

THE ORIGIN OF LIFE

From a Creationist Perspective

By Michael Weeks

2020

THE ORIGIN OF LIFE

From a Creationist Perspective

By Michael Weeks

2020

TABLE OF CONTENTS:

1. The Continuing Challenge	Page 2
2. The Enigma of Life	9
3. A Call to Realism	12
4. The Inescapable Presence	21
Appendix A – Book Reviews	25
Appendix B – Recommended Books	30
Endnotes	32

Bible references are from the King James Version

1

The Continuing Challenge

It is often said that all the conditions for the first production of a living organism are now present, which could ever have been present. But if (and oh! What a big if!) we could conceive in some warm little pond, with all sorts of ammonia and phosphoric salts, light, heat, electricity, &c., present, that a proteine [sic] compound was chemically formed ready to undergo still more complex changes, at the present day such matter would be instantly devoured or absorbed, which would not have been the case before living creatures were formed. Charles Darwin, 1871¹

Almost 150 years later, the secular world is still trying to explain how life could create itself. This challenge persists, despite decades of effort. The origin of life is the very foundation of evolutionary science, yet it has less evidence than any other theory. Evidence, it seems, has been replaced with imagination. Secular science has spent billions of dollars attempting to explain how the origin of life could have happened, both on Earth and in outer space. No answers have been found. Nevertheless, the search for Darwin's "warm little pond" continues.

This discourse will briefly explore the current state of evolutionary science concerning the origin of life. This is about the natural, chemical transformation of non-living matter into living organisms. Naturalistic scientists leave God out of the picture entirely. There is no room for divine intervention, miracles, purpose, or intelligent design. They believe that atoms assembled themselves into the necessary life components, started to replicate, created the biological information that controls the whole process, and then evolved into various cells and organisms. The key word is naturalistic. Today scientists refer to this as abiogenesis. Long ago it was thought of as spontaneous generation, although the two are not the same. Spontaneous generation was the belief that living organisms could suddenly appear, like maggots showing up on a dead animal. That was disproved by Louis Pasteur in 1862. Abiogenesis is about the natural development of nonliving things into living things. Biogenesis is sometimes confused with that, but biogenesis is the principle that living things will only originate from other living things.

As the subtitle says, I am a young-earth creationist. I will try to show that the creationist position – the biblical position – is the best alternative. If you happen to be an evolutionist, I ask you to keep reading. In preparing for this discourse, I read many more books on evolution than on creation. I have no problem studying the opposition, and I think evolutionists should do the same. An open and civil dialogue is preferable to the current hostility seen in the secular community. Young-earth creationists differ from old-earth creationists who accept the secular timeline. I will also refer to the intelligent design movement, which presents evidence for a creative mind behind the creation. Some of them will identify that mind as God, and others will

leave the question open to speculation. Intelligent design proponents avoid any references to the Bible. I should also say that I am not a microbiologist or geneticist. My training is in geology, but I am well-read on the subject and have much to share. This paper will survey the big picture and will not be too technical, although a general knowledge of science will help. If you want the detailed information you may refer to the books in Appendix B and the endnotes.

Research on the origin of life began in earnest in 1952, when Stanley Miller and Harold Urey conducted their famous experiment on amino acid production. At the time, researchers thought Earth's early atmosphere was a reducing mixture that contained water, ammonia, methane, and hydrogen. Miller and Urey set up an apparatus that combined those gases, and then sent an electric discharge through it to simulate lightning. The result was the production of a few amino acids. In the evolutionary view, amino acids form into proteins, and proteins form into RNA, DNA, and other things. However, the experiment is no longer considered valid by most thoughtful scientists, for several reasons:

- Evolutionists now envision the early atmosphere as containing carbon dioxide, nitrogen, water vapor, and some free oxygen.² It was not a reducing mixture, so the wrong chemistry was used for the experiment.
- Free oxygen would be harmful or even poisonous to life components.³
- Ultraviolet light from the sun would have been present, and certain wavelengths of ultraviolet light can destroy amino acids.⁴ At that time there was no ozone layer in the atmosphere to shield life from harmful rays.
- The amino acid products in the experiment remained inert and did not combine to form anything more complex.
- The experiment also produced nonbiological compounds. Normally those compounds could have combined with the amino acids to form lifeless and irrelevant compounds.⁵
- Perhaps the main objection to this experiment was the manipulation of the whole process in the lab. It required intelligent design to try to prove how something could have happened without intelligent design.

Since then, many attempts have been made to show how life could create itself, but all have ended in frustration. The simplest cell is extremely complex. Secular scientists, with all the world's technology at their command, cannot demonstrate a plausible scenario for the origin of life. Consider the following statements from prominent scientists. Starting in 1954, we will work our way up to the present. I am presenting these quotes in context, to prevent any claims of misrepresentation. As you read these please keep in mind that all these experts are hardcore evolutionists, and many are atheists. Some are honest about the magnitude of the challenge, but they still express their faith that the answers will someday come.

1. **1954** George Wald was an American biochemist who wrote about the origin of life in *Scientific American*, August 1954. He wrote eloquently about the task of making life:

One has only to contemplate the magnitude of this task to concede that the spontaneous generation of a living organism is impossible. Yet here we are – as a result, I believe, of spontaneous generation. It will help to digress for a moment to ask what one means by

“impossible.”...Time is in fact the hero of the plot. The time with which we have to deal is of the order of two billion years. What we regard as impossible on the basis of human experience is meaningless here. Given so much time, the “impossible” becomes possible, the possible probable, and the probable virtually certain. One has only to wait: time itself performs the miracles.⁶

2. **1960** G. A. Kerkut, British zoologist and physiologist, author of *Implications of Evolution*:

There are many schemes by which biogenesis could have occurred but these are still suggestive schemes and nothing more...It is therefore a matter of faith on the part of the biologist that biogenesis did occur and he can choose whatever method of biogenesis happens to suit him personally; the evidence for what did happen is not available.⁷

3. **1971** Jacques Monod, the Nobel prize-winning biologist, wrote *Chance and Necessity*. In it he wrote about the origin of life at the molecular level:

Let it be said at the outset that the problems we are about to tackle, those of the mechanisms of development, contain enigmas to which biology still has no answer...Nonetheless, the construction of certain molecular edifices is today fairly well understood, and the construction process, as I shall try to show, is veritably one of “molecular ontogenesis” in which the physical essence of the phenomenon becomes apparent.⁸

4. **1973** Leslie E. Orgel, of the Salk Institute for Biological Studies, wrote *The Origins of Life*. Although he had his own theory on origins, he recognized the complexity of the cell:

Living organisms represent the ultimate in miniaturization; the machinery of life is constructed on the atomic scale. The simplest living things are incredibly complicated; they are so much more complicated than anything in the nonliving world that even the largest modern industrial complexes seem relatively simple when compared with the smallest living cells...It is the enormous gap that must be bridged between the most complicated inorganic objects and these simplest living organisms that provides most of the intellectual challenge of the problem of the origins of life.⁹

5. **1982** Francis Crick, a British molecular biologist, was the co-discoverer of the DNA double helix structure. He wrote,

An honest man, armed with all the knowledge available to us now, could only state that in some sense, the origin of life appears at the moment to be almost a miracle, so many are the conditions which would have had to have been satisfied to get it going.¹⁰

6. **1986** Richard Dawkins, the prominent atheist, wrote about the origin of life in his book *The Blind Watchmaker*:

Does it sound to you as though it would need a miracle to make randomly jostling atoms join together into a self-replicating molecule? Well, at times it does to me too. But let’s look more deeply into this matter of miracles and improbability. By doing so, I shall demonstrate a point which is paradoxical but all the more interesting for that. This is that we should, as scientists,

be even a little worried if the origin of life did not seem miraculous to our own human consciousness.¹¹

A little later Dawkins wrote,

*The present lack of a definitely accepted account of the origin of life should certainly not be taken as a stumbling block for the whole Darwinian world view, as it occasionally – probably with wishful thinking – is.*¹²

7. **1997** Richard Fortey, a well-known British paleontologist at the Natural History Museum in London, wrote about the origin of life in his book, entitled *Life*:

*The early age of physics and chemistry predated life, and is still the province of speculation; so is the crucial question of how life began. This is nothing less than the transformation of matter itself: to forge the indifferent elements into vital systems that can regenerate themselves. The search for the secret of this transformation is still far from complete, and rendering its myriad steps comprehensible is like trying to summarize what is known of human anatomy on a postcard: the shape might be broadly correct but the detail is inevitably approximate.*¹³

