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Virology and theology:
«More Friends Than Foes»?
On the Karin Moelling's
«Viruses: More Friends Than Foes»

To my youngest son, Arseniy, the reason I wrote this review

It is now left to the reader to reach his own conclusion or to wait for more results of more experiments.

Do not try to remember all this, gentle reader. It is enough if you are surprised!

Karin Moelling [pp. 210, 144]

1. Introduction

1.1. Why I took up the pen. Three reasons

I am an Orthodox priest. My interest in virology arose recently and unexpectedly. My youngest son, a ninth grader, usually helps me by serving at the altar on Sundays. Arseniy is fond of natural sciences, and once he took leave of worship to participate in the biology Olympiad (some sort of team competitions), which was held at the Moscow State University. Returning home as a winner he first showed me his award received - Karin Moelling's book «Viruses: More Friends Than Foes» (Viruses: More Friends Than Foes, translated from English. M.: Alpina Publisher, 2018, 566 pages).

–Let's see what the young sexton has exchanged a Sunday Liturgy for, – I said cheerfully, picking up a book and randomly opening it in the middle. My

attention was drawn to the headline: «In the beginning was RNA». Arseniy was embarrassed by surprise.

– Dad, how did you manage to find such an uncharacteristic quote? The book is not theological, but scientific...

I did not object, but simply began to read aloud the upper paragraph: «Life started not with Adam and Eve, not in Paradise – I think – but down in the oceans, around volcanoes, where it was hot – more like hell than heaven. There is also another possibility being debated: ice! Life may have started in fluid channels inside ice» [p.194].

It became clear to both of us that it was impossible to call this narrative «not religious», but «purely scientific». The author deliberately draws a parallel with the biblical story of Creation. At the same time the position Frau Moelling expresses is undoubtedly not a Christian one.

Later in the same paragraph, it was stated that nucleotides came from somewhere “in the beginning” of evolution: «Did they arise by lightning and thunderstorms in a primordial soup at the bottom of the oceans around volcanoes or hydrothermal vents, the “Black Smokers”?» [p. 194].

I don't know where «lightning and thunderstorms» could have come from at the bottom of the ocean, but I associate the myth of the «primordial soup» (as I hope everyone does), certainly not with the Bible and the dogmatic teachings of the Church, but with the names of the agnostic Charles Darwin and atheist Alexander Oparin.

Obviously, Karin Moelling's book involves doctrinal topics and offers answers alternative to the Catechism. Our doubts were finally dispelled when in the last paragraph of the book the author posed the question: «And where is God?» And the following answer was given to this question: «Wherever we encounter the “unknown” we feel inclined to believe in a God. Miracles may be explained by science... We can always attribute the unknown to the activity of a Higher Power, a God Father if you wish. I cannot believe that, but those who can are better off than me» [p. 343].

Atheists love to rant about the «God of white spots» – that is, the «God», used by people of little faith to explain unknown phenomena. It is convenient to ridicule this made-up «duty god». He serves the role of «whipping boy» perfectly. His power is negligible and decreases with the growth of scientific knowledge. But he has nothing to do with the biblical God – the Creator and the Provider, the Living and Almighty.

I, as an Orthodox priest, clearly saw the spiritual danger of the book. My child received the book which, along with an overview of modern scientific achievements, claims that Adam and Eve were not created by God, that the Biblical Revelation does not correspond to objective scientific knowledge, that the Christian faith is suitable to satisfy the needs of only poorly educated and not too mentally developed people. After reading such a treatise, a keen young man can easily lose faith, damage his soul, and become an atheist.

I clearly saw my duty – to prevent, if possible, a spiritual crisis and try to maintain piety in my family. In order to do this, I asked my son to let me read the book first.

This was my first reason to leave all other affairs and to take up a pen.

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The second reason was given by Frau Moelling herself.

I did not dare to refuse the woman (the author), who urgently asked me: you should write to me! As a matter of fact, while reading the book, I (the reader) unexpectedly came across a paragraph on page 184 in bold italics and consisting of two sentences. The first sentence was as follows:

«Any reader who has got as far as this sentence should write to me and let me know if he has found a mistake, if he thinks anything needs to be changed or corrected: he will then...» [p. 184]

So, Karin Moelling is waiting for my answer. Then maybe (*For with God nothing will be impossible!* – see Luke 1, 37), my review of the book will bring spiritual benefit not only to readers of her book, but to the author as well...

Moreover I sincerely believe that the text would benefit from several corrections and adjustments, as well as the correction of certain logical contradictions and errors.

* * *

Finally, here is my third reason.

Another phrase on page 184 was as follows:

«he will then get a free copy of the book with my dedication».

I simply can't reject such a tempting offer – to get a free copy (not for my son, but for myself), and especially with the author's dedication!

So, my reflections on the content of the book became a real critical essay.

1.2. About the author and her good jokes

Dr. Karin Moelling is one of the world's most prominent modern specialists in infectious diseases and has long led the Institute of Medical Virology at the University of Zurich. She is a winner of numerous awards and the author of hundreds of publications in leading scientific journals.

The book was written, without a doubt, by a professional, a deep expert in her field and an experienced virologist. The monograph presents a huge amount of rich information with references to the opinions of many famous researchers. The content covers the entire history of microorganisms' discoveries and studies as well as the current state of affairs on the forefront of this developing scientific field.

Surprisingly, the abundance of highly specialized terms and abbreviations almost never interferes with understanding of the text. The book was written

skillfully, talentedly and makes an interesting reading. The author enlightens chapters of the book with funny stories and humorous recollections.

Several *good* jokes should be given as an example of the author's style.

It is impossible to read the following passage without a smile: «The iron meteorite once hit the Campo del Cielo in the north of Venezuela... and that it is really 500 million years old; however, I cannot prove that» [p. 8].

«Now we will find out who is smarter: people or bananas. Amount of genes: in humans 20,000 to 22,000 and bananas have 32,000 – what, more than humans? Yes, surprisingly! Yet, bananas are not smarter than we are» [p. 22].

That is comforting.

Virus and man,—according to Karin Moelling,— are both very capable creatures, and this is not a coincidence: «They are our ancestors!» [p. 22].

We are proud of our glorious ancestors and their outstanding talents.

Do not try to wash off the viruses with soap and water: «We cannot remove them (viruses) with soap and water – and we should not try to, because we belong together. Too many showers may do harm!» [p. 123]

I recall a case where after one gypsy's two-year-old child got a bath, the mother didn't recognize her son and claimed that her kid was swapped.

Professor Moelling returns to the topic of hygiene repeatedly: «We may ask whether they should be removed by a daily shower – I would say no! They are useful (microorganisms - *Archpriest K. B.*) and protect us from foreign ones» [p. 6].

In the play «The Dragon» by Eugene Schwartz this idea is put into in the archivist Charlemagne's mouth, who assures the wandering knight of Lancelot:

«While he is here, no other dragon dares to touch us... I assure you, the only way to get rid of dragons is to have your own».

Another joke of the same kind: «Never ever should we shake hands when we meet somebody. That should be banned, at least in clinical settings, when one is greeting doctors or medical personnel» [p. 257].

Although this one seems to be written seriously...

The monograph allows us to trace the origins of the topic «virology and theology». Frau Moelling recalls the beginning of her scientific career when she was a graduate student: «I rented a room at the St. Joseph's Home in Zurich (with a Bible on my bedside table)» [p.59].

To my taste, this joke is one of the most successful in the book, so I attributed it to the category of good ones, although in its spirit it is more likely to be associated with bad jokes – aggressive towards God and Church.

It is both hard to keep from smiling and not to get envious. When I, the author of these lines, was a Soviet student, it was impossible to get the Bible even in the institute's library, and the only «spiritual» literature you could find on the bedside table in the headboard of a graduate bed was «Manifesto of the Communist Party» by Karl Marx or the materials of the next Congress of the CPSU. The irony is that I became a priest, and Frau Moelling – an atheist.

1.3. Spiritual views of the author and her *bad* jokes

In general, my review is conceived as critical (who cares about the praises of a layman?). Therefore, I will immediately state my main spiritual complaint about the book in question: it is written from an anti-Christian, anti-biblical position. And what is most disappointing, is that this position is completely unjustified and unreasonable. Hopefully, I'll be able to prove it.

Frau Moelling, like most of her colleagues (including doctors of science, academics, and even Nobel laureates), takes a strictly materialistic point of view. As she writes in the book, during a dinner in honor of the Charles Darwin's

bicentenary jubilee in 2009, the Berlin Institute for Advanced Study talked about the origin of life on Earth. Among the guest were representatives of different scientific fields, and all of them expressed a unanimous opinion about the origin of man: «Certainly not Adam and Eve, they said – disdaining creationism» [p. 2].

The belief in existence of evolutions is in fact the main serious reason for rejecting Biblical Revelation by many contemporary people.

Karin Moelling is convinced that «Life on Earth began about 3.8 billion years ago. That was about 10 billion years later than the Big Bang» [p.9].

Professor Moelling does not just study her favorite viruses. She writes about viruses as engines of evolution (or, more precisely, as “drivers of evolution”), which have been «participating during the early development of life, helping to build up all genomes» [p.145]. In any case, according to the author, viruses stood «at the origin of life – or at least their presence from the very beginning» [p. 1]. Thus, from the first pages, the author declares the theme of her book not only as a medical or biological one, but to a large extent as a metaphysical one.

This fact does not in any way reduce the scientific value of the described discoveries and research results. But at the same time, it deprives the book of objectivity in the conclusions that the reader hopes to meet in a serious treatise. The interpretation of the facts presented is one-sided, exclusively evolutionist. But the main thing is that almost all conclusions do not follow from facts, but from the author’s atheistic worldview. Karin Moelling does not seem to even notice this issue.

The one-sided position affects not only the content, but also the style of the book. We gave examples of the good jokes above. Let’s not forget the bad jokes either, those that involve playful attacks on the Holy Scriptures. As a minister of God's altar, I think I have the right to draw attention to this.

Describing the mechanism of molecular splicing, Karin Moelling writes: «And now I can let another cat out of the bag: humans have the highest numbers of such removable portions per gene. That makes us more complicated than any other

living animal. In this lies our uniqueness; perhaps we are after all the “**crowning achievement of creation**”» [p.21].

I'll now let another cat get out of the same bag: it's more appropriate to understand «creation» as the action of the Creator (see Genesis 1, 27). And Frau Moelling here does not mean a Divine act, but the result of a more or less «successful» evolutionary process, which excludes any possibility of creation.

The author quotes one of his colleagues who called people «living incubators» [p. 126] for viruses. According to Karin Moelling, «that does not really sound as if we were divinely created beings» [p. 126].

That's a bad joke.

As an HIV specialist, Karin Moelling notes regarding the difficulty of fighting AIDS in Africa that male circumcision can «reduce the infection rates by about twofold» [p.41] For some reason, she adds: «It is still performed as in Biblical times» [p. 41].

We have to express certain confusion by these unexpected Biblical associations. Neither the forefather Abraham, who first entered with God into the covenant of circumcision (Gen. 17, 24), nor the prophet Moses, who testified the power of this covenant in the Pentateuch (see, for example, Exodus 4, 25), nor Joshua, leader of the Jewish people, who circumcised all the Israelites after they entered the promised land (Nav. 3, 5) – none of the ancients associated this sacred rite with sanitary and hygienic procedures. This is probably shouldn't be done by our contemporaries as well (both theologians and infectious disease specialists).

And here is an unsuccessful attempt to interpret the Revelation of John the Theologian: «Red tides are mentioned in the Bible as a sign of the Apocalypse – could that have been algal bloom instead of blood? Not impossible!» [p. 136].

It is impossible. Undoubtedly, the text of the Apocalypse does not allow such frivolous interpretations: the Second Angel sounded ... and the third part of

the sea became blood, and the third part of the animated creatures living in the sea died, and the third part of the ships died (Apoc. 8, 8-9).

Another biting remark: «Galileo Galilei speculated in his famous book Dialogues, which he wrote under house arrest in 1638, about» [p. 328].

The sarcastic anti-clerical comment about repressions suffered by the great scholar from the hierarchs of the Catholic Church is out of tune with the rest of the page. When reprinting the book, I would advise to exclude the words about the «house arrest» from the text.

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All humorous remarks like the ones given above are of little substance by themselves and, of course, are not worth discussing. However, they create a certain background to the story. And this background makes it difficult to engage alternative explanations to the scientific facts cited in the book. Frau Moelling is willing to skip the theological debate: «If this discussion about the origin of life is not quite your cup of tea, then jump to the salad section – you will only miss some details» [p.195]

Unfortunately, I am not prepared to skip this issue.

Certainly, for me, as for an Orthodox Christian, the topic of salad is not irrelevant, since I try to observe all the fasts prescribed by the church rules, as well as weekly fasting days – Wednesday and Friday. However, I am much more concerned with the issue of life's origin rather than reflections on vegetables and herbs. It is just my cup of tea. The dogma of God as the Creator of Heaven and earth can't but be of interest to any Christian who accepts the Nicene Creed. Thus, Karin Moeling has found a reader in me who especially interested in the topic of the origin of life – it is good that the author devotes many pages to this issue.

Karin Moelling's position is essentially as follows: she interprets the facts based on the assumption that there is no God, the Creator.

Our point of view is different: we acknowledge the facts and at the same time maintain faith in God, the Creator. Our position can be viewed not as a rejection, but as an addition to the conclusions of Professor Moelling. We are ready to offer an alternative explanation for each phenomenon she describes. In other words, we are not adding new counterarguments, but we believe that all the research results presented in the book are quite logical and consistent with the Christian picture of the world.

And from this it follows that anti-biblical attacks and other aggressive statements against God are at least inappropriate in such a serious scientific book (especially if it is intended for a wide circle of readers).

2. On the logical inconsistency of the evolutionary concept of viruses

2.1. «Experimental confirmation» of evolution

Karin Moelling describes giant viruses («mimiviruses»), which often have external outgrowths, «crowns» or hair-like receptors. Thanks to the latter, when approaching a host's cell from the outside these viruses, «irritate» it. The author suggests: «Complex receptors do not seem to have existed in this early world» [p. 141].

As Dr. Moelling assures us, this hypothesis has been tested empirically. Mimiviruses have become that unique object on which researchers have been able to experimentally observe the ongoing «evolutionary changes».

But what kind of «changes» were these?

Karin Moelling describes this pseudo-evolution in detail: «In the laboratory, an experiment was performed in which giant viruses were transferred from one amoeba generation to the next, in all 150 times. After these passages the giant viruses had changed significantly – they **had lost some genes**. Among these was the loss of their “**hair**”, which was apparently not essential in this setting, by

reductive evolution. Loss of genes in the culture dish was **striking** with the giant viruses» [p. 142].

