the body. On planets with lesser gravity, the following phenomena should be observed:

- 1) the smaller the radius of the planet or its gravity, the greater the growth of the organism;
- 2) if this is not the case, then the organs of movement (legs, etc.) become very weak or thin;
- 3) if this is not the case, then the jumping of animals or the speed of their movement increases;
- 4) there may be a combination of all three cases, that is, a moderate increase in height, a moderate weakening of the leg or chest muscles, a moderate increase in jumping and other movements. There can be a wide variety of combinations of the three extreme cases.

On larger planets, with greater gravity, the opposite situation will happen.

But the following may be said: how can you do without gravity – the oceans will evaporate, the atmosphere will disperse and the planet will be left without the things making the life possible.

Let's take it in order. Is it possible to do without water and air, and to what extent are they necessary? A human easily adapts to heights where there is half as much air and oxygen. There are such mountain villages. Children born there tolerate the lack of oxygen perfectly



(but travelers are burdened). Healthy children tolerate a fourfold reduced amount of oxygen for some time. If the lungs are through, they will be satisfied with a smaller volume of life-giving gas. Fish, instead of air, as if breathe water soaked in it. This water flows in one direction (from the mouth to the gill slits), like the blood and food of higher animals. The water contains 60 times less oxygen than in the atmosphere, but this does not prevent fish from living. Moreover, aquatic creatures live well even when there is even less oxygen. Somebody may say: that's what fish life is for! But pure oxygen (without water and atmospheric nitrogen) with through lungs will dissolve in the blood very quickly and give it no less than our land animals receive it.

But how can we do without atmospheric pressure? Lack of air or other environment pressure causes bleeding from the nose, throat and other organs. This is understandable: the strength of blood vessels is partly supported by the external pressure of the atmosphere. When it lacks or weakens the weaker now vessels of the nose and throat are bursting from the pressure of blood. Man and higher animals are not adapted to the weak pressure of the environment. If children are born, live and grow up in such environment, then, due to the observed (Lamarck) ability of the organism to adapt to new conditions, their blood vessels become stronger, and animals will exist harmlessly in a rarefied environment.

The bones of the organs of movement are also associated with atmospheric pressure. If there is no air – there will be no such connection. But the bones will not disintegrate even without air pressure, because they are also connected by tendons and constant tension of the surrounding muscles. That this is so is evident from the experience of gymnastic exercises: a human hangs on his arms and legs, being subjected to gravity incomparably greater than the force of atmospheric pressure on a small area of the articular joints of the



bone. The latter still do not disintegrate. From this it can be seen that the tension of the muscles alone is enough to keep the bones in the joints.

In a rarefied environment, the evaporation of water in the sweat glands and lungs should increase. But some animals (dogs) do not evaporate water with their skin at all. Therefore, an organism that does not lose water through sweating is possible. There are the same plants also (some cacti). What does it mean? There may be beings who do not suffer at all from the elimination of external pressure. However, if the lungs are like that, then the animals will not be able to regulate their body temperature and will die. But if it is maintained constant, then this danger will no longer exist.

There are many more indications of the influence of the medium pressure. Thus, mammalian lungs expand solely by the force of atmospheric pressure. However, we hope for the possibility of adapting the lungs to the absence of pressure. Indeed, if the lungs are through and the air moves continuously through them, then they may lose their elasticity as unnecessary or grow to the chest. We can't sort everything out here.

We now see that animals can do without gravity and with a small amount of gases and their pressure.

Is gaseous oxygen or other gaseous food also necessary? Not at all. Oxygen can be ingested by animals as food, in the form of its unstable compounds in liquid or solid form. There are many such ones known in chemistry, and many more of them will be discovered by the chemistry of the future. It is possible that a special organ like a special stomach will be required, from where oxygen will gradually enter the blood. So, you get an organism with two stomachs without lungs. It does not lose water and does not suffer without an



atmosphere. Such organisms are possible on the Moon and other planets that do not have atmospheres or have them in a very rarefied state.

The composition of atmospheres can be very diverse for creatures with lungs. Oxygen alone does not provide energy: sodium burns in carbon dioxide and chlorine.

Chemistry can provide many such examples. Finally, we also have creatures on Earth that live in carbon dioxide and do not need oxygen (anaerobic). There is so much diversity, so much creativity on the million of billions of planets of our Ethereal Island alone, that something is possible that the most ingenious human mind cannot imagine now.

Do we even need food? Could there be creatures that do not take food, that is, not assimilating gases, water, plants, meat and salts? Plants can eat only minerals, though. But still, we can take these substances for the food of organisms. The atmosphere also takes part in this nutrition, giving carbon dioxide, oxygen, or nitrogen (mostly via bacteria).