8. **2000** Peter D. Ward, an American geologist, and Donald Brownlee, an American astronomer, are professors at the University of Washington in Seattle. They wrote *Rare Earth*, in which they say:

*There are still more questions than answers about life's origin on Earth. Yet the sophistication of the questions now being addressed by legions of scientists tells us we are well along in the investigation...Determining how the first DNA molecules appeared on Earth has been a very difficult scientific problem, and it is still far from solved. No one has yet discovered how to combine various chemicals in a test tube and arrive at a DNA molecule.*¹⁴

9. **2003** Paul Davies is Regents' Professor and Director of the Beyond Center for Fundamental Concepts in Science, among other things, at Arizona State University. In *New Scientist* magazine (179(2403):32, 2003), he said,

*Nobody knows how a mixture of lifeless chemicals spontaneously organised themselves into the first living cell. It may have been a straightforward sequence of unexceptional chemical processes, or a bizarre accident. The chief bugbear is that we have just the one sample of life to study—Earth life. And the mere existence of life on Earth tells us nothing at all about how likely or unlikely it is, or whether it has happened elsewhere.*¹⁵

10. **2003** Andrew H. Knoll, Fisher Professor of Natural History at Harvard University, wrote *Life on a Young Planet*. He showed that the popular theory of the RNA world of abiogenesis was not possible:

We are not close to solving the riddle of life's origins. Origin-of-life research resembles a maze with many entries, and we simply haven't traveled far enough down most routes to know which ones end in blind alleys. Yet, increasingly, chemists and molecular biologists have abandoned the early view that life originated by means of improbable reactions that came to pass only because vast intervals of time were available. Most now believe that life's origin (or

*origins—it could have happened more than once) involved chemistry that was both probable and efficient; there is a direct route through the maze, if only we can find it.*¹⁶

11. **2003** Simon Conway Morris, the British professor of Evolutionary Palaeobiology at the University of Cambridge, wrote *Life's Solution – Inevitable Humans in a Lonely Universe*. He was not friendly to creationists, but he has been described elsewhere as a Christian evolutionist. He responded to the idea that organic molecules could have come to Earth from meteorites and space debris, thus starting the abiogenesis process:

*To be sure, they could be the essential ingredient for getting life started in terms of basic supplies, but the question of just how inanimate became animate has proved stubbornly recalcitrant. It should all be rather simple, especially if you worship at the crowded shrine of self-organization. Yet, somewhere, somehow the right question has not yet been asked, and not for want of trying.*¹⁷

Conway Morris continued to challenge the common belief that organic compounds will automatically bond together:

*In other words, it doesn't really matter where such compounds form: what does matter is what happens next. So, too, with the next stage, that is, the assembly of such basic building blocks of life as the amino acids, sugars, and hydrocarbons, as well as the nucleotides that are fundamental to DNA. Such syntheses are widely regarded as inevitable, and images of warm ponds, seething volcanic springs, and massive thunderstorms rumbling across a deserted yet pregnant landscape are used to feed the imagination.*¹⁸

12. **2004** Eugenie C. Scott, former Executive Director of the National Center for Science Education, wrote *Evolution vs. Creationism*. She is, of course, extremely opposed to creationists. In her book she only wrote briefly about the origin of life:

*The origin of life is a complex but active research area with many interesting avenues being investigated, though there is not yet consensus on the sequence of events that led to living things. But at some point in Earth's early history, perhaps as early as 3.8 billion years ago, life in the form of simple single-celled organisms appeared. Once life evolved, biological evolution became possible.*¹⁹

13. **2009** Richard Dawkins wrote *The Greatest Show On Earth*, in which he provided his evidence for evolution. He wrote,

*This is a book about evidence, and we have no evidence bearing upon the momentous event that was the start of evolution on this planet. It could have been an event of supreme rarity. It only had to happen once, and as far as we know it did happen only once. It is even possible that it happened only once in the entire universe, although I doubt that. One thing we can say, on a basis of pure logic rather than evidence, is that Darwin was sensible to say 'from so simple a beginning.'*²⁰

14. **2009** Nick Lane, a British biochemist and honorary reader at University College London, wrote *Life Ascending – The Ten Great Inventions of Evolution*, where he said,

*We can never know how life really started on earth. Even if we succeed in producing bacteria or bugs that crawl out from swirling chemicals in a test tube, we will never know if that is how life actually started on our planet, merely that such things are possible, and perhaps more likely than we once thought. But science is not about exceptions, it's about the rules; and the rules that govern the emergence of life on our planet should apply throughout the universe.*²¹

15. **2012** Robert M. Hazen, the Clarence Robinson Professor of Earth History at George Mason University and a scientist at the Carnegie Institute's Geophysical Lab, wrote *The Story of Earth*. Although he argued strongly for the origin of life, he gave the usual admission:

*No one yet knows exactly how (or when) the ancient transition from a lifeless to a living world took place, but basic principles are emerging from focused research at dozens of laboratories around the world. Biogenesis must have occurred as a sequence of steps, each of which added chemical complexity to the evolving world.*²²

16. **2012** Addy Pross, Professor of Chemistry at Ben Gurion University in Israel, wrote *What is Life? – How Chemistry Becomes Biology*. Most scientists focus on the chemistry of this subject, but Pross focused on the living biology of a cell:

*In fact three core questions at the heart of the subject – what is life, how did it emerge, and how would one make it – remain troublingly unresolved...We don't know how to go about making life because we don't really know what life is, and we don't know what life is, because we don't understand the principles that led to its emergence. So, despite those spectacular advances in molecular biology over the past sixty years, the very essence of what biology claims to study remains troublingly obscure.*²³

17. **2015** Nick Lane also wrote *The Vital Question – Energy, Evolution, and the Origins of Complex Life*. He said,

*I am not concerned in this book with the details of primordial biochemistry: where the genetic code came from, and other equally difficult problems. These are real problems, and there are ingenious researchers addressing them. We don't yet know the answers. But all these ideas assume a plentiful supply of reactive precursors.*²⁴

18. **2016** Peter Ward, who was mentioned earlier, and Joe Kirschvink, professor of geobiology at the California Institute of Technology, wrote *A New History of Life*. They are hopeful of the RNA world model, in which RNA arose and then grew into the more complex DNA, with all its biological information:

*There is no problem in creating amino acids—life's most basic building block—in test tubes, as shown by the Miller-Urey experiment of the 1950s. But it has turned out that making amino acids in the lab is trivial compared to the far more difficult proposition of creating DNA artificially...Once RNA has been synthesized, the path toward life is open—because RNA can eventually produce DNA. But how the first RNA came into existence—under what conditions and in what environments—became the central problem facing those trying to work out the where and how of life's origin. There is no shortage of hypothesized sites where life may have begun.*²⁵

One word of clarification is needed here. In a real, living cell, RNA does not produce DNA. RNA is the servant of DNA. And RNA does not consist of, nor produce, the long, double helixes found in DNA.²⁶ In addition, anything made in the lab is completely controlled by the scientists, with selected components and special conditions. The lab does not imitate the open world of nature.

19. **2016** Sean Carroll, a theoretical physicist at the California Institute of Technology, wrote *The Big Picture*:

*Our goal is to offer a plausibility sketch that the world can ultimately be understood on the basis of naturalism. We don't know how life began, or how consciousness works, but we can argue that there's little or no reason to look beyond the natural world for the right explanations. We can always be wrong in that belief; but then again, we can always be wrong about any belief.*²⁷

20. **2019** Stuart A. Kauffman is a medical doctor, theoretical biologist, and complex systems researcher. He has been a professor at the University of Chicago and the University of Pennsylvania. In his recent book, *A World Beyond Physics*, he said,

*No one knows how life started. But many workers think that early life began with what they call "protocells." A protocell is imagined to be some kind of self-reproducing molecular system, perhaps coupled to a metabolism and housed inside a hollow lipid vesicle called a liposome. The self-reproducing system might be a collectively autocatalytic set of RNA, peptides, or both kinds of molecules.*²⁸

Many evolutionists employ the same kind of language when writing about the origin of life. They use words like "workers think," "is imagined," "perhaps," and "might be," as seen in Kauffman's quote above. However, this continual feeling of uncertainty is unbecoming of true science.