So, the observed «evolution» consisted only of viruses losing «some of the genes» and «hairs»! In fact, it was «evolution with the opposite sign», which is more correctly called **degradation**, that is, the loss of a number of traits (properties, genes, diversity in functions and complexity of the structure).

No one recorded evolution in form of growing complexity of the structure. But we see degradation everywhere in the micro- and macrocosm.

The disappearance of the wings of flying ants (an old example which goes back to Darwin himself), as well as the weakening of vision in moles or cave fish at the macro level are quite comparable with the viruses' loss of hairs and genes in a laboratory cup. There is nothing «striking» about this. The opposite would be striking – the appearance of previously absent traits, such as useful hairs or the emergence of new genes. But no one has ever observed this.

In general, the concept of «reductive evolution» is a devilishly brilliant invention. It promotes self-deception allowing everyone to talk convincingly about the imaginary existence of an evolutionary process even when in reality nothing like this happens, but the opposite process is observed – degeneration.

We are ready to address evolutionary biological change (in the positive sense of the word) as qualitative complication of the living organism structure. Let us leave examples of the opposite sign (without denying their presence in nature) for a more detailed study to narrowly focused specialists. Our position is justified by the following fundamental consideration: no matter how «progressive» value some biologists would attach to the phenomenon of degradation, the formation of most new species cannot be explained only by a reduction in the loss of useful traits.

Unfortunately Karin Moelling's book won't let an unbiased reader to find out whether mimiviruses really evolved in the past, or whether they were created initially with their complex receptors – like insects with antennae and snails with horns.

It is sad to admit this, but «observing evolution» has been reduced to the dull fixation of the loss of «some genes» and «hairs»... The most «striking» in the above reasoning, in our opinion, is that the author-evolutionist, does not even notice this. On the contrary, Professor Moelling presents this study as an outstanding discovery and claims with significant pathos: «Evolution in reaction vessels has become a favorite experiment in the laboratory, although it requires lots of patience» [p. 142].

2.2. About some contradictions of the evolutionary hypothesis

Researchers often make mutually exclusive statements about the course of evolution. We are not talking about random errors in observations or calculations. We are talking about the ambiguity of perception of generally recognized objective facts.

This duality of interpretation clearly confirms that all statements of scientists regarding evolution are based not on facts, but on their interpretation.

Karin Moelling writes: «One may think of viruses as designers or precursors of protein synthesis machineries» [p. 210]. And right after she remarks: «One can also turn the argument around and suggest that viruses have “stolen” the tRNAs and amino acids from the cell» [p. 210].

So, you can «think», or you can «turn the argument around». There are two opposing, mutually exclusive versions, both fundamentally unprovable, since we are talking about a historical event that occurred in the distant past. Manipulation of opinions is made with the ease of a circus juggler: «All textbooks of virology consider viruses as thieves of cellular components. I think it is **the other way round!**» [p. 210].

Poor reader must have his head spinning due to such a confusion of opinions...

There are many such gems in the book by Karin Moelling.

The author gives an opinion of Nobel Prize laureate Francis Crick, who discovered the spiral structure of DNA: «Crick formulated the “central dogma of molecular biology”: from “DNA to RNA to protein” describing the flow of genetic information inside the cell» [p. 20].

It would seem that everything is simple and clear. One cannot argue with the «central dogma»! But right there, Frau Moelling asserts: «RNA came earlier in evolution, before DNA, so **the reverse of the dogma is also true**: RNA can turn into DNA. This is what we have learnt from the viruses» [p.20].

Is it humor or schizophrenia? How should we understand such an expression: the reverse of the dogma is also true" [p. 20]? After all, a purely scientific question is being solved without any admixture of theology, philosophy or ideology. And since we are talking about fundamentally unobservable processes that stood at the origins of life, we are forced to conclude that respected scientists simply do not have the criterion of truth (and, therefore, involvement in the truth). Two atheist evolutionists have proposed two opposing “dogmas”, taken solely on faith.

It is not necessary to understand the meaning of “difficult” terms to understand the following example: «Tom Cech also explained to me that he thinks the RT is older than the telomerase: RTs are all over the place and telomerases are more specialized and came later during evolution. Or the other way round?» [p. 68].

Here, Professor Moelling presented the point of view of another Nobel laureate, an authoritative scientist she personally respects. At the same time, with her last question («Or the other way round?»), she completely undermined both him and her own reasoning based on the evolutionary hypothesis.

It is logically incorrect to conclude what’s «older» and what «came later» based solely on observations of the study objects’ current spreading. From the fact that there used to be a lot of dinosaurs, and now almost all of them have died out, it is impossible to draw an objective conclusion whether they are «older» or «came

later» of compared to ubiquitous fish or birds. Let us draw our attention to the fact that Karin Moelling does not correct her question, but continues the logical inconsistency of Tom Cech's arguments.

The correct conclusion should be this: RT may be older than telomerase, it may be younger than it, or they could both appear simultaneously and independently. This does not affect the hypothesis of evolution (does not refute, but does not confirm either).

But this is not the main thing.

* * *

The above examples reveal the hidden failure of the evolutionist position. We have the right to assert that neither Frau Moelling herself, nor both of her opponents – the Nobel laureates Mr. Crick and Mr. Cech – express strictly objective opinion based on reliable scientific data. They also complement facts (each in their own way) with certain interpretations limited only by the extent of their wit and imagination.

After this a somewhat shocking but indisputable conclusion, no one will stop us from offering another alternative explanation of the facts discussed by venerable scholars. Our position will be conciliatory. We will resolve all conflicts that arose in the camp of atheists by returning to the good old hypothesis of the existence of the Intelligent Creator. At first, there was no DNA or RNA. At first it was not RT and not telomerase. In the beginning was God. And He, by His omnipotence, created both DNA with RNA and RT with telomerase. He created everything visible and invisible.

Our concept is free from the inevitable contradictions that are observed in the camp of evolutionists.

2.3. Conclusions not arising from facts

Professor Karin Moelling writes about one of her experiments: «I never thought of evolution while we were performing these experiments – not at all» [p. 212]

We would like to pay particular attention to this honest acknowledgment. Everything valuable in the Karin Moelling's book (and this is a huge material collected by many researchers) is the result of such impartial observations and experiments with no atheistic propaganda attached. But when, after a job well done, scientists try to reflect on the meaning of the data they received, they sometimes lose solid ground, begin to think «about evolution» and make very bold, but completely unreasonable statements.

For example: «RNA belongs to the **origin** of life, to the **transition** from chemistry to biology» [p. 204].

One cannot comment on the content of this phrase whether it is true or false. No one can know for sure whether life really originated from the RNA, and whether there was a declared «transition» from chemical to biological processes.

Avoiding evolutionist ideology, I would express this idea in a more restrained way: RNA is one of the macromolecules, which, in terms of the complexity of its structure and functioning, is located above chemical compounds and below other manifestations of life known to us. Neither «where» RNA came from, nor «what» it evolved correctly to cannot be confirmed – and same, in fact, goes for all other known types of macro- and microorganisms.

Nevertheless, the author, guided by her consistent materialistic logic, asserts the origin of proteins (DNA) from viruses (RNA): «Surprisingly, a relationship between ribozymes and proteins can be shown even today with some proteins, which carry a little RNA tail, **as if** it had been forgotten there! **Is it** a leftover from evolutionarily distant times? The first protein synthesis started the other way round, with RNA and some amino acids attached to it (**I think**). This later resulted in proteins “only”. But perhaps **somewhere on the way** there was this strange protein with a little RNA fragment attached to it. One of these protein-RNA chimaeras is vitamin B12, and another is acetyl-CoA». [p. 208]

Keywords in this passage are: «as if», «is it?», «I think», «perhaps», «somewhere on the way». Without these reservations, the text could be categorically objected. And with them, this quote looks like a «thoroughly acceptable» version. Only, of course, it is not a scientific conclusion, but rather a game of mind.

Some of the viruses most primitive in structure are called «viroids». Karin Moelling elegantly and unassumingly calls them «witnesses» of the origin of life. She believes that so much she almost makes the reader succumb to the charm of her imagination: «Thus viroids **must have existed** before the code developed... Viroids are present mainly in plants and **seem to me** as witnesses and indicators of the beginning of life. They belong to the **most ancient** representatives and relics of the early RNA world – even though they are not much appreciated as such today. They **must be** older than the genetic code». [p. 202]

In this passage, the keywords are: «must have existed», «seem to me», «They must be older». As for the enchanting phrase «the most ancient» – it is *not a completely accountable* statement. Yet it is «conceptual». Such helpless argumentation is generally characteristic for those chapters of Karin Moelling's book in which she describes her view of the origin of life.

On the next page, the author expresses herself more carefully: «By the way: I **include** viroids in the virus family. If so, then I would have to conclude: “Viruses are our **oldest** ancestors” – because viroids are the most ancient viruses, about which I published, albeit followed by a **modest question mark!**» [pp. 203 – 204].

The reader immediately understands that this is not about objectively established facts, but about the private opinion of one of the evolutionary experts: «I include». You shall have the right. However, I am not a microbiologist and I will not argue with the competent judgment of Karin Moelling, who believes that viroids should be classified as viruses. Let's assume that the author has convinced me: viroids are viruses. Amen.

But all of her subsequent «conclusions» are logically unsound.

Firstly, it's not obvious to me that viroids are the «oldest» viruses. Maybe this is not the case. Or maybe all viruses are of the same age. Which mushroom is more «ancient» around the forest: butter mushroom or saffron milk cap? This question is of the same series, and the answer is far from being simple...

Secondly, in the mouths of evolutionists the concept of relative «antiquity» means not only chronology, but, above all, genetic kinship. But it is not proved in the book of Karin Moelling, to put it mildly. It's not at all obvious to me that viroids are «our ancestors». It is completely unclear how all the considerations set forth by the author in relation to viroid viruses are related to us, the descendants of Adam and Eve.

The «modest question mark» at the end of such statements is a true adornment of conscientious scientific research. Christ the Savior also calls us to such humble wisdom: *learn from Me, for I am gentle and lowly in heart* (Matthew 11, 29).

3. Are viruses the structural basis of all living things?

3.1. Evolutionary Opinion: Everything comes from viruses, and we come from viruses

Professor Karin Moelling notes: «It came as a shock to the scientific community worldwide when **it was discovered** that our human genome is composed of almost 50% of retroviruses or virus-like elements... This has been one of the most spectacular scientific results of our millennium so far» [p. 159].

This «discovery», if you really consider it a proven fact, is really impressive and amazing. Just think – it turned out that a man consists of the viruses by half! This should be understood in such a way that «viral and bacterial sequences have even entered our genomes» [p. 7]

It's not about those numerous viruses that live under our nails, between our teeth or in our intestines: «Healthy humans comprise 10^{13} cells which are authentically human, our “self”, and in addition we host about 10^{14} bacteria and, in addition, at least ten to a hundred times more viruses» [p. 7]

We are talking about those viruses that are an integral part of the human genome: «Most genetic information in our genome is not uniquely “human” but has arisen by horizontal gene transfer (HGT), from all the many other living organisms around us. About 10–20% of our genome is identical with that of bacteria, and almost 50% with that of retroviruses or retroviruslike elements; 5% results from fungi; the contribution of archaea, plants or other viruses cannot be quantified yet. Other genes have not been correlated with known functions, they are simply unknown – many of the non-coding genes are currently at the focus of intensive research» [p. 170]

So, we've managed to decompose the human genome into its constituent parts, which are defined as «ancient» viruses (or «retroviruses»), that supposedly penetrated our bodies in past eras. We are even informed of the exact dates – the time that viruses entered our genome: «Old viruses become domesticated and prefer to stay at “home”! Scientists call them “fossils” and our genome a “graveyard” of former viral infections. The graves are at least 35 million, and some probably up to 200 million, years old. Others are as “young” as one million years old» [p. 167].

Not only humans, but all other living things, as Karin Moelling claims, are largely composed of viruses that have invaded their cells. This discovery is «true» for “every eukaryotic organism: mammals, plants, insects, yeast with their spores, etc.” [p. 159]. The genetic material of viruses “also exist in bacteria: up to 20% of bacterial genomes consist of DNA prophages» [p. 160]

While reading the book, we, without even noticing affiliate ourselves with the scientific and philosophical concept, which boils down to a purely materialistic explanation of the origin of all living things. The following question does not look

strange in this concept, for example: «Other organisms may even harbor viral sequences that constitute up to 85% of their genes. Where is the limit? 100% –?» [p. 5]

The picture is quite clear and rounded: everything living – from bacteria to intelligent humans – consists of viruses.

It should be recognized that this topic is beyond the competence of scientific research, but should, not least, be considered in the philosophical and worldview aspect. In the Bible, King David posed a question in the face of the Supreme Lord: *What is man that You are mindful of him, And the son of man that You visit him?* (Psalm 8, 5)?

There is no appeal to God in Karin Moelling's concept, but all species, including Homo sapiens, are supposed to be «naturally born».

The introduction of viruses into the human, animal and plant genome is considered by her as a positive, «progressive» factor, and even as the main mechanism of evolution: «A virus infection is a great gain and innovative push for a genome. Many new genes are inserted in a single shot. That is rewarding for a genome. Viruses are the most versatile inventors. They are the motors of evolution. The reader should note the direction in which this is taking use: Viruses and microorganisms made us!» [p. 171]

So, according to the described materialistic scenario, we were created not by God, but by «**viruses and microorganisms**».

3.2. There is an alternative opinion!

It is time, finally, to move from the presentation of this scientific concept to its evaluation. What in the above quotations is an undeniable undoubted truth, and what allows a different interpretation?

I am inclined to trust those research results that have identified virus-like elements or «retroviruses» in the human genome (and other representatives of the flora and fauna). But I am not at all sure that the evolutionist interpretation of this data is objective, the correct and, in general, reliable.

Who will guarantee that the «retrovirus» found in the genome has invaded it from the outside, and was not there originally? What if the scientists regard «retroviruses» as «foreign bodies» in our genome only by mistake? Maybe they should recognize them not only as the result of ancient mutations and repeated infectious infections of the body, but the realization of the Creator's original plan, according to which the Adam (and Eve) gene was **created just like that** and not another?

An additional alternative consideration should be added here. It is possible that what modern scholars tend to identify as «viruses», was formed in the human genome as a result of the fall of our forefathers. In other words, not our genome is made up of many fragments of «retroviruses», but, on the contrary, viruses are fragments of the human genome.

Evolutionists want to present our genome in the form of a quilt, sewn for millions of years from individual fragments. With this view it is «justified» to name these patchwork pieces «retroviruses» – that is, ancient and antique, viruses.

If we take the biblical-patristic position, then the hypothesis of «retroviruses», that have been supposedly introduced into our genome in course of millions of years, will be unsustainable. All the observed facts have much simpler and more natural explanation: those naturally occurring snippets of molecules that are commonly called «viruses» are the remnants of the destruction of the human gene pool.