There are also animals like plants. They can also feed on inorganic substances. These are animal-plants (zoophytes). They contain green grains (chlorophyll) in their bodies, through which and with the participation of sunlight they decompose carbon dioxide of the air into carbon and oxygen. Oxygen is released into the air, and carbon with other inorganic substances forms sugar, starch, fiber (carbohydrates), nitrogenous and other organic tissues that make up the body of the creature.

From here we only see that both plants and animals can exist with the help of inorganic food only in the presence of solar energy. Nevertheless, the atmosphere, water, and the



earth's soil take part here. Is life possible without the constant participation of these elements of the Earth, that is, without the participation of the environment?

Let's imagine a completely isolated special animal. No gases, liquids, or other substances penetrate into it. They also cannot leave it.

The animal is penetrated only by rays of light. Encountering chlorophyll, carbon dioxide dissolved in the blood and other decomposition products of animal tissues, they decompose them, combine them and as a result give: oxygen, starch and sugar, various nitrogenous and other nutrients.

Thus, our animal gets everything necessary for life. Food (meaning what is formed in the body by the action of sunlight) and oxygen are dissolved in the animal's tissue. But the latter decompose again into carbon dioxide and other decomposition products (urea, ammonia, etc.). Let all these waste products not be thrown out, but enter the blood and remain in the body. The sun's rays again relate to them, as to gaseous and liquid fertilizers in plants, that is, they convert them into oxygen and nutrients that replenish the loss of continuously working parts of the body: muscles, brain, etc. This cycle goes on forever until the animal itself is destroyed.

That such a creature is possible, we see from the following. Imagine a quartz (or glass) transparent ball pierced by the rays of the sun. There is little soil, water, gases, plants and animals in it. In a word, it is a similarity of a huge globe, only in a tiny form. Both in it and on some planet there is a certain isolated amount of matter. Both in one and in the other, the same well-known circulation of matter takes place. Our glass ball represents the semblance of a hypothetical being that dispenses with an unchanging amount of matter



and lives forever. If the animals in the ball die, then new ones are born in their place, feeding on plants. In general, the glass ball is immortal, as the Earth is immortal.

But the question is, how can such an animal arise whose mass remains constant? It lives, thinks, moves, let's even say that it dies. But how does it itself be born and give birth? One can imagine that in the first stage of its life it develops like terrestrial animals: it arises from an egg cell, the latter develops in a suitable nutrient medium (perhaps with the participation of solar energy), grows, breathes, reaches maximum growth, fertilizes or produces eggs, then gradually transforms (like a caterpillar into a pupa and butterfly), loses sweat glands, lungs, digestive organs, becomes covered with impenetrable skin, in a word, isolates itself from the environment and becomes that extraordinary creature that we have described. It lives only from the rays of the sun, does not change in mass, but continues to think and live as a mortal or immortal being.

The cradle of such creatures, of course, is a planet like Earth, that is, with an atmosphere and oceans of any gases and liquids. But such a formed being can already live in the void, in the ether, even without gravity, if only radiant energy were present. Fortunately, there is no shortage of it. Millions of billions of childless and family suns, young and old, relentlessly emit it for many trillions of years. When they go out or fade, they are replaced by new ones. Such beings cannot but use this abundant radiant energy. They surround all suns, even those without planets, and use energy to live and think. The energy of the stars must exist for something!

We are talking about creatures similar to terrestrial plants and animals. We do not go beyond the limits of known science, but our imagination has nevertheless given something



that is absent yet on Earth, but that is possible from the point of view of our narrow (so-called scientific) understanding of matter.

(In this way, I can point to an excellent article in French by L. L. Andreenko "Life on planets".)

We mean 80-90 elements, their transformation, protons, electrons and other working hypotheses. We came to the conclusion that organisms could adapt to a variety of living conditions on and off billions of planets. Their forms and functions, as expected, are much more diverse than on the Earth – in our plants and animals. The same is for the degree of perfection. But the latter is generally much higher than the highest one on the Earth. Human genius is nothing compared to her. It was done by a variety of conditions and abundant times, which had never been scarce.

Each planet unites, eliminates all imperfections, reaches its highest power and excellent social structure over time. The supreme council elects one person who governs his planet. This being is the most perfect on the whole planet. His qualities gradually spread to the entire population of the planet; nevertheless, they cannot compare with each other.

But the population of the planet is multiplying, and its excess finds a place only in the space surrounding the sun. This population is billions of times more abundant than the planetary one. It is also governed by an elected council and its President. The latter is more perfect than the chairman of the supreme council of one planet.