All the experts quoted here are popular today in the world of science. Other evolutionists have said similar things. These show what evolutionists, themselves, are saying. I intentionally left out quotes from the creation and intelligent design camps. Evolutionists recognize the lack of evidence for their origin of life, but that makes little difference to them. They often disagree on the details, but they agree on a naturalistic beginning. Their attitude is, "I don't know how it happened, but I know it happened." It is an unshakable faith.

Secular evolutionists have little choice. They must adhere to a naturalistic origin because there is only one alternative – the creation account in the Bible. They might refer to it as "special creation," but everyone knows that is the alternative. Even George Wald said so, in his *Scientific American* article. He said, "There is no third position."²⁹ In the secular world, the biblical alternative must be avoided at all costs, even if it makes more sense. It is a philosophical choice, not a scientific choice.

2

The Enigma of Life

Most secular scientists say there is a fine line between chemicals and a living cell. Both are composed of the same atoms, the same energy, and obey the same laws of nature, so it should be possible to show the progression from chemicals to cells. Perhaps someday, according to them, it should even be possible to create life. Because evolutionists think of life in terms of naturalistic properties, they say such a thing may be possible. Still, there is a great deal of confusion about the very nature of life.

Secularists will only accept that which is naturalistic. They reject the old belief in *vitalism*, where life is controlled by a vital principle that is distinct from all physical and chemical powers. Vitalism dates back to Aristotle and extended into the twentieth century. Christians will not endorse vitalism because it does not refer to anything from God; it is just a vague force. Secularists also reject any supernatural powers.

Addy Pross, an evolutionist and professor of chemistry, wrote,

*Until the paradox associated with life's emergence is resolved, we will not understand what life is. And, as final confirmation that [sic] understanding has been achieved, we will be able to translate that understanding into a coherent proposal for the synthesis of a chemical system that we would categorize as 'living.'*³⁰

Evolutionists have faith in the origin of life, yet they cannot define life. Sean Carroll, a theoretical physicist who promotes naturalism, had this to say:

*What is "life" anyway? Nobody knows. There is not a single agreed-upon definition that clearly separates things that are "alive" from those that are not. People have tried. NASA, which is heavily invested in looking for life outside the Earth, adopted a working definition of a living organism: a self-sustaining chemical system capable of Darwinian evolution.*³¹

Once again, the emphasis is on life as a chemical system. However, if something alive is only a chemical system, humans should be able to create life, or re-start life. Why not start from the top and work down, rather than starting from the bottom and working up, to find the secret of life? Why don't scientists take a living cell, gently kill it, and then re-start it with the necessary energy, if it is only a chemical system? That should be consistent with their worldview. They never do such a thing, because everyone knows that something dead cannot be made alive again.³² Some evolutionists might respond by stating that "chemical systems" refers primarily to the origin of life, although NASA's definition uses the term for living, biological organisms. They say that life, in any form, is basically a chemical system.

Different authors have described life in many ways, including the following:

- Organized complexity, with factories, pumps, rotors, motors, propellers, and scissors.³³
- The use of energy in various ways.³⁴ Life resists the natural propensity to decay. Life resists, at least for a while, the disorder of the second law of thermodynamics.
- Metabolism is related to energy, with respiration, ingestion, and assimilation.³⁵
- Reproduction.
- Self-directed movement.³⁶
- Self-maintenance.³⁷
- Reacting to the environment,³⁸ which can include seeking something good and evading something bad. There is a kind of evaluation and knowing, even for a cell.
- Most of all, there is complex, biological information within the DNA. Even bacteria have DNA. DNA controls the whole process within the cell.

Perhaps more could be added, but these are the basics for life at the cellular level. For animals we could add things like thinking, emotions, instincts, and goals (like finding a mate). For humans we could add the mind, with its vast powers of reason. There is also the sense of self. Every human has a strong sense of self-awareness and can only experience the world through that self-awareness. Christians would also add the spiritual dimension, with the soul and the awareness of God. All these things describe what we know as life.

In 1944, physicist Erwin Schrodinger wrote his famous *What is Life?* He summarized life this way:

*What is the characteristic feature of life? When is a piece of matter said to be alive? When it goes on 'doing something', moving, exchanging material with its environment, and so forth, and that for a much longer period than we would expect an inanimate piece of matter to 'keep going' under similar circumstances. When a system that is not alive is isolated or placed in a uniform environment, all motion usually comes to a standstill very soon...After that the whole system fades away into a dead, inert lump of matter.*³⁹

Proponents of the origin of life will often liken the formation of organic components to mineral crystals. Under specific conditions of the right chemistry, temperature, and pressure, crystals will form by combining various atoms together in regular, geometric patterns. Indeed, many proponents think that organic compounds got their start on crystal faces because of their propensity to link up atoms. A few minerals have been suggested for attracting organics, and a popular one has been pyrite (fool's gold). But crystals are not capable of "doing something." Once they are formed, they will start to decompose. They may decompose slowly, but they will decompose. Everything in the world tends toward disorder and randomness (entropy); this fact is guaranteed by the second law of thermodynamics. All of life fights this law by eating and drinking and adding energy to their systems. Inanimate molecules cannot do so.

In all my studies, I have not read an evolutionist saying that life is originating today, in the natural world. True, we might find organic molecules, including some amino acids, on the Earth and in carbonaceous meteorites, but they are not found "doing something." There is no natural assembly of amino acids into proteins and everything else that makes a cell alive. In the ocean we may find remnants of organic molecules from the decay of dead animals, but nothing new is

forming. Proponents have come up with many places where life could have originated, from hot springs to alkaline hydrothermal vents in the ocean, but all they find in those places are existent life forms. They find bacteria, archaea cells, and various multicellular animals like spiders or crabs, but they do not find anything *originating* in those sites. There is no unaided, biochemical evolution. Some evolutionists might say that time is needed, even on the scale of millions of years. More time, however, does not help. Time only increases the degrading effects of entropy. Proponents must deal with the fact that, if left to themselves, compounds tend to disassemble, rather than assemble. Evidently the theories of evolutionists are not born out in real life, so they must turn to the lab to explore life's origins. In the lab they can focus on the unobservable past, rather than the observable present.

Origin of life researchers Sara Walker and Paul Davies raised the issue that life may be different from raw chemistry:

The heart of the issue is that we do not know whether the living state is 'just' very complex chemistry, or whether there is something fundamentally distinct about living matter.⁴⁰

Thomas Nagel is a popular professor in the Department of Philosophy and the School of Law at New York University. Although he is an atheist, he has written about the improbability of chemicals evolving into life forms. He recognizes that life, with its complexity, consciousness, and values, must be more than mere chemical systems:

...I would repeat my earlier observation that no viable account, even a purely speculative one, seems to be available of how a system as staggeringly functionally complex and information-rich as a self-reproducing cell, controlled by DNA, RNA, or some predecessor, could have arisen by chemical evolution alone from a dead environment. Recognition of the problem is not limited to the defenders of intelligent design. Although scientists continue to seek a purely chemical explanation of the origin of life, there are also card-carrying scientific naturalists like Francis Crick who say that it seems almost a miracle.⁴¹

In truth, life is a miracle, because it cannot arise naturally. Life can only come from the supernatural Creator of the Bible. Something alive is much more than a chemical system. In all the world, which is composed of many kinds of chemical and physical systems, life is special. Life stands apart from everything else. Because of this, creationists have no problem introducing the spiritual dimension. Secularists demand that the spiritual be kept out of the discussion, but if naturalistic answers are failing then the spiritual should be considered. If something is logically obvious, it should be given due consideration.

Life always comes from life. Always. We can see this in two ways. First, life comes from God, who is Life. In the Bible God is described with many attributes, such as holiness and love, but He is also described as life. Only He possesses the attribute of life, in and of Himself, and He became the fountain of life for all of creation (Ps. 36:9). Our world is full of life in countless, beautiful forms, yet they all started complete and alive from the very beginning of creation. Second, since the creation, everything has spread out by reproduction. Likeness begets likeness, life begets life. In the biblical model life may still be a mystery, but it makes sense when it flows from the Creator. Because there is God, there is life.

3

A Call to Realism

A living cell is far too complex to arise by a natural self-assembly. In fact, the natural world prohibits even the beginnings of a self-assembly. This chapter highlights the science of the debate and shows why abiogenesis stretches the limits of credulity. There are strong scientific reasons that should compel the thinking person to consider the biblical alternative. In the real world, organic molecules do not continue to evolve. This is a call for realism within the scientific community, and within the secular world in general.