According to this concept, the human genome initially (from the very moment of Creation) included fragments that are erroneously interpreted as «retroviruses» – but in reality they are simply components of a complex genetic code that corresponds to the Creator's original plan. The isolation of viruses as independent organic particles separated from the large genome began to occur, most likely, after the event described in the Bible as God's curse of the earth as a result of the fall of Adam and Eve (Gen., Ch. 3).

What was said above about humans fully applies to all other species of flora and fauna. It is wrong to say that the genome of each of them is «composed» of «retroviruses». On the contrary, the viruses themselves appeared as a result of the decay of their genome.

For clarity, we can offer the image of a bare autumn tree (not an «evolutionary tree»!). During leaf fall, yellowed foliage ceases to be «part of a tree» and covers the ground. It is impossible to imagine the opposite –the crown suddenly composes «by itself» of the fallen leaves. Viruses are something that left the body. They can no longer create a living organism again.

Another example, not as poetic as the previous one, but no less intelligible. As a result of painful processes at the hair roots, dandruff sometimes forms. However, it is difficult to believe that a man (or other creature) was created from dandruff as a result of some evolutionary processes. Viruses are the result of destruction, the loss of the gene pool, the result of decay and mutations. Viruses refer to their «hosts» as dandruff to humans.

* * *

Let's make one significant clarification.

When we say it is impossible to recreate the living organism of a plant or an animal from the fallen leaves or from dandruff, we mean that we are talking about a natural process. Human experience and intuition convince us that such a «self-organization» or «upward evolution» cannot exist in nature.

The foregoing does not set a limit to the action of the supernatural or the Divine. The Bible testifies to the creation of Adam *of the dust of the ground* (Genesis 2, 7). However, this was not a natural evolutionary process, but a deliberate act of the Wise and Almighty God (Genesis 1, 26–27).

Similarly, the Christian dogma of the general resurrection of the dead does not, of course, imply a spontaneous process of re-creating people from dust, but a

miraculous supernatural act of God's Word. Many Fathers of the Church spoke of this.

The holy martyr Justin the Philosopher noted: «If God could create a human body from the earth, then, moreover, He will be able to recreate it, disintegrated into the same earth, again».

The Rev. John of Damascus wrote in «Exact Exposition of the Orthodox Faith»: «*But someone will say, «How are the dead raised up? (1 Cor. 15, 35)? Unbelief! Oh madness! The One Who, by desire alone, has changed the dust into the body, Who has commanded a small drop of seed to grow in the womb and make this diverse and multifarious bodily organism, all the more so, only by desire, will again resurrect what has happened and disappeared?»*

We emphasize the difference between natural and divine actions. In natural terrestrial conditions, no one observed the appearance of life from inert matter, nor the resurrection of the dead. This is contrary to the laws of our world. Only Almighty God is able to create life and raise the dead. This statement contains two main tenets of the Christian faith. And they do not contradict any established scientific fact.

3.3. Which faith is better?

Everything is determined by faith.

Karin Moelling raises the question: «Was our genome once composed solely of retroviral elements?» [p. 176]. And she answers this question, **demonstrating her faith**: «This is what **I suspect** – but **cannot prove** it, and I am sure some colleagues will doubt it» [p. 176]

Why do I call this statement a demonstration of faith? Because, by her own admission, Frau Moelling «cannot prove», but only «suspects». It is this feature that distinguishes religious consciousness from scientific. According to the classical apostolic definition, faith is *the evidence of things not seen*. (Heb. 11.1).

I also believe that in the «fragments» of his biomass at the genome level, a person can be «decomposed» into viruses. However, I do not believe at all that we are composed (or once consisted) of viruses. I, too, «cannot prove» and also can only «suspect». The most curious thing is that my confidence in the invisible is based on the facts presented in the book by Karin Moelling!

And I thank her for that.

A common denominator for Karin Moelling and me is the recognition that the genome of each species includes viruses (or «retroviruses»). The difference between our positions lies in the interpretation of this fact. Evolutionists claim that the complication of the structure of the gene pool of higher species was due to its enrichment with new viruses that enter the body from the outside. Me, sharing the biblical patristic point of view, believe that viruses (for the most part) are «fragments» of larger organisms originally created by God – from bacteria to animals, including birds and plants.

Both points of view are logically acceptable and consistent. All known scientific facts are equally satisfactorily explained in the framework of both concepts.

So, we can believe that «...our genome is indeed a cemetery for fossil viruses» [p. 161]. And you can believe the contrary – that viruses are «half-dead» fragments of full and perfect living organisms. The choice is determined by the taste of the researcher. One prefers to identify himself with the «cemetery» (!), and the other is trying to fight dandruff and other infections.

Can viruses see?

The monograph has an interesting section: «Can viruses see?» It describes the discovery of the gene of vision and notes that it is present within some of the viruses. The author asks profound questions: «In total, five kinds of viruses contain rhodopsin precursors — so such viruses are not even rare. Where did the “**proto-eye**” genes come from? Have they been transmitted **from viruses to hosts**, or **vice versa**? Did they co-evolve with the viruses? **Nobody knows**» [p. 150]

Indeed, «nobody knows». And it is unlikely to ever be known if we would be guided by faith in the hypothesis of evolution.

But the Hypothesis of Intelligent Design provides an elegant and convincing solution to this problem. If viruses are «fereragments» of living species created by God, Who began to undergo diseases, decay and death after cursing th Earth, then it is not at all surprising that among the genetic «fragments» there were microscopic pieces of the eagle's eye (the difference is farsightedness), dragonflies (mosaic), cats (night vision), a chameleon (autonomy of the eyes) and all other God's creations, which have a great variety of features of their organs of vision.

There were no «proto-eye' genes» that would incorporate itself alongside with viruses into the genome of some insects and chordates. There were animals that God provided with eyes when they were created. And after the fall, the genetic material responsible for the organs of vision went to certain viruses, that later became an objects of a study for virology researchers.

So not the «'proto-eye' genes» were transmitted «from viruses to hosts», but «vice versa» – some viruses were formed from sighted animals.

As we can see, in this particular question, our faith gives a clearer and more convincing answer than faith in evolution.

Why only 50%?

We mention another serious problem that arises among evolutionists and causes concern among Karin Moelling.

She writes with dismay: «Why around 50% of our genome comprises retrovirus-like elements, nobody understands. Could it have consisted completely of retrovirus-like elements, up to 100% and not only 50%? Perhaps we only notice virus-like sequences of the 50%, and the rest is no longer recognizable as viruses and has disappeared in genetic 'noise''' [p. 176]». The author clarifies: «Furthermore, 50% is not a limit, but a statistical middle-of-the-range value» [p. 176]

The essence of the problem is as follows. A «beautiful idea» has been put forward and according to it the genome is composed of viruses («retroviruses»). But this assumption is only half true! And it have not been yet confirmed yet for 50%. What was the remaining part of the genome «disappeared in genetic ‘noise’» was formed of then? Why is it «no longer recognizable as viruses»?

The lack of answers to these questions undermines the very evolutionary concept of the formation of the genome «from viruses»”.

If we reconsider this problem in accordance with the biblical view of the world, I would rephrase it as follows. In fact, why only 50% of the God-created Adam’s genome can provide «shrapnel» material for the existence of viruses? It cannot be ruled out (although we will not take it upon ourselves) that the human body could «provide» viruses with 100% of its genetic composition. Why not? Although it may well turn out that some fragments of our genome are not able to exist in nature as «fragment viruses».

In any case, the genome is primordial. Viruses are secondary. There is no unsolvable problem (like that for evolutionists) in our position. There are no paradoxes or logical contradictions.

Our opponents must explain: how that part of the genome, which consists of «not viruses» was formed.

A curious paradox arises here. Until an explanation could be found, the hypothesis about the formation of the genome «from viruses» has no scientific value (since it does not explain anything by 50%). We apply the argument of *ab absurdo* (from absurdity). If an explanation is found, it will immediately act as a dialectical refutation of the hypothesis itself. Indeed, the explanation of how the part of the genome was created «not from viruses» can be extended to that part of the genome that, according to the accepted hypothesis, consists of «viruses». And this is an unavoidable logical contradiction.

* * *

I draw the attention of the reader to these lines – I fully agree with Karin Moelling: our genome is 50% (and maybe fully 100%) «comprises retrovirus-like elements». The only thing is that the author speaks of a person «glued together» from viruses, and I speak about viruses as «fragments» of a person. Is it possible to prove which of these positions is closer to the truth? I believe not, because this is a mindset issue, and it is determined not by experience, but by faith.

However Frau Moelling is trying to do this. She tells us how the researcher named Thierry Heidmann «reconstructed a full-length retroviral genome, synthesized the sequence as DNA and transferred it into cells. Indeed, a replicating retrovirus was produced and could be identified in the electron microscope as a typical retrovirus, one that **could newly infect other cells, including human cells**. This was a **striking proof** that the “dead” endogenous retroviruses, populating our genomes in large numbers, indeed originated from real intact viruses – most of which had in the meantime become extinct» [p. 161]

We will refrain from the moral and ethical assessment of this terrible experiment, the purpose of which was to isolate a virus from the genome of a living organism that «could newly infect other cells, including human cells». Obviously, the technology and the «good example» of creating another type of biological weapon are described here...

We confine ourselves to an attempt to determine the scientific value of this discovery: is it really about the proven origin of elements of our genome (the so-called «retroviruses») from ancient active viruses?

To the dismay of evolutionists, we cannot see any «proof» for this, much less «striking» here.

In order to clarify our idea, let us move on to the macro level. The human body contains substances that are deadly (–malnourishing to put it mildly) for the man himself. The ingestion of a mixture of bile, gastric juice, urine, secretions of sweat and some other excretory glands can lead to poisoning of the body and even death. Snake venom is deadly for the bitten snake, bee venom is for the stung bee. Scorpions sometimes kill themselves by sticking a poisoned sting into their own

body. But these examples do not prove at all that the organs and glands producing these toxic substances are foreign to our (as well as snake, bee and scorpion) organism. Let's continue the analogy: by burning any organic matter, it is possible to obtain deadly carbon monoxide (CO) under certain conditions, but this does not refute the fact that carbon and oxygen are the main elements that make up every living molecule.

From the human genome, as Karin Moelling informed us, it was possible to isolate a completely virus-like formation «capable of infecting other cells». However, this does not exclude the possibility of this «retrovirus» (like all other «retroviruses») being originally part of the genome. The examples given in the previous paragraph, by contrast, make this possibility highly probable.

At least one can't make conclusions about «external» or the «foreign» origin of this fragment from the observation that a specific fragment of an organism (at the macro or micro level) can under certain conditions have a harmful effect on another part of this organism (infect, poison, suppress, kill)..

* * *

Now I want to raise one tricky question: does T. Heidmann's result prove that all other harmful intact viruses also once appeared in nature as «fragments» of some complex genomes?

Our assumption is very likely and logically consistent.

In fact, Hydeman's «reconstruction» showed how one of the viruses was obtained by isolating a fragment called a «retrovirus» from the genome. It would be reasonable to ask: could all other existing viruses have been formed from the genomes of humans, animals and plants in this way? Or, at least, a significant part of them?

Our conclusion is antipodal to what Karin Mölling does. I wonder if evolutionists will be able to fend off this blow.

* * *

One should also take into consideration the important circumstance that Professor Moelling draws the reader's attention to: «real intact viruses — most of which had in the meantime become extinct» [p. 161]

Why did not one of them survive to this day? Maybe they have never been outside the human genome? Where did they all, otherwise, suddenly disappear?

These considerations also do not strengthen the position of evolutionists either, but, obviously, bring grist to our mill.

4. Virology and computer science

In the mid-twentieth century, the development of science in the Soviet Union had two serious flaws. For ideological (or rather idiotic) reasons, genetics and cybernetics were declared the «bourgeois» sciences, which, as you know, led to sad consequences.

One needs to learn from mistakes. Therefore, at the very least, it is desirable not to lose sight of both of these branches of knowledge today. In particular let's not forget about the law of information conservation when speaking about the genetic code. It is like energy – it cannot arise from nothing, and the source of new information is the mind.

4.1. Where does the genetic information come from in viruses?

Viruses are very elegant and intricate. For example, one of the smallest viral particles, the causative agent of poliomyelitis, «contains 3,326,552 carbon atoms, 492,288 hydrogen atoms, 1,131,196 oxygen atoms, 98,245 nitrogen atoms, 7501 phosphorus atoms and 2340 sulphur atoms» [p. 14]. Such a complex structure cannot develop by «itself».

In addition, the information contained in the viruses is huge because of its immense diversity, and it could not have been developed in a random way: «The total number of genes in bacteriophages surmounts that of all other species combined on our planet» [p. 115]!

We also got this information from the book by Karin Moelling.

But then one fundamental question arises: what is the source of the genetic information contained in viruses? Viruses could borrow it either from the genetic code of a cell (if this cell existed before the virus appeared), or from some reasonable source.

Dr. Moelling writes about viruses: «90% of the genetic information in the sequences is unknown and unrelated to any known sequences. There are so many viruses with unknown information! This is quite surprising. **Where does all the information come from?** Self-made? Yes, probably, viruses try everything, and the cell cannot provide all the genetic information, because it simply does not have that much» [p. 115].

The question was posed correctly, although helplessly: «Where does all the information come from?» After all, it really does «come from» somewhere! If the author excludes the possibility of it being borrowed by viruses from the cells, this does not explain the appearance of genetic information in the viruses themselves. It could not, in fact, be “self-made”!

It is strange that touching upon this problem, Frau Moelling is not trying to solve it or at least somehow indicate the approach to solving it. There is no answer in the book.

In fact, the answer is obvious, and it is unique: we have to search for the Source of this information. It can be the Wise Almighty God, who directly created viruses with the genetic information embedded in them. Or it could be an existing living organism (cell?), that is more complex in terms of information and from the «fragments» of which a virus structure could have been formed. But who created this «very first» organism, if not the same Creator God Himself?

Karin Moelling denies the existence of an Intelligent Source, and therefore her version seems completely unbelievable and unconvincing: «Where the genetic code comes from we do not really know. Perhaps the viruses developed it by trying everything, and at some point it ‘just happened’» [p. 216].

No, this can't be. It is impossible to believe in the accidental formation of a complex information structure. No billions of years will be enough to create a genetic code, if you act on the method of «having tried everything that is possible». What truly divine attributes viruses should possess to have it «just happened»! Denying the Creator's Divine Mind, Dr. Moelling actually endows viruses with His qualities.

It should be understood that when speaking about the origin of information in the genetic code, Karin Moelling raises the question of finding a Intelligent Source of this information. At the same time, she names viruses as candidates for this role. And this is her big mistake: viruses are not suitable for this function. One hardly could suspect them having reason and ingenuity.