The nearest groups of suns, milky ways, ethereal islands, etc. also unite. Representatives of these social units ascend higher and higher in the degree of perfection. So, in addition



to the ordinary, rather perfect population of the universe, we find representatives of planets, solar systems, star clusters, milky ways, ethereal islands, etc. Their high qualities are hard to imagine. They represent the likeness of gods of various degrees.

You may ask what is the reason of uniting of the solar system or a group of suns? For example, let each solar system live as it knows. Why would it care about another solar system! But every sun and its planets are not permanent: they explode, fade away, are subject to various catastrophes. Before the onset of these events, it is necessary to look for a suitable and unoccupied place of residence for the population. We need to know everything about these solar systems. The chairman of their group coordinates common interests, gives the necessary information, directs into right place and provides assistance.

Is communication possible between neighboring suns? If we can already get some information about them now, then what can happen later, when during the living in the ether, the atmosphere will not prevent the almost limitless magnification of telescopes, when we are freed from the destructive force of gravity, etc.

However, light does not travel fast enough for stellar distances. It needs years to cross them. But maybe we will find another medium in the ether, lighter and more elastic than the ether itself (as we also find ether in the atmosphere). Its invisible fluctuations can reach neighboring suns not in years, but in days, even hours. So the conversations will be much more convenient than they are now.

All this is earthly, accessible to a simple scientific human mind. But there may be an even higher, less accessible point of view. Nevertheless, its reliability is justified not only by a



penetrating mind, but also by facts. However, we have to rise above the template working hypotheses – all these electrons, protons, hydrogens, etc.

In fact, what was the course of scientific development, that is, the development of knowledge? At first, countless bodies with various properties were found and taken for a fundamental and unbounded variety of matter. Then we reduced all this diversity to 90 elements. Finally, we came to the conclusion that all these 90 simple bodies are composed only of electrons and protons. The ether was thrown overboard. But after all, most physicists still recognize ether as a working hypothesis, as an extremely rarefied and elastic substance, whose particles are trillions of times smaller in mass than protons and billions of times smaller than electrons (see my “Kinetic Theory of Light”). What kind of jumps between the masses of particles are these! If the mass of the proton is taken as one, then the mass of the electron will be expressed as 1:2000, and the ether – 1:( $16 \times 10^{12}$ ) (the ratio of these numbers will be: 16 trillion, 8 billion and one).

This confusion is resolved if we abandon the narrow point of view of modern hypotheses.

Real matter is the result of the evolution of simpler matter, the elements of which we do not know. I want to say that once there was a lighter and more elastic matter, consisting of particles smaller than electrons. Maybe they were ether particles.

When was that? Just time is infinite, like space and matter. There is as much of it as you want. No number can express it. All known and imagined times represent a road travelled in comparison with it. Take a sufficient amount of it – and so we will come to a simpler matter.



This “simpler” one is a result of an even more “simpler” one. Once upon a time, it was also predominant in the universe. So we can continue without end and come to the conclusion about the infinite divisibility of matter due to the infinity of elapsed times.

Think what you like, but to consider a proton or hydrogen as the basis of the universe, to consider it as a real element, as indivisible thing is as strange as to consider the sun or the planet as an element.

Maybe someone, some giant, for whom the whole sky is only a small particle of matter, and individual suns are invisible just as atoms are to us, looking at this “sky” through his “microscope”, will finally notice the sun and exclaim joyfully: at last I have discovered particles in this “matter”, that is, suns. But how wrong he would be if he mistook the suns for indivisible atoms.

So we are mistaken, taking an electron, proton or even a particle of ether for an atom. Reason and the history of science tell us that our atom is as complex as a planet or the sun.

What is the reason of all this? What is the practical conclusion? I want to say that the infinities of the elapsed times reveal to us a number of worlds composed of more and more sparse, more and more elastic substances. (It is noticed that with a decrease in the mass of particles, their translational velocity increases, and their elasticity also at the same time. Therefore, with the complication of matter, elasticity decreases, with decomposition it increases.) I want to say that the evolution of our matter will continue. In the future, it will give worlds consisting of particles more and more complex, more and more massive. They will also be first taken by future generations of conscious beings as indivisible atoms. But they will be wrong, just as we are wrong.



So, what is the result? What's next? – The reader will say. The next is the fact that these epochs, which have gone into eternity, also created beings which achieved perfection, as beings from our matter achieve it. Each rarefied world gave "its own" solid, liquid and gaseous substances, which served for the formation of intelligent beings (from very delicate matter). All such epochs were endlessly behind and will be endlessly ahead. One of them is our epoch, with our intelligent beings similar to those on the Earth.