To begin with, we should differentiate the two types of cells – the prokaryotes and the eukaryotes. Prokaryotes are the bacteria and archaea, and are often composed of cytoplasm, ribosomes, plasmids, a cell wall, a nucleoid with some circular DNA, and for some, a flagellum for movement.⁴² The flagellum contains a motor and a whip-like tail to propel the bacterium. The motor can start, stop, and reverse in an instant. It is also quite fast.⁴³ This ability to move rapidly in response to the environment is a distinguishing feature of life. Evolutionists believe the flagellum assembled itself naturally but cannot explain how. Intelligent design proponents will sometimes use the flagellum as an example of irreducible complexity, meaning that all twelve or so components must exist simultaneously before the whole mechanism can work. This, they assert, implies design and purpose. Evolutionists deny this and believe that part of a motor will still do the job, although how that motor began remains a mystery.

The eukaryotes are much more complex and make up the tissues and organs of plants, animals, fungi, and algae. They have many characteristics, but the two main ones are a nucleus with DNA and sexual reproduction. They contain many organelles, which act like organs within the cell. Eukaryote organelles include the cell wall, cytoplasm, cytoskeletons, lysosomes, mitochondria, chloroplasts, smooth endoplasmic reticulum, rough endoplasmic reticulum, ribosomes, secretory vesicles, centrioles, peroxisomes, Golgi apparatus, and the nucleus, with a nuclear pore, nuclear envelope, nucleolus, DNA, and chromosomes.⁴⁴ A typical cell is like a city, with various factories and supply lines. It allows in necessary nutrients and expels waste products. Millions of chemical and energy reactions are continually occurring within your cells, all in perfect unison. In addition, each cell periodically replaces itself with a cell of exact likeness and function. No computer on earth comes close in complexity to a living cell.

Several challenges face the evolutionist when it comes to the naturalistic origin of life, which include the following:

- Assembling the correct organic molecules, in the correct environment, in the correct sequence, at just the right times.
- Preventing their decomposition.
- Arranging amino acids into proteins, RNA, and DNA.

- Creating the correct enzymes to speed up all the necessary reactions.
- Assembling nitrogenous bases, sugars (deoxyribose), and phosphate groups to form the nucleotides of DNA strands.
- Creating necessary membranes and cell walls, which allow in good things and prohibit bad things. This involves the creation of lipids for the membranes.
- Creating the proper and continuous flow of energy with electrons and protons.
- Along with metabolism, a cell must develop the ability, and the motivation, to divide and reproduce itself.
- A cell must resist the natural decay of the second law of thermodynamics.
- Along with the DNA, the necessary biological information must be present.
- Necessary organelles, like mitochondria, must be created.
- The cell must have a sense of uniqueness. It must know it is different from the environment and want to survive.

I have tried to list the most basic items, but other people might add to the list. The point is, a great deal of self-creation and change is involved, and evolutionists should be realistic. Adding time to the equation doesn't help, because time can also destroy. The above list is for the simple, prokaryotic bacterium, so the challenges must continue:

- The prokaryotic bacterium must evolve into the eukaryotic cell with a nucleus and double helix DNA.
- The duality of male and female must occur with the ensuing sexual reproduction.
- The chloroplasts of the plant world must be created, with the ability to produce oxygen.
- Two main kingdoms must exist – the plants and the animals. Animal cells must evolve and adapt to oxygen (which is normally harmful), use oxygen, and release carbon dioxide.
- Additional organelles must be created.
- Single-cell organisms must evolve into multicellular organisms, with differentiated tissues, organs, and hard skeletons.
- The brain must evolve.
- Consciousness must evolve.
- Humanness must evolve.

According to evolutionary thought, all these things were created by atoms bumping into each other. In the naturalistic worldview, because the spiritual dimension is excluded, everything must come from the random interplay of atoms. Some people even believe that human behavior comes from the interplay of atoms and natural forces.⁴⁵ Atoms become the basis for explaining anything. It is true that atoms can bond to form molecules, but they can also repel or separate under different conditions. Faith in a continual progression from atoms to life is very misguided. Regardless of where or how someone envisions the origin of life, it is unlikely the needed atoms could find each other and start the process. The natural world is far more dilute and uncertain. Some hardcore evolutionists, themselves, have called such encounters improbable. The following list will show why they are improbable.

- 1) There are times when some organic molecules might form in nature, but they are indifferent to life.⁴⁶ (Organic molecules are those based on carbon.) They do not move toward metabolism or replication. Although evolutionists think life is inevitable, there is no real propensity in nature toward complexity and life.
- 2) Even if molecules did move toward complexity, each step would have to happen quickly.⁴⁷ If they did not, the degrading effects of entropy would remove them. Molecules cannot sit in the warm little pond for thousands or millions of years waiting for the next step.
- 3) Often, each step would require a different set of circumstances. For instance, some reactions need heat and others need cold. In 2004, progressive creationists Fazale Rana and Hugh Ross pointed this out when they analyzed the alleged self-creation of the four nucleotides for RNA and DNA. They said, “For example, two nucleotide bases (adenine and guanine) require freezing conditions for their synthesis, while two other nucleotide bases (cytosine and uracil) demand boiling temperatures. For all four building blocks to take shape at the same time, the prebiotic soup must simultaneously freeze and boil.”⁴⁸ In 2016, evolutionists Peter Ward and Joe Kirschvink concurred: “In fact, it appears that there are many steps required in making RNA, and each step would require different conditions, or a different chemical environment.”⁴⁹
- 4) To date no researcher, in any laboratory, has created RNA. RNA seems to be the greatest goal and the greatest source of frustration. Evolutionists consider RNA the precursor to DNA and its necessary biological information. In real life RNA can only arise within a living cell. RNA will always remain fragile, complex, and beyond synthesis, even under very controlled laboratory settings. One evolutionist, Robert M. Hazen, wrote that because researchers have been unsuccessful, only evolution, itself, is able to create RNA. In a mocking tone he said, “Molecular evolution, and not intelligent design, is by far the fastest and most reliable path to achieving function. (That’s why we say if God created life, she’s smart enough to use evolution.)”⁵⁰ Of course, the Creator in the Bible didn’t need to use anything to create life.
- 5) Evolutionists usually envision a prebiotic setting in water, but water can break down large molecules (hydrolysis) and prevent certain organic reactions. For example, water can break down the nucleic acids necessary for RNA.⁵¹ Water can also prevent amino acids from joining to form proteins. This is a paradox – water is necessary for life, but water can also destroy organic molecules in non-living systems. Perhaps NASA should consider this in their search for extraterrestrial life, since they place so much value on finding liquid water beyond Earth.
- 6) There is a classic chicken and egg dilemma with protein and DNA. Each depends on the other. Sean Carroll, an evolutionist, put it this way: “When DNA gets copied, an important part of the work is done by proteins. But the proteins are supposed to be constructed using information encoded in the DNA. How could either one arise without the other already being present?”⁵²
- 7) Amino acid evolution is very tricky. Amino acids must have more than the correct chemistry; they need to have the correct orientation in order to be viable (homochirality). They need to have a left-handed form, rather than right-handed. The amino acids created in Miller and Urey’s 1952 experiment were half left and half right, but life only uses the left form. Amino acids must be left-handed, and sugars must be right-handed.