The fact that we «do not really know» where the genetic code comes from (and this is the plain truth!), does not justify the statement of such an incredible assumption that Karin Moelling makes with enviable ease. It is easier to believe that the Lord God created by His Wisdom a genetic code for all species of animals and plants, including viruses.

It seems that in the categories of «evolution theory» this problem cannot be solved at all – neither by using model of «upward evolution», nor explaining it by «degradation». In our opinion, the diversity of the gene pool during the initial emergence of life on Earth cannot be satisfactorily explained without resorting to the hypothesis of the Intelligent Creator, that is, the Creator God.

4.2. The biblical basis of natural science: creation and curse

As we have seen above, evolutionary virologists are not able to say anything intelligible on the topic of the appearance of genetic information. Let's fill in this flaw and turn to the biblical version of the origin of life.

In broad strokes, it can be stated as follows.

In six days, the Almighty God created the whole living and inanimate world, which was originally incorruptible. There was no death, no predation, no carnivores, no decomposition processes. In the heavenly state of the pristine world of peace, no one had enemies. Nobody ate anyone, nobody parasitized on anyone. There were definitely no «phages», which means «devourers» in Greek. All flora and fauna, both on land and in waters, harmoniously filled ecological niches at all scales envisaged by the Wise Creator.

Perhaps in the beginning (that is, before the fall) there were no viruses at all, or there were much fewer than now. In any case, none of their varieties was harmful or «parasitic». Karin Moelling's intuition was correct telling her: «viruses, more friends than foes», «viruses – better than their reputation» [p. 112]. Such, at least, were all viruses before God cursed the earth, i.e. until the moment when God's words were addressed to our forefather Adam: *Cursed is the ground for your sake* (Genesis 3, 17).

The moment of the fall was a universal catastrophe. Due to the curse of the Earth, the incorruptible species of animals and plants underwent various distortions and mutations.

At the macro level, the curse manifested itself in the acquisition of new qualities by God's creatures. That is how predators, parasites, corpse eaters appeared in animal world and *thorns and thistles* (Genesis 3, 18) among the plants – that is, all forms of deformity and imperfection.

At the micro level, mutations led to the fact that the world was filled with «fragments» and «scraps» of various genetic material. This can explain the origin of most viruses. At the same time, a significant part of viruses has turned into aggressive and «selfish» (according to the winged phrase of R. Dawkins) entities. They began to parasitize on other species, on bacteria («bacteriophages») and on each other («virophages»).

Far from a long, billions of years-long process, but rather an explosive fragmentation of the original gene pool of the entire primeval flora and fauna led to the observed diversity of the genetic composition of microorganisms.

The picture we described may seem «not scientific». But, firstly, it does not contradict any scientifically established fact (in particular, it corresponds to the facts presented in the book by Karin Moelling). Secondly, it answers questions about the origin of matter, information, life and mind – those are fundamental questions that evolutionists have no clear answer to. Thirdly and finally it is based on the authority of Divine Revelation (which is rejected by atheists without any reasonable reason).

* * *

Thus, from the biblical and patristic point of view, the explanation of the diversity and complexity of the genetic information in viruses (in the same way as in all other existing species) is reduced to two actions performed by God. The first act is the creation when the gene pool was created. The second act is the curse of the Earth, when the genome originally belonging to each species was given into the power of rot and decay.

In scientific and philosophical terms, the alternative hypothesis of Intelligent Design is no more flawed than the hypothesis of spontaneous occurrence of life and human.

5. Where did life come from?

Karin Moelling associates the emergence of life with viruses: «At the origin of life RNA viruses were around as the largest biomolecules, and from then on they have always been present» [p.23]

The author offers two versions of where life could have come about.

The first version

It is equipped with a photograph with an eloquent caption: «Hydrothermal vents or black smokers are volcanoes in the deep sea, where life began» [p. 10]

There is nothing further from what is commonly called «normal conditions» in the sense of temperature, pressure, the presence of the atmosphere, light, and everything else. «From there high chimneys formed, the hydrothermal vents or “black smokers”. Black dust and smoke were released from these volcanoes at the bottom of the oceans. Water there can reach 400°C, because of the high pressure at these depths. Somewhere there, life started...In the opinion of many scientists, it was there that the first biomolecules, such as RNA, arose» [p. 9].

The second version

It is no less exotic: «It is also conceivable that life started not in the warm but in the cold; early life may have existed in ice crystals with fluid passing through channels, and some molecules may have led to biomolecules such as RNA» [pp. 10 – 11].

Both mutually exclusive versions – both «high temperature» and «ice»-related – look impressive. But before hastily choosing one of them, I want to pay attention to their incompatibility. If one version suddenly turns out to be true, then the other will become knowingly false.

Frau Moelling optimistically («the glass is half full») argues that one of the two proposed versions is probably true. We will pessimistically («the glass is half empty») note about each of these versions that it is most likely false. We add to this that both versions are not very consistent with common sense: after all, we are talking about the origin of life in conditions under which life is completely impossible! Darwin’s «warm puddle» or Oparin’s «broth» look much more realistic against their background: the living creature in those, at least, will not boil nor turn into an icicle... And this circumstance undercuts both versions even more.

What are two presented hypotheses based on?

Perhaps someone observed the emergence of life in the described «hellish», completely «infernal» conditions? Or are there any calculations that indicate those anomalous parameters are optimal for the first manifestations of vital functions in inert matter?

No, no and no! Neither natural observations, nor even calculated theoretical predictions on this topic are available (at least, there is nothing about it in the monograph). If they were, Professor Moelling would certainly inform the reader about this. But then what are these extravagant versions based on?

They are based only on the fact that, both near the «black smokers» and in the meters-long ice layers, it turns out that RNA molecules were discovered!

So, these biomolecules are able to exist in extreme conditions. This, of course, is important information. However, we have the right to doubt: is this circumstance can be considered a sufficient basis for the assertion that they were formed there and were not introduced from outside? Indeed, RNA molecules are found everywhere: «viruses are found wherever life is» [p. 16]. What are some reasonable arguments for considering exotic places to be the source of RNA distribution throughout the Earth?

In our opinion, it is more natural to assume that, on the contrary, some microorganisms, having fallen into hydrothermal springs or permafrost, were able to adapt, that is, adapt to living in these adverse conditions. Our version does not conflict with any fact known to science. At the same time, we dare to hope that it looks much more convincing.

Note that in the previous discussion we did not resort to the hypothesis of the action of the Intelligent Creator. If we rephrase our thought under the assumption of the existence of God the Creator, the picture will become even more elegant and harmonious. The Lord created various species of flora and fauna, including microorganisms, and gave them the blessing to multiply, replenish and fill the earth. And it was not in hell, but in the *Garden of Eden* (see Genesis 2, 8–9). At the same time, different species received unequal ability to populate one or

another habitat. Where it is difficult for animals and fish to survive, according to God's sight, some viruses and prokaryotes can exist. This is the manifestation of the wisdom and omnipotence of the Creator – the Life Giver and the Provider.

Living – from inanimate?

It is clear to everyone – both Karin Moelling and me – that viruses (RNA, they are «viroids», they are also «ribozymes») belong to the living kingdom. To the question if they could have arisen by chance, Professor Moelling answers quite correctly: «Never!» [p. 202].

The book also has such a consonant statement: «So, are viruses alive? Almost. More yes than no!» [p. 322].

Nevertheless, oddly enough, Frau Moelling does not forget to mention Darwinian primordial «broth» in the context of the possible origin of life. She is convinced: «New chemical analyses confirm that the three major building blocks of life, nucleotides, amino acids and lipids **could be synthesized** in Darwin's "primordial soup" with an energy supply from the surroundings. The chemist John Sutherland, in the U.K., **can produce** in a "one-pot" synthesis in a single test-tube all three building blocks for life starting only from simple precursors such as HCN, P, H₂S, H₂O, and UV light. **This could have been the origin of life**» [p. 317].

Here, the advertising language describes another attempt to create life in vitro. Although, of course, neither did John Sutherland nor his predecessor Stanley Miller produce any «life».

The main characteristic feature of all such laboratory experiments is the presence of a reasonable experimenter. If a magician is able to extract a rabbit, a turtle and a parrot from his top hat, this does not indicate the properties of the animals (or the top hat), but the dexterity of the illusionist. The expression «could be synthesized» means the skillful selection of artificial parameters. A professional chemist «can produce» very complex chemical reactions. But in real environmental conditions no one has observed such reactions. Who is the wise experimenter who picked up the technology for the synthesis of the first protein? Miller and

Sutherland are talented scientists, but they were not present at the birth of life on Earth. Therefore, their experiments do not prove anything – neither of how «it was», nor even of how «it could be» (because none of the people were present there).

There is no man who can answer the questions asked by the Lord God to the righteous Job the Long-suffering: *Where were you when I laid the foundations of the earth? Tell Me, if you have understanding. Who determined its measurements? Surely you know! Or who stretched the line upon it?.. Whoever convicts God, must answer him* (Job 38: 4–39, 32).

A test tube is an unsuitable way of understanding how life could begin on Earth. In chemical retorts, the main thing is missing – the Intelligent Creator. And if we allow His participation in the creation of all living things, then all bottles with hydrocyanic acid and hydrogen sulfide will be superfluous. Life could only begin if it was created and blessed by the Wise and Almighty Lord.

In any case, it is obvious that life certainly did not arise from the test tube.

6. On the age of viruses

Professor Moelling poses the key questions: «How can one determine the age of these ancient viruses» [p. 162].

In all research methods accepted by genetics, age is estimated by the number of mutations. Let us demonstrate that the question of true chronology is one of the most vulnerable for evolutionists.

6.1. Evolutionary model. Measurement or calculation?

Karin Moelling informs the reader: «Assuming a certain mutation rate, this can lead to different mutation patterns from which one can infer how long ago the two LTRs might have diverged. Some HERVs are 100 million years old. For one of them, HERV-K, which we **analyzed**, we **determined** an age of 35 million years» [p. 162].

Let's clarify the meaning of the selected words. The verb «analyzed» here means: «investigated the real object» (virus). And by the expression «determined» it should be understood: «made a calculation» according to the chosen «model». In other words, the virus as an object was investigated, and its age was calculated (!) based on the accepted mutation pattern. When choosing another model, the estimated age, of course, will be completely different.

Let us give an illustrative example. Watching the street from the window of my house, I «analyzed» the picture of the movement of cars along it and «determined» that their average speed is 60 km/h. I trust the accuracy of my measurements, especially since they comply with police regulations. But I do not have the right to generalize my «model», according to which the speed of each observed car is always and everywhere taken the same as on the section of road in front of my house: on the race track, and at the gas station, and when it stands in the garage for weeks. My model is bad for it does not take into consideration the real picture of changes in the speed of cars far from my house – this speed can vary from zero to very large values.

Another example. Dendrological **analysis** allows you to accurately determine the age of the tree by its annual rings. You can do otherwise, and **calculate** the age of this tree using the radiocarbon method. The calculation result, as experience shows, is usually noticeably different from the true age (the error vary from few up to hundreds of percent). Unlike trees, we cannot directly establish the absolute age of viruses. There is no standard for its measurement. Therefore, researchers are forced to operate only on the «estimated» age of viruses, having no idea how many orders of magnitude it differs from the true one.

All calculations of biological age are based on the concept of the rate of change of the genetic code due to mutations. Moreover, in the accepted calculation models, it is assumed that the currently observed mutation production rate in the old days was always constant.

But what is this assumption based on? Nothing.

Take the chemical reaction as an analog. In the presence of a catalyst, its speed can vary thousands of times. Sometimes even a catalyst is not required, and in order for the reaction to proceed more efficiently, the mixture of reagents needs to be heated a little or simply exposed to light.

Let's imagine that in the past, gene mutations occurred 1000 times more often. Then the calculated age, estimated at «millions of years», in reality will be equal to thousands of years – that is, correspond to the biblical!

If we assume that mutations in ancient times occurred 1000 times less, then the calculated age, estimated at «35 million years», «in fact» should correspond to 35 billion years! This is a period several times greater than the age of the universe, if we evaluate it in accordance with the hypothesis of the Big Bang.

Let us emphasize that when choosing a model, we have no reliable grounds for increasing, decreasing or maintaining the speed of mutation production in the past. Karin Moelling chose a computational model according to which the mutation rate was assumed constant over the past 100 million years. But neither she, nor any of her evolutionary colleagues are able to substantiate this hypothesis. And if, after all, the speed of mutations is not a constant, but varies thousands of times?

6.2. «The Model of the Prophet Moses»

As a Christian who believes in God's Creation of the World, I have the right to ask the following question: Were there any mutations on the pristine Earth before it was cursed by God? A similar question related to paleochronology: was there a phenomenon of radioactive decay in the imperishable Garden of Eden? Could the curse of the Earth following the fall of the forefathers cause mutations and nuclear decay? And if so, how have the parameters of these phenomena (which evolutionists somehow consider constants) changed over the past 7.5 thousand years?

The basis for such questions lies in the biblical words spoken about Adam: *therefore the Lord God sent him out of the garden of Eden* (Genesis 3, 23). I do not

want to impose the truth of these words on anyone. This truth is accepted on faith; it can neither be proved nor refuted. Just like faith in evolution from viruses to Homo sapiens. But if our forefathers once lived in Paradise, there certainly could not have been any gene mutations.

It is important to understand that the biblical testimony of the Divine Creation and expulsion of the forefathers from Eden in no way contradicts any fact cited in the book of Professor Karin Moelling. She suggested that the speed of mutations is constant, and on the basis of this unsubstantiated hypothesis, she received the estimated age of the «retrovirus» equal to 35 million years.

According to Genesis, I make an alternative assumption: before the fall of Adam and Eve, the mutation rate was zero (there were no mutations in the Garden of Eden). After the fall in the world there was a «Big mutational explosion». It manifested itself in an avalanche-like change in the gene pool throughout the earth's flora and fauna. 7.5 thousand years after the fall, the average speed of mutations reached the level observed today.

Not claiming the originality and priority of this concept, I propose to call the scheme that I described the «model of the prophet Moses». The main difference between it and the «model» used in Karin Moelling's calculations is the allocation of the «curse of the earth» point on the time axis. At this point, the mutation rate in the genes, we assume, reached resonance values (i.e., it was several orders of magnitude higher than the current one).

Let us draw attention to the fact that in our model the determination of genetic age does not depend on the duration of six days of creation. In fact: whether to consider (as is customary in the patristic tradition) creation days equal to 24 hours, or (as some modern theologians admit) that these days were «eras» – to the indicated point, that is, before the event known as the expulsion of the forefathers from Paradise, there were no mutations in the imperishable pristine world.

In evolutionist models, the concept of «moment of sin» is absent, and therefore the speed of mutations is assumed to be constant – as in the calculations of Karin Moelling.

If someone reproaches me that my assumption is «unscientific», I will not justify myself. I will only note that the Karin Moelling's proposal to consider the speed of mutations as constant is also unscientific and unfounded, and exactly to the same extent. And this is the plain truth.