What is the result? Using our imagination, we see an infinite number of epochs in the past and the future and beings corresponding them. What are they, do they have a connection with each other, do they manifest themselves in something and can they manifest themselves, do they not disappear with the emergence of a new era?

Let's give an example. The animals and plants of the Earth have evolved. They had the only source – the simplest protoplasm. We can even say – an inorganic matter. It gave rise to protoplasm, which turned out to be a number of very diverse creatures. Some of them died out, but, in general, the development of the higher ones did not prevent the lower, more ancient, primeval ones from existing without much progress. We see at the earthly feast of life at the same time: bacteria, worms, insects, fish, amphibians, reptiles, birds, mammals and humans. Only the power of the latter threatens the destruction of hostile beings. But some may be necessary for him (bacteria and plants), others are conscious and useful, and it makes no sense for him to destroy them. They stay.

Maybe, in the same way the epochs, segments of terrifying times, have preserved not only the dense beings of our epoch, but also the lightest beings of past times. Many of them



could disappear, but not all of them: useful and perfect ones could remain, just as creatures useful to people will remain.

Can't we find them somehow? There are facts that we do not believe until we've fallen under their influence. They speak for the existence of some forces that recognize our thoughts, interfere in our affairs, etc. I can't say much about it, because I trust only myself and I can't vouch for what others have experienced. I myself have witnessed such phenomena only twice in my life: recently and 48 years ago.

What is it? Is it mysticism, spiritualism, occultism, theosophy, religion, etc.? Nothing of the sort. I do not go beyond the limits of higher science, free reason and material concepts. I still think that spiritualistic and similar phenomena are usually the result of hallucinations, illness, deception, conjuring, delusion, jugglery and other human weaknesses. But are those all of them? Are there any reliable facts between them that confirm the beingness of creatures of other epochs and their power?

In my opinion, the occultists' teaching about the composition of a human being from many entities – astral, mental, etc. – is anti-scientific. I am far from these things, which are the result of limited knowledge or a young hobby, immature impressions that we cannot knock out of our mind in any way, just as we cannot abandon other impressions that we perceived in childhood.

We used to preach the repeatability of phenomena or the periodicity of worlds, their repeated destruction and the same occurrence. It exists, but the periods are not exactly similar, but they as if go down somewhere, because they give more and more complex matter. This can be likened to a wavy road: we go up and down it, while we do not notice



that this road, in general, is inclined, that is, with the disappearance of each period, we stand lower than before. There is no end, of course, neither to periods (waves), nor to lowering (descent or complication and condensation of matter).

It would make no sense to to take flight to our imagination in this way if it were not required by the existence of phenomena to which I have been exposed personally, as well as some others (see my essay "The Will of the Universe"). A personal test forced me to pay attention to the statement of others who had witnessed the same phenomena. I used to think of them as the result of delusion, deception, credulity or jugglery. Almost 100% of them are of such kind, but not all.

However, by any stretch, they can also be explained by the presence of beings similar to us in material, only more perfect. However, theoretically, it is impossible to deny the beings of infinitely distant epochs, composed of more elementary corresponding matter.



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Konstantin Tsiolkovsky named the aggregate of ideas, hypotheses, theses, which formed the core of his philosophical works, "The Cosmic Philosophy". Its central element is a doctrine (worked out using scientific methods) regarding sense of life and its understanding in the process of implementing moral practice.

**We can figure out how important these researches were for humankind from Tsiolkovsky's own assertion that creation of his rocket science theory was only a complementary result, an addition to his philosophic works.**

The scientist wrote a great number of philosophical works, which are little-known to general reader because these works used to be suppressed for decades. These books are an attempt to break through the "plot of silence" over the philosophy created by the Russian space prophet, discoverer and solver of the problems, which beginning of a "space era" put before human civilization.

New way of thinking is impossible, without looking for sense of life in the unity of inhabited space.

Addressing his readers, K. Tsiolkovsky says:

*"I will endeavor to recover what got lost by humankind in multitude of millenniums, to find the philosopher's stone it let drop."*

...

*"Be attentive, strain every nerve to comprehend and understand the asserted."*

...

*"For your tension, for your attention you will be rewarded – I will not say hundredfold, it is too little, but infinitely. There are no words for expression of this goodness you will get for your effort. There is no measure for this goodness. This measure is infinity."*

**"The Living Universe"**

**K.Tsiolkovsky, 1923.**



Popular science publication

**Konstantin Eduardovich Tsiolkovsky**

(Russian: Константин Эдуардович Циолковский)

**“The Cosmic Philosophy”**

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