- 8) In living cells there are 20 amino acids, and researchers have tried to produce them. Researchers have met with some success and produced 10 of them. Those were the simplest amino acids.⁵³ Nothing could be done with them; they contained the correct chemistry, but nothing more. Creationists will stress that no protein has ever been assembled in the lab from amino acids.⁵⁴ Some proteins, like insulin, have been synthesized for medical purposes, but they are taken from genes in existing cells. In the origin of life, a myriad of proteins must arise and then interact with nucleic acids. According to evolutionists Ward and Kirschvink, there are about 1,000 nucleic acids and over 3,000 proteins.⁵⁵ Those numbers are probably very conservative.
- 9) Once proteins are formed, each protein must also fold itself into the correct three-dimensional shape in order to link up with other components and function correctly. Each protein has a particular shape. This is not about building larger molecules but about functions within the cell. Proteins have jobs to perform. In the origin of life, all evolving cell components would have to fit each other exactly, like pieces of a puzzle. A multitude of perfect fits is hard to explain apart from a Creator. In living cells, a slight change in the folding process can turn a normal protein into a disease.⁵⁶
- 10) Oxygen is an important factor to consider, because of the harmful effects of oxidation. Living cells are usually safe from oxygen, but components outside the cell are in danger of destruction. Because of this, evolutionists propose an early atmosphere without free oxygen so that cell components could survive. However, there is also the danger of ultraviolet radiation to consider. Without free oxygen there could be no ozone layer in the atmosphere, and ozone protects life from the harmful effects of short-wave ultraviolet radiation.⁵⁷ Either way, with more oxygen and little ultraviolet, or little oxygen and more ultraviolet, components of life could be destroyed. Today's atmosphere has 21% oxygen, but many creationists believe the atmosphere has always been rich in oxygen.
- 11) Researchers have not come close to creating any kind of cell membrane or cell wall. The membrane must contain and protect the whole cell package. It must allow the right materials to enter in and allow waste products to leave, by means of channels and pumps. It is composed of different lipids (fatty acids), proteins, and other molecules, and is beyond synthesis in the lab.
- 12) No evolutionist can explain how the prokaryotes evolved into the more complex eukaryotes. The two are quite different. Evolutionists believe a eukaryotic cell became the common ancestor to multicellular organisms. Nick Lane is one evolutionist who mentioned this dilemma. Writing in 2015, Lane said, "There are no known evolutionary intermediates between the morphological simplicity of bacteria and that enormously complex eukaryotic common ancestor to tell the tale. All of this adds up to a thrilling prospect – the biggest questions in biology remain to be solved!"⁵⁸
- 13) The defining feature of the eukaryotic cell is the nucleus, with its DNA, genes, and chromosomes. Bacterial DNA is circular but eukaryotic DNA is like a twisted ladder, with the classic, double helix. All the components and functions within the nucleus are wonders of design. A string of DNA is long and active; it continually opens, closes, and turns to activate thousands of genes every second.⁵⁹ Evolutionist Neil Shubin described the movement of DNA as "a finely choreographed dance."⁶⁰ Sadly, he refuses to acknowledge the divine choreographer.

- 14) One of the biggest questions in biology concerns the duality of plant and animal kingdoms. According to the evolutionary view, somewhere at the bacterial level, plant life arose. Cells absorbed carbon dioxide and started to produce free oxygen, and the increase in atmospheric oxygen somehow allowed the evolution of animal life. All this required the appearance of chloroplasts, chlorophyll, and the production of oxygen. Evolutionists must use some creativity to explain the first chloroplast. The currently accepted idea is a form of symbiosis, where a mutually beneficial relationship developed between two organisms. This evolutionary model assumes that a small, photosynthetic bacterium (the chloroplast) was engulfed by a larger cell.⁶¹ That cell could be either a prokaryote or a primitive eukaryote. Normally the larger cell would eat the smaller bacterium, but for some reason they developed a symbiotic relationship. This does not explain how the chloroplast became photosynthetic to begin with, it only tries to explain how the chloroplast became part of the larger cell. This model has some serious problems to consider. First, this process of engulfment (phagocytosis) is only seen in larger eukaryotic cells, like amoeba. In the real world, no bacterium is known that can engulf other cells.⁶² Second, chloroplasts do contain some circular DNA, but they are not like bacteria. Chloroplasts contain their own unique parts. Third, a typical plant cell can have between 10 and 100 chloroplasts,⁶³ so evolutionists must explain the origin of replication for cell organelles.
- 15) A similar challenge concerns the mitochondria, which are the primary energy producers of the eukaryotic cell. Because mitochondria have some circular DNA, evolutionists will say the mitochondria were also small bacteria at one time. Once again, in the same way as the chloroplast, a mitochondrion was engulfed by a larger cell and was accepted into a symbiotic relationship. When one organism lives within another it is called endosymbiosis. A major problem with this endosymbiosis is the changes that must take place in the theoretical, smaller bacterium. It would have to lose 99.7% of its DNA material, which would kill a normal bacterium. It would also have to gain new inner features and new functions to become the cell's energy producer.⁶⁴ The changes required by evolutionists border on the magical. At present, neither chloroplasts nor mitochondria are in a true, endosymbiotic relationship in the cell because they do not have their own existence. They are simply parts of the cell. Furthermore, some evolutionists are forgetting the fact that plant cells possess both chloroplasts and mitochondria.⁶⁵ In the evolutionary view, this implies a multiple engulfment by larger cells, symbiotically, which is unrealistic.
- 16) Chloroplasts and mitochondria are only two of many organelles functioning within cells. Evolutionists rarely hint at those other organelles, but they probably assume many organelles were engulfed into an endosymbiotic arrangement. Otherwise, the origin of those other organelles is unknown. That, also, is unrealistic and untestable.
- 17) Enzymes are vital to a living cell because they cause or accelerate many biochemical reactions. Enzymes are composed of proteins and are only produced in living cells. Explaining enzyme evolution poses quite a challenge, especially since they are about two thousand in number.⁶⁶
- 18) At some point in the proposed origin of life, cells had to begin dividing. How did the whole process of asexual reproduction begin? If life is merely chemicals, why does it want to

maintain its existence? Moreover, how did the intricate process of sexual reproduction begin, with male and female, sperm and egg, chromosome recombination, and many chemical events along the way? How do cells, or primitive organisms, invent completely new concepts? Phenomena like these are more rationally explained with a Creator.

Much more could be said, but these show some of the basic evidence for the creationist position. Other creationists have gone into more detail, and their publications are readily available. The greatest evidence, by far, is the complex biological information found within each cell. Explaining the evolution of information from physical molecules poses the greatest challenge to the origin of life. This is the reason evolutionists tried (unsuccessfully) to find a solution using RNA, because they felt RNA would bring in the necessary information. RNA contains many of the important building blocks for information that DNA contains but is simpler in form. They thought information was found in the physical nucleotide components of DNA. Creationists point out that information – the real message – lies beyond the physical media within RNA and DNA. The following should demonstrate this, in a simplified way.

The information stored in the DNA molecule controls all the components and functions within the cell. According to intelligent design scientist Stephen C. Meyer, information equals knowledge.⁶⁷ DNA knows exactly what to do with each component. Under that control, proteins perform thousands of functions, even within the simplest cells.⁶⁸ When the cell replicates, that knowledge is replicated as well. Werner Gitt, a creation scientist, expressed it this way:

The question “How did life originate?” which interests us all, is inseparably linked to the question “Where did the information come from?”...Anybody who wants to make meaningful statements about the origin of life, would be forced to explain how the information originated. All evolutionary views are fundamentally unable to answer this crucial question.⁶⁹

Gitt wrote two helpful books on biological information: *In the Beginning was Information* and *Without Excuse*. In the first book he offered a theorem expressing his conviction:

There is no known law of nature, no known process and no known sequence of events which can cause information to originate by itself in matter.⁷⁰

Matter can carry information and codes, but it cannot create them. Matter is random and variable, so information cannot originate from the physical atoms and molecules. Matter is only the means used by the sender of information and codes. For creationists and proponents of intelligent design, the vital thing about information is that it flows from *thought*.⁷¹ It flows from a mind.

Dr. Gitt mentioned some features that describe information:

- There must be a sender, and thus, a receiver.
- The sender uses volition, or free will.
- Any chain of information must come from a mental source.
- Information is not material, but it requires material media for storage and transmission.
- Information is a prerequisite for life.