6.3. Beyond the bounds of reliable knowledge

Touching upon the topic of genetic paleochronology, I cannot but thank Karin Moelling for her sincere confession: «Endogenous retroviruses cannot be followed back further than about 100 million years» [p. 177].

This means that the applied age estimation techniques make further approximations unreliable.

When we now, after this notice, hear about the existence of viruses in the «Paleozoic», «Proterozoic» or «Archean», we must understand that we are obviously talking about a misconception. So far no one has succeeded in reliably tracking their «history» further than 100 million years, as we learned from the Karin Moelling's work.

Actually, after these words, Professor Moelling's thought suddenly for some reason becomes much less thorough: «"Hominids" existed about 200,000 years ago. Much older is Lucy. She is perhaps our oldest mother and lived in Ethiopia about 3 million years ago... That counts (?! – *K.B.*) for being our relative – yet life began 3.9 billion years ago. What happened in between? The gap is huge. **There is no reason to believe** that in the meantime no retroviruses or any of their relatives **were around** to fill the genomes of bacteria, archaea, plants, animals and humans» [p. 177].

Coffee cup reading seems to be much more serious and thorough occupation than such evolutionist conclusions.

Let's make two comments with respect to the indicated age limit of 100 million years. Firstly, it is difficult to say what this calculated (!) interval corresponds to in reality when compared with the annalistic biblical time scale. It is only clear that it does not exceed 7.5 thousand years – the absolute age of the created matter.

Secondly, the remarkable fact that the limited determined genetic age cannot exceed «100 million years» does not lead us to the conclusion that the adopted evolutionary model allows us to obtain a reliable age in the interval less than «100 million years». As we have already indicated, in addition to the usual measurement errors, a systematic error (by several orders of magnitude!) can be hidden in the model itself – and there is no standard by which the model parameters could be calibrated.

I would like to make one more remark about the chronology and «age» of the described species of flora and fauna. No one knows how much calculated estimate can differ from the real age: twice, a thousand times, a million times? Therefore, I want to warn the gullible reader (and, of course, first of all keen authors) from hasty adoption of the following pseudo-facts:

– «Coelacanths have been around for the past 40 million years and are considered to be the oldest living fish – living fossils... Coelacanth's genome is 2.9 billion base pairs long, which is unexpectedly large, and it is full of repetitive sequences» [p. 187].

The platypus «can be dated back about 100 million years. **It is as strange as science fiction.** Its genome is a mixture from diverse species» [p. 188]

Regarding the age of both species, we can say that this, in fact, sounds «as strange as science fiction». Definitely, such calculations belong to the field of science fiction. No one is able to either prove or disprove these estimates. No one knows how many orders of magnitude these figures differ from the truth.

Moreover, such data as the length of the genome of the coelacanth or structural features of the platypus' genome do not cause any doubts. Such

information, on the contrary, can be objectively checked, specified and detailed. Scientists should thoughtfully distinguish what is a reliable fact in their research and what is a hypothetical assumption. The coelacanth and platypus are real objects of study, and their genomes are available for research. And their «genealogy» will forever remain in the realm of speculation.

We give an example of a figurative explanation. The vehicle's odometer testifies that its mileage totaled 30 thousand kilometers per year. No matter how accurate this result is, it does not give us the opportunity to assess the path traveled by this vehicle over the past 100 years or over 40 million years. Before multiplying the figures, the following should be determined: did this object exist for so long (car, coelacanth, platypus, HERV-K virus ...) as well as the road it could travel by?

So when did the viruses come about? According to model calculations based on the evolution hypothesis, «Bacteria and viruses have existed for at least 3.5 billion years» [p. 115]. In accordance with the biblical picture of the world, which we called the «model of the prophet Moses», the emergence of viruses, as well as all other life forms, occurred 7.5 thousand years ago.

7. Viruses as parasites

As a leading competent specialist in microbiology, Karin Moelling states the undeniable truth: «Today, we detect only cell-dependent parasitic viruses» [p. 25]. So, the first virus could not appear before the cell on which it depends.

We are ready to treat this fact with due attention and do not question it. Indeed, viruses are not capable of eating or propagating on their own. Like any parasite, they need a «host».

After the foregoing, it is impossible to seriously take the following reasoning of the author: «Today's viruses need cells, but that could have been the result of long evolution. Indeed, there are the viroids, naked RNAs, which can replicate and evolve and may initially not have depended on cells as they do today» [p. 24].

So, the hypothesis was put forward that the observed dependence of viruses on the cell is the result of a long evolution. Thus, the viruses' acquisition of the «parasite» status should be evaluated as one of the most noticeable achievements in evolution!

Since there are no facts confirming the assumption of the independence of viruses from the cell in the past, Dr. Moelling has the right to admit anything. Only these baseless fantasies have nothing to do with science. I would like to see arguments that are more solid than «could have been the result» and «may initially not have depended».

The topic of the emergence of parasites, or rather the pair «parasite» – «host» has, in our opinion, not only scientific, but also metaphysical content. In this context viruses, which are parasites without exception, can be considered together with other parasites known in biology and in parallel with them. Our further considerations can be applied not only to viruses, but to all species leading a parasitic lifestyle.

7.1. A view from the perspective of evolutionism: viruses – smart parasites

An evolutionary view of the problem makes it sufficient to consider two existing possibilities:

- 1) The «parasite» existed before the mechanism of its relationship with the «host» started functioning.
- 2) The «parasite» was formed simultaneously with the launch of the mechanism of its relationship with the «host».

We emphasize that we are not talking about the absolute or relative age of viruses and their hosts (which of them appeared earlier, and which later), but about the antiquity of the appearance of their relationship mechanism. In other words, we are talking about the moment when the «parasite» began its parasitic life. So, in addition to the origin of the «parasite» and its «owner», it is necessary to explain the formation of their interaction mechanisms.

These mechanisms are very diverse in nature: each «parasite» enters into a special unique relationship with its «host». Mechanisms provide the «parasites» with certain stability during their survival and reproduction. How did each of the «parasite» manage to create its own mechanism of relationship with its «host»?

First option

It boils down to the case when there had been an independent evolutionary development of the «parasite» and its future «host». Then, at some point, the relationship mechanism began to operate. It does not matter who is older – the virus or its owner. It is important that at some stage of independent development, their existence has turned into a co-existence.

From the evolutionary point of view, this option seems logically contradictory. One has to admit that viruses once lost a number of their functions, due to which they managed to ensure their own existence at first, and then degraded and lost this opportunity. Therefore, all viruses are degradants. But then it becomes unclear how the evolution of viruses went. Just down?

Karin Moelling claims that the cell was formed from viruses – does this mean that the first cell was formed from degradants? From what viruses were formed from (through degradation!)? Could it be the cells?

There is a vicious logical circle.

There are other perplexing questions. What exactly viruses were before they acquired their hosts? How did they breed? Why did **not one of them** retain the ability to lead a non-parasitic life?

Or maybe they were just fully developed cells? But such an assumption refutes the very evolutionary doctrine of the cells emerging from viruses. What then formed the cells?

These and many other questions have no, at least approximate, constructive answer within the framework of the evolutionist paradigm.

Second option

It is described by the case when a «parasite» was formed simultaneously with the start of the relationship mechanism with the «host». It doesn't matter how long the «host» has existed before the moment it was exposed to the virus.

Evolutionists must explain not only the origin of the viruses themselves, but also the origin of the mechanism by which the virus interacts with its host. This way posed the question substantially complicates the problem. Why would the «host» enter into a new relationship with his «parasite» instead of trying to destroy (or ignore) it? How did each parasite manage to «come up» with an individual unique mechanism of interaction with its future host? This issue is of particular importance if we take into account the observed huge variety of complex multistage mechanisms of relations between «parasites» and their «hosts». Finally, who «invented» these mechanisms – the host or the virus? After all, both of them do not have intelligence...

Karin Moelling tries to solve these problems by introducing a concept of «co-evolution» or simultaneous, joint evolution. So, she writes: «Algae and viruses have co-evolved for 3 billion years, and it is thought that these viruses belong, in evolution, to the oldest ones we know of» [p. 136]

However, such reasoning only confuses the issue even further. Who observed this «co-evolution» in course of «3 billion years»? And, most importantly, an attempt to hide behind a «billions of years» delay (a signature evolutionary trick!) does not clarify the question of how the observed mechanism began to work? How did these algae and viruses exist before the beginning of their joint «co-evolution»? Where did each come from? Who taught them the mechanism of effective interaction and «“co-evolution» itself?

Don't evolutionists think of viruses as «too smart», capable of inventing and implementing sophisticated biochemical mechanisms? Denying the existence of God as the Wise Creator, materialists attribute the property of thought to microbes – as if they were rational subjects.

Karin Moelling never gets tired of repeating: «Viruses are the drivers of evolution» [p. 155].

Doesn't it turn out that smart and cunning viruses carry out the world evolution in their own selfish interests?

The following reasoning of Karin Moelling presents unicellular organisms as being very «anthropomorphic», as if she was talking about ancient Greek Olympian gods or about two clans of wise skilled craftsmen who can exchange secret technologies: «Who learnt from whom? The viruses from the cell or vice versa? I think the viruses were the inventors of protein synthesis, which the cells then learnt from them. That is what I believe – with a little evidence as well» [p. 212].

Frau Moelling, this is what you believe in. Perfect. But the evidence you have is not «little.» You have no evidence at all. Sorry. I don't understand how stupid viruses could «invent» something. Or «teach» someone? Or «learn» something? How could stupid cells «adopt» someone else's invention?

There are no answers to all these questions.

These helpless and childishly naive words clearly show the need to find a source of reason, which the author denies. In any case, it is difficult to accept the following arguments as «scientific»: «I think», «that is what I believe», and «with a little evidence».

Having examined both possibilities – when the virus formed before and simultaneously with the beginning of its interaction with the «host» – we were able to make sure that there are no satisfactory explanations in the framework of the evolutionist concept of the origin of «parasites» (and the mechanisms of their relationship with the «host»).

7.2. A view from the perspective of creationism: action of the Wise God

Let's now state creationists' version of the «parasites» origin.

Before the Fall, no parasites existed. None of God's creatures did harm to the other and did not live «at the expense» of the other. All observed «parasite» – «host» pairs started when the Lord cursed the Earth. They appeared due to the Wisdom of the Creator, who provided for the possibility of launching all the various mechanisms of «parasite»-«host» interaction in conditions when smoldering started its reign on the Earth.

God cannot be considered either the «“culprit» or even the «reator» of death. As stated in the Holy Scriptures, *For God made not death, neither hath he pleasure in the destruction of the living* (The Book of Wisdom 1, 13). The culprit of death is forefather Adam, who himself fell under the influence of corruption, and introduced death into God's created world.

Many Church Fathers wrote about this, in particular, St. Gregory Palamas in Homily 31. He wrote that if the Lord did not create death and is not the culprit of all the burdens that come with death, then where do we have weaknesses and illnesses and other types of evil, of which and death is born? Where does death come from? – As a result of our disobedience to God that happened in the very beginning; due to the transgression of the commandment given to us by God; due to our ancestral sin that was in the paradise of God. Thus, both sickness and infirmity and the many-sided burden of temptation comes from sin.

At the same time, the Wisdom of God was manifested in the fact that along with the curse the Lord put into the creature those mechanisms of new existence that were not possible (and could not be) in the imperishable Garden of Eden. The most visible of these new relationships are predation and parasitism. Changing the nature of all previously incorruptible species made it possible to implement a different, not heavenly, way of being of living creatures in new terrestrial conditions.

The Bible separately speaks about the man: *Also for Adam and his wife the Lord God made tunics of skin, and clothed them* (Genesis 3, 21). It is admirable that the curse of the Earth did not lead to the extinction of all former forms of life,

but to the emergence of new relationships between species. This manifested the action of the Almighty God, the Provider of all creatures.

The Holy Apostle Paul points to the suffering of the creature that began after the fall of Adam, and to the expectation of liberation from this suffering after the final liberation of man: *For the earnest expectation of the creation eagerly waits for the revealing of the sons of God. For the creation was subjected to futility, not willingly, but because of Him who subjected it in hope; because the creation itself also will be delivered from the bondage of corruption into the glorious liberty of the children of God. For we know that the whole creation groans and labors with birth pangs together until now. Not only that, but we also who have the firstfruits of the Spirit, even we ourselves groan within ourselves, eagerly waiting for the adoption, the redemption of our body.* (Rom. 8, 19-23).

Saint Theophan the Recluse writes about this that the creature itself is looking forward to our future glory. Why? Because it was created incorruptible, because of the sins of men it became perishable, for we also became perishable from incorruptible (166, p. 50)].

In the context of the presented concept, parasites can be considered responsible for the implementation of certain «forms of punishment» or «methods of suffering», or even as far as «executioners».

By this, by the way, they are very similar to the devil. The deeds of the enemy of the human race are temptations and lures, leading to crime, death and all kinds of suffering.

Just as demonic obsessions are often referred to as «undead», so viruses fit this definition perfectly. Viruses are not life, but rather **anti-life**. Viruses are the culprits of a cancerous tumor in a healthy body. They, by their nature, are clearly related to the *fallen world*, to the land *cursed by God*. One should not make a rash conclusion that the prince of this world (John 16, 11) is the creator of those entities that he uses in his arsenal. Being himself cursed by God (Gen. 3, 14), he, on God's

cursed earth, has the authority granted to him to bring destruction to all living things. But he is not a creator or even an inventor – only , a temporary user.

In any case, not one of the mechanisms of vital activity of the «parasites» could be carried out by the devil or the parasites themselves without the will and participation of the Wise Creator.

Where, if you adhere to such a creationist view, did viruses appear? Probably, most of them were formed from larger animals (not necessarily from unicellular ones!) as a result of the destruction of their genome. Thus, they got the opportunity to adversely affect the organism that gave rise to them and other organisms with a similar genetic structure.

Others, more complex than viruses, arranged by parasites (bull tapeworm, etc.), could be modified by mutations from some species created before the fall (flat worms and annelids, etc.). As a result, they got the opportunity of such an existence in a fallen world, as we observe today.

God, with this approach, turns out to be responsible for the appearance of each species, for the structure of its genome, and also for those surprisingly subtle mechanisms of interaction between species that could not be formed by a random evolutionary path. The relationship between the «parasites» and their «hosts» find an understandable and elegant explanation in the creationist paradigm, which can serve as a vivid confirmation of the biblical point of view over the evolutionary one.

* * *

Karin Moelling asks an interesting question, and she answers it herself: «Will viruses destroy their hosts, and lead to the end of mankind by killing us all? No, that is a fairy tale and will not happen. It would be nonsense from the point of view of evolution, because then viruses would eliminate the basis for their own existence or “survival” and die out themselves» [pp. 25 – 26].

The author seriously writes about «nonsense from the point of view of evolution», as if evolution is some kind of rational being that does not allow the slightest violation of «common sense» and the perfect unhindered manifestation of one's will. In fact, if we deny the action of the Living God, then evolution must inevitably be a random and unpredictable process in which «dead ends» and «extinct genera», lines of «regression»” and “stabilization” arise. Therefore, if some kind of “parasite” leads to the destruction of its «host»” (both at the level of the individual and at the level of the species), no «nonsense from the point of view of evolution» will just happen.

If we use the word «nonsense» as a scientific term, we should not apply it to such spontaneous processes as evolution. We would suggest a more correct and decent phrase: «“nonsense from the point of view of God's providence»». It is in the context of the theological paradigm that it is impossible to imagine the existence of either stupidity, or unfortunate chance, or miscalculation, or error due to forgetfulness or due to incorrect action.

Only faith in the good and perfect God's Providence can be a guarantee that viruses will not completely destroy their hosts. If the Lord wills it, and He will «allow» the parasites to destroy a person or an entire family, this will certainly happen. So it was, for example, a punishment to King Herod, who was eaten alive by worms from the inside. Besides the natural microbe dissemination and sanitary procedures undertaken by people, «epidemics» and «pandemics» are controlled by the Providence of the Almighty.

7.3. Once again about faith. About belief in evolution

Karin Moelling solves the problem of the origin of life pseudo-scientifically: «Yet energy does not necessarily have to come from the sun or from a cell. Chemical energy might suffice. **Cells came so much later.** This leads us to the question: **What came first, the virus or the cell?»** [p. 196]

The statement that «cells came so much later» is unfounded and unproven and the following question («What came first, the virus or the cell?») seems purely rhetorical. I can offer an alternative – just as unfounded and equally unproven – statement: «**cells appeared a little earlier**». Then the answer to this rhetorical question will be the opposite.

This answer depends on faith. Karin Moelling and I have different beliefs; therefore, our answers to this question will be different. I believe in God's creation of heaven and earth, and for me viruses are degradants. She believes in evolution, and for her viruses is a transitional stage before the appearance of the cell.

Let's omit the subsequent considerations about where water and other elements came from. Soon, the author again turns to his favorite topic, to viruses, whose lifestyle on-goings, as she herself notes, «depends on the cells». However, despite her own fair remark, Karin Moelling immediately ignores this fact: «But at the beginning this may have been different» [p. 196].

Whether it «may» or «may not» be different from what we observed today, no one is able to say. I believe that only God knows about this. It is only clear that the formulation of the question is not entirely scientific.

By the way, in this matter I'm not going to argue with the author, but, on the contrary, I would like to offer my version of how, «at the beginning this may have been different». If there were viruses before the fall, they certainly did not parasitize the cells. This means that unicellular and multicellular organisms did not serve as energy sources for them. After the curse of the earth, all viruses, as we know, became parasites. At the same time, in my deep conviction, viruses did not become «evolutionary ancestors» for any species.

Karin Moelling, on the contrary, believes that the cells came from viruses, and therefore expresses a very strange version that earlier viruses could have been independent from cells.

This «argumentation» seems extremely weak to us – much weaker than of my own. At least, I rely on Holy Scripture and on Aristotelian logic. She just peeps with sweet impulsiveness: «But at the beginning this may have been different».

Such a «defense argument» is used in court by lawyers, when they are unable to provide any substantive arguments. Defense grasps at a straw like a drowning man, but it turns out to be too unreliable to support the weight of evolutionary pseudoscientific speculations.

I hope Karin Moelling will not be offended, but here I suspect her of a purely religious way of reasoning (being a priest, I do not consider this a vice at all, and therefore this remark can be regarded not as criticism, but as a praise). This is faith, based on the godless dogma of the non-existence of the Creator.

* * *

It is noteworthy that the Karin Moelling's faith (like any other) is based on authority – but not of the Divine Revelation –of the human mind: «A start has to be simple – Charles Darwin thought so too, but not all of my colleagues agree with this» [p. 196]

Darwin, of course, is the highest spiritual authority, a «greatest prophet» among evolutionary circles (although, oddly enough, **not all** of Professor Moelling's colleagues agree with some of his statements). Respectful references to his opinion are found repeatedly in the book.

Let us give an example: «Even Charles Darwin warned of “nucleases” (though he did not use that term), predicting that under the conditions we have today on our earth, the origin of life **cannot be repeated**. It would be too hostile here. Nucleases are “hostile”. Furthermore, **we will never know** what kind of conditions initially existed on our planet. But Darwin also said that one cannot exclude the possibility that all living entities on earth may have a single precursor as their origin. **Perhaps** the viroids?» [p. 203].

The authority of Darwin is once again exposed as an absolute, and again, not at all in a scientific, but completely religious content. The substantive discussion is pointless here. «Perhaps the viroids», but «perhaps» not. This «we will never

know». If life, as evolutionists suggest, arose naturally, it is already «cannot be repeated». Therefore, for an honest science, this topic is closed!

Charles Darwin understood this, Karin Moelling understands this. But all the same, the myth of some kind of «first common ancestor» of all living beings is stubbornly repeated again and again. Belief in such an ancestor-viroid is no more thorough and no more «scientific» than faith in the independent creation of all kinds by the Lord God. The realities of the origin of life on earth billions of years ago (according to the author's version) **are as inaccessible** to our empirical research as the realities of the biblical six days.

Also, the hypothesis about some incomprehensible (miraculous?) way cells were formed from viruses (and into men) in the result of evolution can be accepted only for granted.

8. On the hypothesis of the «evolutionary origin» of the cell

The evolutionary version of the origin of the first cell implies that it was formed from some simpler elements. But there are only viruses below the cell in terms of complexity of the genetic structure. Therefore, in the process of evolutionary formation of a cell, two stages are usually distinguished.

The first stage: the formation of cells from a more primitive organism –that is, from a virus.

The second stage: amplification of an existing cell's structure by capturing of genetic elements external to it – that is, again viruses (or small bacteria).

Karin Moelling believes that both of these possibilities have been realized in the past. Let us follow the course of her reasoning.

8.1. Did the cells come from viruses? Some difficulties of the hypothesis

Professor Moelling presents a «scientific» version of the origin of the cell. According to this hypothesis, in the beginning there were viruses, but there were

no cells yet: «So far we have not discussed where the first cells came from. They are referred to as LUCA, the last universal common (or cellular) ancestors» [p. 70].

Karin Moelling raises the question radically: «Did the viruses not only supply the nuclei but, possibly, the whole cell?» [p. 70].

As we see, the issue of «nuclei supply» has been resolved for the author and cannot be doubted (we will examine this topic in more details in Section 8.2.). It is about the formation of cells from viruses. But this is not enough.

A fact or a guess?

Viruses are declared not only participants in the creation of the cell, but evolutionary «precursors» of the cell: «The giant viruses... strengthen the **suspicion** that viruses could be **precursors** of cells. If LUCA was a virus then it should be named LUCAV, V for virus, as **proposed** by Eugene Koonin from the NIH, Bethesda, USA» [p. 70]

This «proposal» by E. Koonin is actually a «suspicion» – an original hypothesis, and far from generally accepted. Frau Moelling, by the way, cites the authoritative opinion of Manfred Eigen, who «does not believe» so.

Karin Moelling herself writes with conviction, even categorically: «Viruses have certainly contributed to building cells. This is indeed a **hard fact** and no **speculation**» [p. 25].

No, this is not a «fact» and, moreover, not a «hard fact». This is a speculative improbable assumption, or rather, pure speculation.

Size

There is no logic in the following argument.

Karin Moelling writes: «Are the bacteria blown-up viruses? Newest analysis **supports** this notion, because there is such a broad spectrum from tiny viruses to giant viruses; the latter are even bigger than some bacterial cells» [p. 70].

However, from the remarkable fact that some viruses may be larger than some bacteria, it does not follow in any way that some of them are precursors of

others. So, large fish (sharks) can sometimes eat mammals, and large mammals (bears) are able to hunt fish. But the size of certain individuals does not in any way testify to the antiquity of their genus, much less about who could be an «evolutionary ancestor» to whom. The virus remains the virus, the bacterium remains the bacterium, the shark remains the shark, and the bear remains the bear. So the mentioned analysis data **do not support** anything.

Noone has observed the evolution of the virus: how a small virus would become larger and more complex. Viruses are very diverse, in size they «can be much bigger than nanoparticles – or even much smaller» [p. 15]. However, the researchers did not record the dynamics of the viruses' growth. It seems that outside the host cell, any biological activity of viruses freezes, and they remain unaffected by any changes. And this, by the way, means that they, being outside the «host» cell, **do not evolve!**

Of course, the larger the biological object, the more complex and perfect it can be. But there is always an alternative: to consider the appearance of this virus as the result of the evolutionary complication of its smaller predecessors' structure– or as a result of the larger living creatures' degradation.

Let's draw an analogy. A sample of a mineral having even faces can form due to crystallization from a solution or from molten magma. But similar faces can result from the physical destruction of a monolithic rock. So, as a result of an explosion in a mining quarry, fragments of different sizes are formed: blocks, cobblestones, gravel, grains, dust. At the same time, new unexpected cracks appear in the blocks; in middle fractions – previously unbroken facets; small particles acquire other properties that they did not have before, being in the massif – plasticity in clay, friability in sand. Let this illustrative example from the field of engineering geology warn against the desire to talk about imaginary «evolution» from nanoparticles through middle fractions to macroscopic objects (as well as about «evolution» in the opposite direction).

There is, of course, a difference between the explosion in the rock mass and the «explosion» of the genome that occurred as a result of God's curse on the

pristine earth. Nevertheless, the curse of the earth by God is more like an «explosion» than an «evolution». And therefore, our analogy with the formation of faceted mineral particles as a result of an explosion is completely justified.

Such an explanation is more natural and organic than a fiction about the «billions of years» of the gradual transformation of viruses into a giraffe, blue whale, sequoia and other giants. Different types have different dimensions and varying degrees of structural and functional complexity. But this does not mean at all that large living beings descended from small ones.

Age

And here is the reasoning which supports the alleged «antiquity» of viruses: «The DNA of giant viruses can even contain rare sensitive single-stranded DNA regions, and some stretches of it are non-coding, that is, without genetic information for proteins. That makes them appear to be very ancient; indeed, their origin, as estimated by their discoverers, dates back 2.7 billion years» [p. 139].

If the researcher had a chance to believe that viruses had evolved into higher species of flora and fauna, this could lead him to recognize the illusion of their «antiquity». But it is entirely possible that in reality everything was different, namely: viruses appeared as a result of the curse of the earth by God. Then they are all the result of an instant decay, fragments from the «explosion». Their genetic information in some areas is simply erased, damaged – as is the case on old manuscripts, film or tape. And there were no billions of years.

The existence of upward evolution is not a fact. The recognition of such an imaginary «fact» indicates only the researcher's commitment to a certain ideological attitude. The evolutionary version is just one of the alternative forms of possible interpretation of facts.

«The direction of evolution»

Karin Moelling describes an interesting phenomenon: «The giant viruses harbor genes for protein synthesis. Protein synthesis is considered as the most

important privilege of living cells and completely out of reach for viruses. Thus, the discovery of giant viruses containing components of the apparatus for protein synthesis completely set aside our previous understanding of the world of viruses. These viruses do not possess the whole set of components for protein synthesis, so they are defective in that respect, but even so...! Did they **stop** evolving at some half-way point on the evolutionary road to becoming living entities like bacteria?» [p.141].

But why did they «stop»? Each species exists due to the fact that God determined him to be what he was created (or, more precisely, what he became as a result of the curse). What if the viruses have **lost** the ability to synthesize protein, and not «had no time to acquire it»?

The function of protein synthesis qualitatively distinguishes the cell from the virus. The inability of viruses to synthesize proteins indicates their defectiveness. No one has observed how anything perfect and elegant could come out of a flaw. Protein synthesis is an unimaginably complex function that has a clearly nonrandom origin. Therefore, the cell could not have come from a virus.

It is more logical to assume the opposite. An active function may sometimes be lost. A chronometer may stop working. An appliance may burn out. A water storage tank may leak. It is at least strange to see the stages of evolutionary ascent in broken watches, burnt out lamps and leaky buckets.

In the light of such examples, it is more natural to consider the virus as a defective or damaged gene structure, as a fragment of a cell. But not the other way around.

«Virophages»

The following curious phenomenon also does not confirm the evolutionary hypothesis: «Giant viruses can be infected by other viruses and allow their replication as real hosts. This property of giant viruses is highly exceptional. Normally, viruses infect cells – but these giant viruses can be like cells for other viruses, which in turn, after all, places giant viruses close to cells. Giant viruses are

“almost-cells”. The viruses of viruses are termed “virophages”, by analogy to the bacteriophages, the viruses of bacteria» [p. 142].

Of course, the fact that small viruses are able to infect not only bacterial cells, but also large viruses is noteworthy. However, this discovery does not prove in any way that giant viruses are the evolutionary ancestors of unicellular organisms. Such a conclusion does not follow from anywhere.

Our remark will become more apparent if instead of small virophages we put other destroyers, for example, an aggressive chemical. Nitric acid is detrimental to both small animals and large ones. However, it is not worth concluding from this that the former are evolutionary ancestors of the latter (or vice versa). The conclusion should be made differently: acid, like small viruses, simply acts in a harmful «all-devouring» way on a variety of living objects, including large viruses, and cell formations.

There is nothing surprising in the fact that some viruses can be «phages» in relation to other viruses. A predatory fish (pike) devours another fish (carp). A mammal (wolf) attacks another mammal (deer). These examples have nothing to do with evolution.

Giant viruses can be called «almost-cells» –not in an evolutionary sense, but only in their size.

«Ma-virophages»

We also learn about another phenomenon from the book. It turns out that one of the giant viruses, the «Ma-virophage», is «retrovirus for one host and a phage for the other host, a half-and-half» [p.142]; the author gives this curious fact the following assessment: «Thus it is an interesting intermediate of evolution» [p.142].

The conclusion does not follow from the properties. In order to draw such a conclusion, you just need to **believe** in evolution.

We will try to dispassionately evaluate the described situation. Two facts have been established: with one subject, the Ma-virophage has developed a

relationship as a predator to its prey, and it treats others kindly. How does it follow from this that the Ma-viophage is an «intermediate link of evolution»? For example, a frog eats mosquitoes, and has «peaceful coexistence» with mice. This does not mean that amphibians are an «intermediate of evolution» between insects and rodents.

As we have seen, none of the arguments given by Karin Moelling confirm her assumption about the origin of the cell from the virus.