- The sender is endowed with an intelligent mind.⁷²

That mind, from the creationist perspective, is the God of the Bible. Naturalistic evolutionists understand this and resist with all their effort. Even so, if a person considers the evidence, apart from evolutionary dogma, he or she might acknowledge the truth. Biological information in the nucleus is so complex it is difficult for humans to fully comprehend. Jonathan D. Sarfati is a creation scientist who wrote about DNA in his commentary on Genesis, *The Genesis Account*. Dr. Sarfati gave the following facts:

- The information within DNA is a language; a language known by the cell. In fact, there are multiple languages on multiple levels within DNA.⁷³
- DNA information can be stored, retrieved, transmitted, and copied accurately.⁷⁴
- The information in DNA is carried out by its chemistry, but it does not arise from its chemistry.⁷⁵ Once again, it has a mental source.
- Its storage capacity is immense.⁷⁶

Even Richard Dawkins, the outspoken atheist, agreed with the last one. In 1986 he wrote against intelligent design in *The Blind Watchmaker*. He argued that life and its complexity could be derived from blind, unthinking processes, and yet he said,

*[T]here is enough information capacity in a single human cell to store the Encyclopaedia Britannica, all 30 volumes of it, three or four times over.*⁷⁷

Dawkins marveled at the complexity of biological information but refused to carry it to its logical conclusion. Very few evolutionists do. One famous atheist, philosopher Antony Flew, did change his mind because of the design and complexity he saw in DNA. Flew did not embrace Christianity, but at least he became a theist. Flew said,

*It now seems to me that the findings of more than fifty years of DNA research have provided materials for a new and enormously powerful argument to design.*⁷⁸

A powerful argument indeed. It is sad that Flew did not carry his logic further before he died in 2010. Many creation scientists have excelled at providing evidence for the design in DNA, including John C. Sanford. Sanford wrote *Genetic Entropy*, which detailed the human genome. A genome is the total makeup of an organism's genetic parts.⁷⁹ Since Sanford's focus was on the human genome, evolutionists might say I am cheating by shifting to humans. The human genome is much more complex than the bacterial genome. Still, the genetic information in bacteria is complicated, specific in function, and shows many of the same features as that in humans. Evolutionists cannot duplicate the information in bacteria and cannot explain where that information came from. In addition, the genetic information in any organism is decaying over time, hence the name of Sanford's book. Any organism will increase in entropy, or disorder, over time. It is impossible for bacterial information to evolve and improve through time until it reaches the human level. Cells cannot *create* new information; they can only lose information. If evolutionists cannot explain information at the bacterial level, they certainly cannot explain it at the human level, in a naturalistic way.

Sanford agreed with Dawkins that the information in DNA could fill many encyclopedias, but he said the real complexity in DNA goes even farther, with intricate machines and multiple, overlapping codes and routes. He said the genome “has genes that regulate genes that regulate genes.”⁸⁰ Dr. Sanford expressed it this way:

*The bottom line is this: the genome’s set of instructions is not a simple, static, linear array of letters – but is dynamic, self-regulating, and multi-dimensional. There is no human information system that can even begin to compare to it. The genome’s highest levels of complexity and interaction are probably beyond the reach of our understanding, yet we can at least acknowledge that these higher levels of information exist.*⁸¹

Human beings, with all their combined intelligence, resources, and laboratories, can barely understand the complexity of biological information, yet they insist it all was self-created by mindless atoms and natural forces. Naturalistic researchers have spent 68 years trying to prove the origin of life, and they have not succeeded. One might ask how many billions of dollars and how many careers are worth the effort. Only the evolutionary sciences allow this kind of waste. With the money evolutionists spend on origin of life research we could provide clean water for the peoples of the world. We could benefit humanity, instead of funding unbelief in the Bible.

The end result of origin of life research is that humans cannot create the components of life, let alone life itself. If life is just a chemical system, researchers should have had different results. To make matters worse for the researchers, they have often manipulated the experiments to gain a better outcome. Recently some intelligent design scientists, including Stephen Meyer, wrote *The Mystery of Life’s Origin*. These scientists pointed out ways that researchers have controlled origin of life experiments, including the following:

- Deciding which chemicals to use.
- Purchasing pure chemicals from a chemical company.⁸²
- Mixing the chemicals in controlled (and thus unnatural) conditions.⁸³
- Ignoring any by-products that might hinder the desired result, even though those by-products and reactions could occur in the natural world.
- Controlling environmental factors, like oxygen or ultraviolet light, in order to prevent degradation.⁸⁴
- Purifying products along the way to aid their progress.⁸⁵
- Repeating the experiments until the desired results were obtained.
- And so forth.

Researchers who obtain some semblance of a desired result will publish their results in scientific journals. The popular media then spreads the news to the public, often with misleading headlines of evidence and proofs. It becomes evolutionary propaganda. Those researchers may then receive fame and the funding which follows, so for many it can be a selfish endeavor. Even though experiments are carefully controlled by the researchers, their results have been meager. Evolutionists tend to downplay this fact. Furthermore, researchers have not made anything that could even partially progress toward a living cell. That will never happen. Many scientists know that everything necessary for life must come from life itself. Each part and each cell must come from its own likeness.

Some evolutionists try to evade the problem by promoting panspermia – the belief that life on Earth came from outer space. Proponents have included Sir Fred Hoyle, Francis Crick, and Leslie Orgel. In 2008, even Richard Dawkins suggested it as a possibility.⁸⁶ Panspermia has a couple of possible routes: either amino acids and other components arrived here on meteorites, or intelligent aliens arrived here and seeded the earth with the necessary components. Very few evolutionists have admitted the obvious question with this view: How did the origin of life occur elsewhere, in regions unseen? Panspermia simply pushes the origin problem somewhere else. Almost all evolutionists believe that life can evolve on other planets, but they don't know where or how. No indications of life have been found in our own solar system, so proponents must place their hope farther out in space. Organic molecules found on meteorites are not life and they remain inert. They contribute nothing to the evolutionary hope. As for aliens arriving here to seed the earth, there is currently no evidence for intelligent life in outer space. Any belief in life beyond Earth remains a matter of faith.

I will close this chapter with a quote from Charles Darwin, who seemed more reasonable than most of his followers. Darwin once said,

*I have steadily endeavoured to keep my mind free so as to give up any hypothesis, however much beloved (and I cannot resist forming one on every subject), as soon as facts are shown to be opposed to it.*⁸⁷

Creationists have consistently shown facts opposing the naturalistic origin of life. There are a multitude of scientific reasons to abandon it and consider the alternative. When it comes to the origin of life, evolutionists have based their hypotheses on speculation and not on science. In light of this, perhaps some soul-searching is in order. Part of rationality is accepting the truth and remaining open to better options. We know this may be hard, since it can involve a person's cherished beliefs, or even a person's career. Drastic changes are hard to make, but they are worth it when a person seeks the truth. It can be liberating. In a respectful manner, creationists and intelligent design proponents are asking the secular world to be realistic and accept the facts.

4

The Inescapable Presence

Cells cannot slowly assemble themselves, and even if they could, they cannot function and live until all the parts, and all the biological information, are present and working in unison. Everything in the cell works together as a unified whole. From a young-earth creationist perspective, everything in life speaks of deliberate design. Evolutionists also recognize design in nature, even if they deny the designer. Richard Dawkins said,

*Biology is the study of complicated things that give the appearance of having been designed for a purpose.*⁸⁸

Stating that life only has the “appearance” of design is an evasion; it is denying the obvious. Life looks designed because it is designed. If there were no design in the cell researchers would have no basis for trying to synthesize anything, but they do try, again and again. They strive to duplicate a component in the cell because that component makes sense. It possesses a form and a chemistry that intelligent human minds can understand, at least to some degree. Each component – each protein, nucleic acid, lipid, organelle, and everything else – has a design that is a marvel of engineering, and each component carries out its role continuously. Everything is well-organized and efficient. Within the cell we see a myriad of moving parts, and beyond the parts we see a purpose. Just as a car engine has a purpose, the entire cell has a purpose as well. The cell needs to live and fulfill its design.

The designer, of course, is the God of the Bible. No other (invented) god will do. Most other religions will yield to the evolutionary worldview. Islam has a blend of evolution and events borrowed from the Bible. Although Islam calls Allah the creator, for all practical purposes, Allah is out of the debate. The real conflict is between evolution and the Creator in the Bible. No other gods are involved.

Since the conflict is between evolution and God, it is strange that many professing Christians are evolutionists. They appear to have divided loyalties. A good example is the Roman Catholic Church, which accepts evolution as the way that God created. Practically speaking, theistic evolution is no different from atheistic evolution and impresses neither atheists nor creationists. Then there are progressive creationists who accept the secular time frame of billions of years. They are also called day-age creationists and old-earth creationists because they equate each day in Genesis 1 with long ages. Secular science believes that prokaryote cells evolved about 3.8 billion years ago, thus progressive creationists accept that date for the first appearance of cells.⁸⁹ They also accept the secular order in which life forms appeared, but try to say that God created them all. The other main camp is the intelligent design movement, which also accepts the secular time frame. The intelligent design movement has followers ranging from agnostics to Christians

and tries to point out why a strict naturalism will not work. They say there must be an intelligent mind behind life, although they refuse to identify that mind in their writings.