8.2. Have bacteria and viruses been involved in cell creation?

Mitochondria

There is a widespread version among biologists that at some stage of evolution, bacteria entered into «symbiosis» with the cell, becoming a part of it and **turning into mitochondria**. Karin Moelling shares this hypothesis: «The mitochondria, which are **endogenized** and **degenerated** bacteria and can never leave the cell any more. They **gave** 90% of their genes away to the nucleus of the host cell. Some genes also **got lost**. The mitochondria kept only 300 genes from their former 3,000 genes. They became highly specialized, the powerhouse of the cell, supplying it with energy. Everything else that they need is supplied by the cell» [p. 69].

It is presented as an irrefutably established fact, as a sketch from nature, as a result of reliable research: «gave», «got lost», «became highly specialized»...

But on what grounds? After all, no one has observed such a process! – It seems that this description, stuffed with «exact numbers», was made solely on the belief that the cell «should» be formed as a result of evolution.

However, there is an alternative view.

Wasn't the cell **originally** created with mitochondria capable of fulfilling its function as a «powerhouse of the cell» and at the same time containing exactly three hundred genes necessary for this? But then all the figures, which frighten by

their imaginary reliability, – «90%», «3000 genes», «300», will turn out to be a perfect fiction. As well as fictional «endogenization» and «degeneration»

Chloroplasts

Another popular example from biology. Formation of chloroplasts in the cells of green plants is proclaimed to be an «achievement of evolution». According to this scenario, cyanobacteria were «taken up» by plants and «as chloroplasts have specialized in photosynthesis». Dr. Moelling writes about cyanobacteria, which «taken up» [p. 69].

But, maybe, nobody was «taken up»? Perhaps it was just that the Wise Lord, creating green plants, provided their cells with the ability to produce oxygen through the phenomenon of photosynthesis by using specially designed for this purpose cellular organs – chloroplasts?

Unfortunately, the explanation of natural phenomena using the hypothesis of the Intelligent Creator is not considered by evolutionists. Thus, they close the possibility of a more natural interpretation of many complex microbiological processes. Did photosynthesis also appear by chance, unexpectedly as a result of successful pirate capture of bacteria by cells?

Nonetheless, Karin Moelling states unconditionally: «Mitochondria are former bacteria, and so are chloroplasts in plant cells. Both of these symbionts are highly specialized and dependent on the host cell» [p. 140].

«Suppliers of nuclei»

Professor Moelling adds a third to these two examples. Being a specialist in evolutionary virology, she offers a new look at the role of viruses in the history of cell development.

Nuclear-free unicellular organisms, as you know, are called «prokaryotes», and microbes that have a nucleus are called «eukaryotes.» Evolutionists believe (for me it's not at all obvious) that the latter «occurred» from the former. For some reason, no one is considering the reverse possible scenario, according to which the

«prokaryotes» are the «eukaryotes» that have lost their nucleus. And few people say that those and other unicellular organisms could be created by the Wise and Almighty God simultaneously and completely independently. Moelling assertively raises the question: «Who **supplied the nuclei** to the eukaryotes?» [p. 69].

The answer to this obsessive question is unknown to anyone. But this does not prevent the author from expressing two versions at once. First: «There are virus candidates such as the **poxviruses**» [ibid.]. Second: «Another candidate would be a **pseudo-retrovirus** such as the hepatitis B virus» [pp. 69 – 70].

Thus, it is alleged that «viruses may even have supplied the nucleus for the first eukaryotic cells» [p. 318].

In fact, the evolutionary picture of cell creation is summarized by the following complex scenario. In some unknown way, prokaryotes were formed – nuclear-free cells. Regardless of them, nuclei came from somewhere – these were either «poxviruses» or “»pseudo-retrovirus”. As a result of the «successful introduction» of nuclei into the body of prokaryotes, ordinary cells were formed. Subsequently, in a similar manner, mitochondria and all other vital inclusions that make up the body of the microorganism penetrated and took roots in the cell.

This original version may seem attractive only at first (superficial) glance. In fact, it is completely unproven, purely speculative.

In fact, we do not know who was a «nuclei supplier». We don't even know if there was such a «supplier». But we are seriously offered to believe that the nuclei in all cells were formed from the viruses they captured. Therefore, the most complex unique biochemical function of the cell nucleus arose «by accident» and unexpectedly. For some reason, the invading aggressor was not expelled from the body of the cell and did not destroy it, but «legitimized» its presence in it (and in its offspring), which lasts for billions of years...

The most unbelievable thing is that this unimaginable plot was not a rare case in the history of the universe. On the contrary, each of the countless organisms that have a nucleus in their cell has been attacked at least once in the

same happy scenario: a virus that infects a cell suddenly becomes its nucleus. And in such a miraculous way, supposedly, all existing types of eukaryotes were formed.

It is easier to believe that beautiful palaces and temples appeared in Rome as a result of the invasion of barbarians; or the fact that the Dresden Art Gallery arose as a result of the bombing of the city by the British during the Second World War. This does not happen this way. The invasion of a foreign virus – phage – into the cell could not lead to the creation of a useful nucleus in it, just as barbarians and bombardments do not contribute to the creation of masterpieces.

It is not clear how the unexpected introduction of the virus into a bacterial cell could form a stable and harmoniously functioning viable microorganism. At least no one has yet seen how a virus invading a nuclear-free cell would suddenly become its nucleus.

* * *

We are offered to believe that both mitochondria, and the nucleus, and many other components of the cell were randomly created in it thanks to an unexpected entrance of viruses. Moreover, the cell not only did not die from attacks of these parasites, but was «enriched» with thousands of genes and useful mechanisms. From this, the cell, allegedly, has become more stable and productive. And most importantly – thanks to the capture of viruses, further evolution was carried out.

In our opinion this fantastic version cannot be taken seriously. It is so incredible that it cannot be accepted even to support the evolutionary hypothesis.

On what basis should we believe in random cell formation? Isn't it much more natural to recognize the presence of Wise Creator's harmony and expediency laid down in the structure of the cell and the complex way it functions at the creation?

Right away there is no need for the following considerations. Firstly, we will not need to consider the occurrence of each of the various constituent elements of

the cell as the result of a sudden unpredictable exposure to parasitic viruses. Secondly, we don't have to suggest that the formation of the first capable cell required billions of years of evolution.

8.3. Viruses and the “evolutionary tree”

Karin Moelling proclaims: «Viruses got here first!» [p. 14].

At first glance, the adoption of this statement should clearly define the foundation of the Darwinian «evolutionary tree». However, viruses are too diverse for this issue to be considered clear and established.

Relative ties of different viruses to each other are not known to us and, moreover, they are unprovable. For example, according to Karin Moelling, 93% of megavirus genes are not found in other species, so it is very difficult to classify them.

But this does not bother the researchers at all.

«Giruses» and «viroids»

Some virologists boldly put «giruses» (this name was received by gigaviruses discovered in 2013) below the three domains, at the bottom of the tree of life as common ancestor. They estimate the age of these viruses to be 2.7 billion years» [p. 146].

However, there are insufficient arguments for such a significant statement. We leave aside the not-so-obvious topic of age (we examined it in sufficient detail in Chapter 6). Let us ask a more fundamental question: why are «giruses» are placed «at the bottom»?

One who believes in evolution cannot but believe that there is a Darwinian «tree of life», and this tree must have some kind of genealogical «foundation». But this belief remains an unconfirmed hypothesis.

Karin Moelling draws the reader's attention to the topic of the «tree of life»: «Viruses located at the roots of the tree of life? More people think like that» [p. 146].

She herself, confirming the wobbliness of such assumptions, rejects this hypothesis and offers another alternative, albeit equally groundless: «But I believe more in viroids, because giant viruses are far too big for a beginning!» [p. 146].

Let's humor the author. We believe with her that at the origins of a hypothetical tree are the smallest of the viruses – viroids. However, as it turns out, this assumption does not shed any light neither on the origin of the remaining viruses, nor on their position in the hypothetical «evolutionary tree».

A huge distance also remains between viruses and bacteria.

Frau Moelling shows enviable flexibility in her evolutionary views when she writes: «The giant viruses could be incomplete bacteria, which are on their way to becoming real bacteria and stopped in a side branch and remained unfinished; or, alternatively, they could be **degenerated bacteria** that have lost some of their genes and their independence. In any case, the giant viruses are transitional forms between viruses and cells» [p. 146].

We would like to draw attention to the fact that the author, with all her competency, does not embark on determining conclusively: whether giant viruses are the result of ascending evolution (from viroids), or of a «lateral evolutionary branch», or are they degraded higher beings. She admits that the ancestors of viruses could be «degenerate bacteria»...

But there could be, strictly speaking, anything – right up to degenerated trees or degenerated giant theromorphs. Nobody knows for sure!

In any case, it remains unclear from the book whether «viroids» emerged from «viruses» or vice versa? And how could this happen?

The following significant circumstance is noteworthy. If we recognize that viruses appeared as a result of the destruction of the larger species' genome, then

viruses should be placed not at the «base» of the «tree of life», but above – above the species from which the viruses were formed. Then the Darwinian «tree» will noticeably change. It will be deprived of its lower (basal) part. The picture is rather strange, if not absurd: a «tree without a stump» hanging in the air.

But then above each «branch» corresponding to a separate species, new «shoots» appear – viruses that occurred by means of «regressive evolution» from this species. «Own» viruses generated by one's own organism can be depicted on a «tree» above homo sapiens as well as every flora and fauna representative.

«Ribozymes»

One of the sections of the book is called «First chicken or egg? – Neither nor!»

The biblical answer to this famous question can be formulated as follows. In the beginning there was God who created a chicken, capable to lay eggs by His blessing – that is, in the beginning there were both a chicken and an egg. In the «scarce» Soviet years, there was a common joke containing such an answer to this philosophical question: before (not what it is now!) there was everything – both hens and eggs...

Answer «Neither nor!» looks quite poor in this context.

But let's give floor to Karin Moelling: «Now there is a new answer to the question of which came first, DNA or proteins – a molecular-biological version of the well-known question about the chicken or the egg. The answer is simple: neither of them. It was RNA!» [p. 199].

We are again talking about an unknown object: what to put in the foundation of the evolutionary tree? The reason for the new version was the discovery of an RNA molecule that has catalytic activity and is able to cleave another RNA. Such molecules are called «ribozymes». This quite interesting discovery was awarded with the Nobel Prize in 1989. But the conclusions that ribozymes are evolutionary precursors of proteins are, to put it mildly, not convincing.

Here are two quotes:

«Yet ribozymes are so simple and versatile, so don't they appear **very ancient?**» [p. 198] «Protein enzymes... are orders of magnitude more efficient than catalytic RNA. Protein enzymes are the basis of our entire metabolism, in all our cells. But they came later» [p. 199].

Why «very ancient»? Why «later»? Who compared the age of ribozyme and protein? It seems that the building is being built on unsteady sand. At least, the author does not argue his opinion in any way, according to which «some ribozymes **developed** during evolution to protein enzymes» [p. 199]. It would be interesting to know in more detail, how did they manage to carry out such an impressive «transformation»?

«Common ancestors»

Karin Moelling believes: «phages and retroviruses have a **lot in common**. What a high degree of conservation there is, all the way **from phages to retroviruses!** It must mean that they are related and that this mechanism is of **great evolutionary advantage**» [p. 199].

The author is so passionate about the evolutionary idea that she does not care about the persuasiveness of her arguments and the logical connection between the premises and conclusions. Let us make a few comments.

Firstly, phages and retroviruses, in fact, do not have much in common. The former are made up of DNA, the latter are made of RNA. We know about this from Karin Moelling herself: «Did phage genomes originally also consist mainly of RNA, as in today's retroviruses? Most phages contain the more stable double helix of DNA» [p. 119].

Secondly, no «way from phages to retroviruses» is shown in the book. There is a serious suspicion that this is another misconception.

Thirdly, the conclusion about phages and retroviruses that «they are related» is unjustified. It remains the the author's assumption.

Fourthly, one can speak about «great evolutionary advantage» only by professing faith in evolution as a certain entity that has independent mind and will. In our opinion, this is a very strange and specific word usage.

Let's draw an analogy. Cats and dogs also have «a lot in common», but this does not mean there is a certain evolutionary «path» between them (cats to dogs or vice versa). This does not even mean that «they are related». No external similarity, as well as similarity in the structure of genes, can be seriously considered as a consequence of evolution and especially as a «proof» of its existence.

Karin Moelling notes: «The degree of similarity between these two different systems, the two seemingly distant worlds of phages and retroviruses, surprises me to this very day, and suggests a proof of their evolutionary relationship. Do they have **common ancestors?**» [p. 119]

What kind of «evolutionary relationship» can we talk about? Who has observed this «relationship»? Why does the author speak of imaginary evolution from RNA to DNA as easily as if it was an observable fact? This is an example of reasoning that does not correspond to scientific logic, but is hypothetical and completely unproven.

The hypothesis of the existence of «common ancestors» is the Achilles heel of all genetic calculations. It always remains an assumption, not confirmed by reliable observations.

To prove our claim, it is enough to conduct a thought experiment.

Suppose someone claims that the genomes of two different species are «related» or «have a common ancestor». Suppose that a genetic engineer was able to create an exact artificial copy of one of these genomes in his laboratory. The statement about the «kinship» of two natural species automatically extends to the artificially created genome (since it is identical with one of the natural ones). But we know about the artificial one that there are no related genomes. Thus, we proved, by the method of the contrary (*ab absurdo*), that the assumption of the

presence of «common ancestors» in different species cannot be confirmed with absolute certainty.

There are two well-known obstacles that stand in the way of accepting the possibility of the evolutionary «tree of life» – the almost complete absence of reliable «transitional forms» and «common ancestors». In fact, this means that the «tree» actually has neither connecting lines – «branches», nor clearly defined nodes – «forks». What then remains of such a tree?

Similar difficulties occur not only in revealing alleged family ties between the upper «branches» of the Darwin «tree», that is, between the higher (macroscopic) species of flora and fauna. As follows from the book by Karin Moelling, similar problems arise when trying to explore the basis of this «tree». Viruses and unicellular protozoa cannot be classified in simple diagrams or graphs.

The author poses unanswered questions: «How did evolution proceed – did small viruses become bigger and progress to becoming giant viruses and, further down the path, cells? This corresponds to an increase in complexity and size. Or is the opposite more likely – did loss of genes and regression lead to viruses? I believe the first is more probable» [p. 145].

After so confused reasoning, not only the path of evolution remains unclear for the reader, but also whether it happened at all. The facts say nothing about this. And their interpretation seems to depend entirely on the imagination of the researchers.

In any case, a comparative analysis of various viruses does not allow us to definitely and reliably state which of them should rightfully occupy their rightful place at the base of the Darwinian «tree of life». The more fundamental question remains unclear – what does this schematic «tree» have to do with the real picture of the emergence of animal and plant species.

9. The «further course» of evolution

It has long been noted that the hypothesis of the possible transformation of one species into another is the most vulnerable place in the teachings of Darwinism, since no one has observed such a macroevolutionary transition either in natural or in laboratory conditions. When a researcher accepts such a statement on faith, he always makes a logical leap from reliable facts to their unreasonable interpretation.

Of the many examples provided by Karin Moelling, we dwell on two that will help us illustrate the obvious failure of the evolutionary hypothesis.

9.1. How did the placenta appear?

Karin Moelling describes the occurrence of placenta in humans. We will not find fault with the fact that the placenta is part of the female body, not only a *Homo sapiens*, but also many other animals. Let us examine how this topic is stated from the perspective of evolutionary virology: «The most **surprising** consequence of a beneficial virus is the development of the human placenta by means of a retrovirus. It is because of a virus that humans do not have to lay eggs but can have embryos develop inside the body. ... The ability of a virus related to HIV to suppress the immune system allows an embryo to grow within the womb of the mother without rejection by her immune system. ... The similarity of the surface protein Env of HERV-W and HIV is striking. ... Thus, today what makes HIV a deadly virus led earlier during evolution to one of the biggest advantages of mankind, the development of the placenta» [p.130].

How simple, albeit «amazing»! The property of a «retrovirus» to influence the immune system supposedly gave rise to a new evolutionary stage: the appearance of placental animals. Previously, eggs were laid in sand or in a nest, and now mothers began to bear babies inside their womb. If you do not go into details of the restructuring of the entire physiology of the female body, you can even, without understanding, believe in this magical metamorphosis. But imagine a chicken that became infected with the virus and «decided» not to lay eggs, but to keep them in its womb: if there is one egg per day, then in one incubation period

its «pregnancy» will lead to swelling of the body, comparable to the size of mothers' body itself. Such chicken will simply burst and won't transmit its new «inherited from retrovirus» properties to the offspring. The picture is completely crazy and unrealistic.

Obviously, the «choice» of the method of production of offspring – laying eggs or prenatal pregnancy – does not depend on the HIV infection of the mother, but on something much more significant: on the predestination of each species to perform its reproductive function. It is absurd, and even blasphemous, to believe that the virus determines the most important function of the genus – the transmission of life to offspring.

God gave the commandment: *Be fruitful and multiply* (Genesis 1, 22). And from that moment, this commandment is carried out according to the law that is characteristic to each species (more precisely, the genus).

The Creator wisely established: to whom to breed by budding, to whom to spawn, to whom to lay eggs, to whom to bear cubs in a bag. To the human race, in particular, the Righteous Lord uttered such indisputable words addressed to our foremother Eve: *I will greatly multiply your sorrow and your conception; In pain you shall bring forth children* (Genesis 3, 16). I do not know if the Almighty God used «retroviruses» to carry out such commands. But it is obvious that viruses «on their own», without God, «of their own free will» (which they do not have!) could not have done anything like that.

I am honestly happy for the geneticists who managed to isolate the code element of the placental animals responsible for the intrauterine development of the embryo (honor and praise to them!). I can tolerate if someone obsessively calls this element of the genetic code «retrovirus» (but I warn them: ladies and gentlemen, you are leading astray many people who have trusted you!). However, I am not ready to believe in a fairytale about one frivolous female, who once accidentally became infected with a «retrovirus» and thanks to this laid the foundation for modern obstetric practice (this tale is stupid, vulgar and not at all edifying).

As a rebuttal of the mechanism of placenta formation described by Professor Moelling, one can propose the following consideration: if the aforementioned «retrovirus» is so similar to modern HIV, then why has not one of the AIDS-infected women in labor brought anything new to the activities of maternity hospitals? For example, has not started laying eggs again? Or has not grown a bag, like a kangaroo? Or was not like Zeus the Olympian who gave birth to Athena Pallas from his own head? Or has not invented a way to give birth painlessly?

Seriously speaking, it should not be about evolution, but about pathology, since not all HIV-infected (alas!) live long enough to give birth.

9.2. Viruses, wasps and caterpillars

The mechanisms of interaction of the «parasite» with its «host» are very diverse. Some of them are simpler; others are very bizarre and intricate. Professor Moelling describes her «favorite virus», the poly-DNA virus (PDV). It has the properties of both endo- and exogenous viruses and uses an extremely interesting mechanism of interaction with the host, which can be called the «triple union»:

«The viral DNA is integrated into the genome of the host, the mother wasp, and guarantees the production of new virus particles in its ovaries. Mother wasp secretes the eggs and, with them, the virus, and she injects all into the body cavity of caterpillars. Now the viruses release the 30 DNA plasmids with genetic information for toxins, which are produced and kill the caterpillar. This results in predigested food for the young wasps. This is a perfect reversal of roles: viruses with host genes and hosts with virus genes» [p. 131].

So, a wonderful form of symbiosis of wasp and virus has been described. It is noteworthy that another third, and not unnecessary, participant is added to this mutually beneficial alliance – a caterpillar, which behaves very strangely: «It is in mortal danger from the virus and the young wasps, but it still defends them against foreign invaders trying to attack their cocoons. Thus it helps its future murderers. This is sometimes called “**motherhood**” behavior. Perhaps the caterpillar can

postpone its death. Gene uptake by the caterpillar has indeed been proven, in 2015, as protection against other viruses» [p. 132].

Karin Moelling gives a very specific interpretation to this natural phenomenon of a peculiar sacrificial «motherhood»: «Such an unusual virus-host interaction, a virus half endogenous and half exogenous, may be **very old** in terms of evolution» [p. 132].

But ... it may not be «very old» at all (But ... it just may be not very old at all), or rather, not having any relation to evolution.

In fact, it is completely unclear how such a complex and finely tuned system could illustrate evolution. In our opinion, the considered example should be strongly recognized as an argument proving the absence of evolution in this species of wasps and caterpillars.

In fact, how were three mindless creatures – wasp, virus, and caterpillar – able to form a sustainable, mutually beneficial life system? Such a harmonious interaction could not have developed by «itself». This is absolutely unbelievable. Here, in addition to the above-mentioned participants, an external «director» must act, which, moreover, is not only the «script writer», but also ensures the smooth operation of this triune ecosystem. By itself it would be able to develop let alone to maintain its stability for many centuries.

For its appearance and long-term functioning, the Wise Almighty Creator and Provider is needed.

* * *

Since we are talking about the death of poor caterpillars, this «very successful principle of Nature» [p. 132], was definitely given by God not at Creation, but at His curse of the earth and everything that inhabits it. These are the amazing fruits of the Lord's punishment of the forefather Adam: not the destruction of everything on Earth, but the creation of new complex and elegant

mechanisms of interaction. The Bible calls this the appearance of «*thorns and thistles*» (Genesis 3, 18).

In our opinion, in the pristine (before the fall) world, neither viruses, nor wasps did harm to anyone: neither one another, nor the caterpillars.

10. Conclusion. A disappointing result. But there is hope.

10.1. Microbiome and free will

At the end of our essay, I would like to dwell briefly on the moral and ethical content of Karin Moelling's book, which reflects her spiritual position.

So, the author describes the following picture. There is no Creator God. Life on Earth has originated spontaneously. The viruses that first appeared created all life, including humans. The human himself, from the outside and from the inside, is the carrier of microbes, of which there are 100 times more than the cells in his own body. At the same time, the human genome itself consists of «retroviruses», that is, from those ancient viruses that supposedly invaded our genome for hundreds of millions of years and, thus, formed it. Thus, at the physical level, a person is both a «cemetery» and an «incubator» of viruses.

Professor Moelling uses the concept of «microbiome». It consists of all «microorganisms that populate our body, within and without» [p. 123]: «bacteria, viruses, archaea, fungi, etc.» [p. 123]. Both male and female organisms are regarded as ecosystems: «Everyone has his own microbiome, like a personal PIN code» [p. 123].

Every citizen has an individual, unique to him only one microbiome, according to which he can be recognized as well as by fingerprints or by the iris of the eye. Something ominous is seen in the fact that such an analysis «could be used for forensic purposes, to identify a person by his or her individual microbiome»[p. 125].

This international topic has been studied for many years by the international «Human Microbiome Project (PMH)».

So virology is, in an unexpected way, associated with globalization.

* * *

At the same time, virology has direct access to psychology. Viruses are not only the «bricks» that make up all living things. They are «reasonable», act as conscious «engines of evolution», have «free will», the ability to achieve their goals. Viruses are «the most imaginative experimentalists» [p. 321].

But this is not enough.

It is the microbiome that turns out to determine the behavior of a person in those manifestations that are usually described in terms of freedom, feelings, sympathy or antipathy, duty, sacrifice, fidelity, love, spirituality!!!

Frau Moelling directs the reader's thought in this unexpected direction: «If our saliva reflects out unique genetic complexity well enough for diagnostic or forensic purposes, then I wonder whether a kiss, or close contact among family members, might turn out to be some kind of equilibration procedure, or an **adjustment of microbiomes** – how **unromantic!**» [p. 125].

Here, all human relationships are reduced to «adjustment of microbiomes». This is not just «unromantic».

This view does not recognize a person's ability to live of his own mind and of his own free will. This position is tantamount to the spiritual killing of Adam. How insulting and degrading our dignity should be considered conscious (or subconscious) fulfillment of the will of germs!

This position should be called not only murderous, but destructive. In essence, this is Satanism covered with pseudo-scientific phraseology. It is the devil who is the adversary of God and the *murderer from time immemorial* (John 8, 44). Atheists deprive God of the honor of being and being called the Creator, replacing the act of Creation with an evolutionary process. And they deprive a person of the right to consider themselves created *in the image and likeness of God* (Genesis 1, 26). They reduce everything progressive, creative, spiritual, honest, noble to

physiology and – like the apotheosis of mockery of human dignity – give viruses the ability to manage all this.

Karin Moelling writes quite cynically: «Does the microbiome influence attraction or rejection between people? Love?» [p. 125].

Here is the justification of Cain, Judah and Arius, all fornicators, sodomites and idolaters, all sinners and apostates. It's not the people who are to blame, but the viruses! No one can go against the will and desires of his own microbiome...

Dr. Moelling states openly: «Finally, if we are an ecosystem and if all the foreign genes contribute to our own genes, we may become philosophical for a moment and ask “What is a human being?” – “Who am I?” Can the microbiome even influence “free” decision?» [pp. 125–126].

God forbid anyone, even for a short time, to take such a terrible spiritual position! This anti-human philosophy consists in renouncing the Truth and God-given Freedom, renouncing responsibility to the Creator and depriving oneself of Eternal Life.

10.2. Tutti

Perhaps this assessment of Karin Moelling's monograph will seem to someone overly harsh and not entirely appropriate: the book, as my son Arseniy remarked, is «not theological, but scientific». Is it worth it to seek out its spiritual content?

However, we will not turn a blind eye to the fact that the author gives too many reasons for such criticism. We have repeatedly pointed out the doctrinal content of Karin Moelling's book (see, in particular, sections 3.3. And 7.3.). Let us confirm this again with her own bright recognition. To the question of New York publicist John Brockman: «What do we believe in, but can't prove?» – in the book she offers the following cliché: «Viruses got there first!». In the Preface, the author notes that some parts of her book are «written in a philosophical spirit». One cannot disagree with this. I am also convinced that it is necessary to discuss this

topic comprehensively. The fact is that the problem of the origin of life cannot be considered purely «scientific», it is at the junction of philosophy and theology.

As we noted, the emergence of viruses is associated with the curse of the Earth. In fact, they are **anti-life**: organic molecules that are not capable of full-fledged independent functioning, but parasitic on God's creation. Cancerous tumor, deadly epidemics of plague and «Spanish influenza», poliomyelitis, hepatitis and AIDS, various diseases in the animal and plant world – these are all viruses. There is no doubt that, although they are material beings, they are part of the arsenal of our incorporeal enemy – the devil, the *prince of this world* (John 14, 30).

Therefore, a great theological mistake would be to place this **undead** at the base of the **tree of life**. Viruses did not appear during the six-day creation of the world, but later as a result of the fall of the forefathers. They did not receive the blessing of God with which Heavenly Father gave the living species originally created by Him: *Be fruitful and multiply* (Genesis 1, 22)! It is for this reason that these parasites are not capable of independent full-fledged continuation of a kind.

And therefore, it is not fitting for them to be placed first.

Karin Moelling made this mistake, apparently not feeling how much the topic of the *Beginning* is not natural science, but theological. But in order to recognize the key meaning of the phrase «*In the beginning...*», it was enough to recall the first verses of the Old or New Testaments – the Books of Genesis or the Gospel of John (Genesis 1, 1 and John 1, 1).

A truly missed opportunity in youth: after all, when Karin was a graduate student in Zurich at her head, as we recall, «the Bible lay on the bedside table» [p. 99]. It seems that since then it has never been opened...

The result of this fatal mistake was the derogation of the Creator and, as a result, the involuntary exaltation of the devil. *He is a liar and the father of lies* (John 8, 44). And the whole philosophy imposed on him is also false, because it contains a perverted picture of the world. It comes down to recognizing evolution from a virus to a reasonable person, and a person is no more intelligent than a

virus. This is another evil devil's joke. But there is no place for Christ – *power of God and the wisdom of God* (1 Cor. 1, 24), – in this philosophical system.

The Orthodox view of the world is different: there is a Living God who created the universe. And He gave us the ability to know the heavens and the earth in order to glorify the greatness of the Creator, who trades about every creature - from the virus to man.

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Let me give you the last quote from the book «Viruses : More Friends Than Foes»:

«Organ players are familiar with the fugue following the prelude in Johann Sebastian Bach's music, which ends in a superposition of all voices and volume with the greatest possible number of pipes, the *tutti*. Here comes my *tutti* – a summary – on the viruses» [p. 320].

Here Karin Moelling used a wonderful image, but she didn't apply it quite successfully: she confused her improvised «pipe solo» with a classic fugue.

An organ is a church instrument that, in the tradition of the Christian West, was used primarily to glorify God. And one should not forget that J.S. Bach, the greatest of European composers, always turned his *tutti* not «in relation to viruses» or any other more respectable subjects, but exclusively to God Almighty, our Lord.

In the real *tutti*, not only the human voice (*Vox humana*) or the maiden voice (*Vox virginea*) sounds – they are very clear in the book. In the fugue must also be present the angelic voice (*Vox angelica*) and even the voice of Heaven – the voice of God (*Vox Celeste*). At least, these registers were invariably used in the masterpieces by the brilliant compatriot of Karin Moelling. And in her book, the Heavenly Voice is not only not heard, but deliberately silenced, which made «*tutti*» ... not work. Or, speaking more delicately, it turned out to be far from divine perfection.

With all my sincere benevolence to the author, I ask you to take this essay as a supplement to this serious flaw – that is, as an attempt to include the Divine register when considering a fascinating and contentious topic about viruses. I hope that my justification will be the desire for a positive answer to the question posed in the title: «Virology And Theology: More Friends Than Foes»!