All old-earth views tend to share common features. Atheistic evolutionists believe that cell components arose naturally, part by part, over a great deal of time, while many old-earth Christians believe that God introduced cell components, part by part, over a great deal of time. The time frame and basic order is the same. For old-earth Christians, God works within natural laws and physical limitations.⁹⁰ In other words, God will not do something until the natural conditions are right. Progressive creationists do not usually hold to literal miracles for the creation, where God works beyond natural laws. The defining feature of any old-earth Christian view is time: God created everything over billions and millions of years. They accept much of what secular science proposes but try to work God in as the primary mover.

Young-earth creationists, like myself, stand in stark contrast to old-earth Christians. We accept the Bible as inspired by God, understandable to humans, and literal. “Literal” concerns the meaning of a passage – the passage means what its author meant it to say.⁹¹ Genesis is not poetry or allegory, but real history. The Bible begins with the reality of God: “In the beginning, God created the heaven and the earth.” God is necessary for anything to exist. The naturalistic faith in the self-creation of matter and life denies both science and reason. Creation scientist Henry Morris, in his commentary *The Genesis Record*, expressed it this way:

Although it is impossible for us to comprehend fully this concept of an eternal, transcendent God, the only alternative is the concept of an eternal, self-existing universe; and this concept is also incomprehensible. Eternal God or eternal matter – that is the choice. The latter is an impossibility if the present scientific law of cause and effect is valid, since random particles of matter could not, by themselves, generate a complex, orderly, intelligible universe, not to mention living persons capable of applying intelligence to the understanding of the complex order of the universe. A personal God is the only adequate Cause to produce such effects.⁹²

According to the Genesis account, God created everything in six normal, 24-hour days, through a series of fiat miracles. Initially, He did not use time, matter, or natural laws. What He envisioned in His mind He spoke into existence (Ps. 33:6,9, Ps. 148:5, 2 Cor. 4:6, Heb. 11:3, 2 Pet. 3:5, etc.). God said, “Let there be light,” and there was light. Because God is infinite and omnipotent, He created *ex nihilo* – out of nothing (Rom. 4:17, Heb. 11:3). Unbelievers can scoff all they want, but nothing is too hard for Almighty God (Jer. 32:17,27). According to the biblical view, God did not create part by part; rather, He created everything whole and alive. The exact manner in which things appeared is known only to God, but we know that everything was created quickly, complete, and mature. Each day of creation was a great flurry of newness and life. We can picture sea creatures appearing, spreading out, and swimming superbly. Right from the start they did what they were created to do. All their cells were complete, and all their DNA was present and working to perfection. The mind of God could create every cell, and every organism, in every environment, all together. It was just the opposite of slow and wasteful evolution. And God saw all that He had made, and it was very good (Gen. 1:31).

(By the way, you may notice that I refer to both scientific evidence and the Bible. Young-earth creationists do this often and without apology. Honest evidence and the Word of God will always work together.)

The creation account in Genesis says nothing about single-celled organisms. Plants appeared on the third day of creation, so we may assume that all plant cells appeared on that day as well. Both single-celled and multicellular organisms appeared at the same time. Although God created the right environment for each life form, creating plants before animals would ensure an atmosphere with oxygen. Two days later, on the fifth day, God created sea and air creatures, and on the sixth day God created land creatures. We may also assume that cells of a non-plant nature were created on those days. Since it was a perfect world, all life forms interacted in non-violent ways: there was no death, predation, disease, parasites, or harm before the Fall of Adam and Eve. All of life had a vegetarian diet (plants are not alive in the sense that air-breathing animals are alive), although many prokaryotes may have ingested things more elemental. As we all know by experience, the Fall later brought a curse upon creation and changed everything.

We might wonder why the creation account in Genesis is so brief. However, as with many things in the Bible, God told us enough to be understandable and logical, but He also left an element of mystery. All Christians will have plenty of questions when they arrive in heaven. This is good; it gives the believer something to anticipate in this life.

God is supremely creative. An evolutionary self-creation could not create all the wonders we see in nature today. The natural selection of evolution can only work for survival. It wants the most fit feature to survive and reproduce, but that has nothing to do with creativity. Our natural world abounds with variety, artistic shapes, amazing designs of sight and flight, and colors beyond belief. Many animals have beautiful features that have no survival value whatsoever. Jonathan Sarfati wrote *By Design*, a book which describes the evidence for design in nature. One of his examples is the fan tail of the male peacock. It spreads out over 180 degrees and displays unique feathers with brilliant colors. Researchers now know the female is more attracted to the male's mating calls. One seven-year study showed the male's tail does not attract the female and offers no evolutionary advantage.⁹³ It is simply beautiful. As Sarfati wrote,

*So the beauty of the peacock tail is consistent with an intelligent designer, for whom aesthetic as well as structural issues were important.*⁹⁴

Organisms on a microscopic scale also exhibit God's design and creativity. Cells may not have a visual beauty, but they have a design beauty. Creation scientist Jeffrey Tomkins, author of *The Design and Complexity of the Cell*, showed that cells are so well-designed they could not have evolved:

*What we normally observe at the whole organism level, we also observe at the cellular level – novel features and mechanisms in the cell appear fully formed and complete with no trace of any evolutionary precursor. Furthermore, the mechanisms and apparatus involved at the cellular level are always configured at the highest and most optimal level of engineering and efficiency – never halfway built or partially functional, as the evolutionary model would predict.*⁹⁵

My critique of evolution is intended to be positive, and not negative. It points to the Creator. I have tried to show more than evidence against a naturalistic origin of life; I have tried to show the evidence *for* God. The true nature of this conflict is either self-creation or the Creator. Evidence against one affirms the other. Creation scientists have shown that real, observable science affirms the Creator. Some unbelievers say that if God can't be seen then He can't exist, even though they believe things they can't see. But God is here, and He has other ways of revealing Himself.

God's presence is inescapable. Anyone with an open mind will see the hand of the Creator in nature; each of us is surrounded by His handiwork. Everything gives testimony to the Creator, so all those who deny Him are without excuse (Rom. 1:20). Secular faith in the origin of life will never be justified; it remains an empty dream. Young-earth creationists invite evolutionists of every breed to embrace the truth found in the Word of God. God also revealed Himself in His Word and in His Son, so His identity is known to the world. All have sinned against God, but His call to salvation still stands. Christ says, "Come to me..." (Mt. 11:28). Despite all the world's rebellion against God, our Creator still calls on us to come to Christ through faith.

He created all things with power, awesome design, and love, and He continues to sustain the creation, moment by moment (Col. 1:16,17). All of creation moves in concert with its Creator. God is the conductor and life is the symphony, always moving in beautiful ways. If God removed His sustaining hand everything would quickly fade into oblivion. It is not the power of atoms that gives life to things, but the power of God, the God who is always present. Why deny Him? Ultimately, those who war against God can never win; those who come to Him can never lose.

Thou are worthy, O Lord, to receive glory and honour and power: for thou hast created all things, and for thy pleasure they are and were created. (Rev. 4:11)

Appendix A

Book Reviews

After completion of this paper (in October of 2020) I discovered three more books that are pertinent to this topic. The best way to share from these books is by giving a brief review of each. The topic of the cell and its origin continues to be popular within every science camp. I will summarize three items within each book, along with my creationist comments, although more could be said of each book.

Faith vs. Fact – Why Science and Religion Are Incompatible

This book was written by Jerry A. Coyne, Professor Emeritus in the Department of Ecology and Evolution at the University of Chicago, and was published in 2015. Dr. Coyne is an atheist and is intolerant of anything beyond strict naturalism. He is more accurately called an antitheist because he actively opposes any belief in God or gods. When Coyne refers to science, he means science that *he* accepts; in his mind, if people disagree with him, they are against “science.” He lumps evolution together with medicine, technology, and other observable fields of study. Thus, if people are antagonistic toward evolution, they are antagonistic toward science in general. He does not want any dialogue with religion; he only wants a monologue, one where science does the talking and religion sits back and listens.⁹⁶

First of all, Coyne criticizes theistic evolutionists almost as much as he criticizes creationists. He sees any theistic evolution as needless compromise, and creationists feel the same way. Perhaps the main distinction of theistic evolution is the concept of inevitability. If God is directing evolution, life must progress all the way to humans. Many theists will acknowledge the image of God in humans and view humanity as God’s greatest creation. Coyne believes nothing is inevitable and humans are nothing special. Coyne does, however, make some of the same observations that creationists have made. In chapter 3, “Why Accommodationism Fails,” he states that the processes of evolution, like natural selection and extinction, are cruel and wasteful ways for a God to create. A loving God would not create in such a manner.⁹⁷ Coyne is almost granting a courtesy to God by insisting that evolution is unguided and unpredictable. Although I am on the opposite end of the spectrum, I applaud what he says on this subject. He says a great and loving God would create all species exactly as described in Genesis.⁹⁸

Secondly, Coyne makes a few comments about the origin of life and holds to the usual process of abiogenesis. He does, however, make an unusual prediction:

As for the origin of life, we’ve made enormous progress in understanding how it might have happened beginning with inert matter, and I’d be willing to bet that within the next fifty years

*we'll be able to create life in the laboratory under conditions resembling those of the primitive Earth. That doesn't mean that it did happen that way, of course, for we'll probably never know. But reproducing such an event would falsify the religious claim that a natural origin of life is simply impossible without God. And the religious answer hasn't stopped the intense effort by chemists and biologists to find a naturalistic solution.*⁹⁹

Researchers have made progress in the sense of trying everything that can be tried, but not in the sense of real evidence for the origin of life. Coyne is optimistic, but optimism is not proof. He does not mention what actually goes on in the lab; there is no word about proteins, RNA, or anything else. He is merely skirting around the issue and declaring the standard evolutionary hope. What else can he do if he chooses to deny God? Moreover, no work in the lab, conducted by intelligent scientists with controlled procedures, can prove a completely “natural origin of life.” I, also, will make a prediction: Within the next fifty years evolutionists will be no closer to understanding life than they are today. Researchers will never create a living cell from scratch. Without God there is no life, either in nature or in the lab.

Thirdly, Coyne repeatedly raises the issue of faith and evidence. According to him, the debate is between religious faith and scientific fact, and reconciliation is out of the question. Theists do not employ evidence and reason; they just believe whatever gives them comfort. He defines faith as belief or trust in something without verifiable evidence, and he scoffs at revelation. However, if that is the challenge, creationists have no problem. We are motivated by the Bible, but we use science to prove our point. The methods of this debate are science versus science. Young-earth creation organizations continue to research important topics and have published many books about the scientific evidence for a Creator and a young Earth. For example, creation scientists have shown that soft tissues and carbon-14 have been found in many dinosaur bones, proving they cannot be more than a few thousand years old. Moreover, creationists have empirically shown the immense gulf between non-life and life. The origin of life cannot be observed, tested, or repeated, which places it in the same category as the first chapter of Genesis. Evolutionists must exercise just as much faith as creationists, although creationists have a Creator who spoke and revealed Himself. In the final analysis, creationists are the ones who uphold the facts – the realities of observable science, the trustworthiness of the Word of God, and the rationality that ties it all together.

I recommend Coyne's book simply as an exercise in apologetics. It reveals what the new breed of atheists are saying and shows why they deny anything supernatural. Christians should have answers for most of their objections, even if those answers fall on deaf ears.

The Stairway to Life – An Origin-of-Life Reality Check

The Stairway to Life was written by Change Laura Tan and Rob Stadler. Dr. Tan is an associate professor of biological sciences at the University of Missouri, and Dr. Stadler has been a scientist in the medical device industry for over 20 years. The book was published in March of

2020. They do not identify which scientific camp they come from, but they write like theistic advocates of intelligent design and are thus critical of a naturalistic origin of life. A recurring theme in the book is that cells can only come from cells. On page 201 they say the lack of evidence for abiogenesis is evidence for God. They have a high regard for God but never refer to the Bible, which puts them in the intelligent design camp. They also make one reference to C. S. Lewis. The book is similar to the third chapter of my paper, except they go into much more detail and demonstrate why abiogenesis cannot occur in the real world.

To begin with, Tan and Stadler offer insights into some research conducted by Dr. J. Craig Venter, a biotechnologist. In 2010 Venter and his team claimed to have created a synthetic cell that could self-replicate. They named it *Synthia*. For many people, this had implications in favor of abiogenesis. What Venter actually did was transplant parts from living cells and cause them to work together as a new cell. The team did not create DNA but used DNA from living cells. After placing the new DNA into the host bacterium, the new DNA took over. They used parts from four species of bacteria and one eukaryote (yeast) and controlled the whole process in the lab.¹⁰⁰ This project demonstrates the limits of science. Scientists can alter DNA in many ways, but they cannot create functional DNA from raw chemicals.

The next feature to highlight is the authors' stairway to life, which is 12 steps required for abiogenesis. Starting from the bottom, their steps are as follows:

- Formation and concentration of building blocks
- Homochirality of building blocks
- A solution for the water paradox
- Consistent linkage of building blocks
- Biopolymer reproduction
- Nucleotide sequences forming useful code
- Means of gene regulation
- Means for repairing biopolymers
- Selectively permeable membranes
- Means of harnessing energy
- Interdependency of DNA, RNA, and proteins
- Coordinated cellular purpose ¹⁰¹

Evolutionists usually focus on the first step, which is the formation of basic building blocks like amino acids, phospholipids, nucleotides, and so forth, but even making the first step is unrealistic. By means of scientific evidence, the authors demonstrate that each of these steps are too high. Rather than a series of steps, a more accurate picture of the evolutionary challenge is a cliff.¹⁰² The challenge is insurmountable. It is interesting that their subtitle is similar to the title of my third chapter, "A Call to Realism."

Lastly, they bring up evolutionary faith, which is something I mentioned in my paper and in the previous review. The authors say the evidence in favor of abiogenesis is abysmal, so those who promote it must do so with narrative and with faith. In the 1960s some evolutionists would use the word "faith" to describe their approach to hypotheses, but today evolutionists will shun

the word. Nevertheless, creationists and intelligent design people like Tan and Stadler will compare the theistic viewpoint with the naturalistic viewpoint and show that both are equally accepted by faith. Both viewpoints are about the unobservable past and must be accepted by faith to some degree.

I highly recommend *The Stairway to Life* to anyone interested in a short, informative book on abiogenesis. It is even sold by the Institute for Creation Research and Creation Ministries International. Besides offering solid science, the authors offer some food for thought about the issue of origins:

*Indeed, it is fundamentally important for us to know where we came from. However, it is even more important for us to know where we are going. If we don't know either, we will certainly make a mess of what lies in between.*¹⁰³

The Miracle of the Cell

The Miracle of the Cell was written by Michael Denton, a Senior Fellow with Discovery Institute's Center for Science and Culture. It was published in September of 2020, which may make it the most recent book on the cell and abiogenesis. Dr. Denton does not come across as any kind of theist, although he said life was either created by a Divine watchmaker or a blind Darwinian watchmaker. He does not refer to God directly. He also makes it clear he believes in four billion years of evolution. Denton is in the intelligent design camp but writes more like a naturalistic evolutionist.

First, Denton focuses on several physical components, like carbon, oxygen, and water, and how they contribute to life on Earth. The item that stood out to me was his description of water. Water is the perfect medium for life, especially on Earth, where the temperature is right for liquid water. No other fluid in nature could substitute for water because only water has the right physical properties for the functions within the cell. According to Denton, water is the universal solvent because it can dissolve substances and carry biochemicals in solution. Water is corrosive in the sense that it dissolves most chemical compounds and prevents them from linking up. This includes proteins and other organic compounds.¹⁰⁴ Denton does not take that observation farther, but water outside of the cell is a barrier to abiogenesis. Inside a living cell, however, water becomes an "active player" which enables many biochemical processes.¹⁰⁵ Water becomes part of the whole dynamic within a living cell.

Second is the topic of abiogenesis, which is the main thing I wanted to read. Denton believes in abiogenesis but admits the route from prebiotic soup to the cell is a mystery. He calls it "The Elusive Path."¹⁰⁶ Once again, we see the evolutionary faith come through. Denton mentions that abiogenesis research involves a series of steps, much like Tan and Stadler's stairway. The first step is the synthesis of the basic building blocks, like amino acids and nucleotides.¹⁰⁷ Then comes proteins, DNA, replication, the genetic code, and so forth. He says progress has been made on the first step but doesn't say in what ways. Denton then expresses the bigger picture, and is honest in his admission:

*Only work on the first step has seen substantial progress. How the other steps were accomplished in terms of known laws of nature is a complete enigma. The widely acknowledged reality is that within the entire corpus of twenty-first century science, there is no explanation. Science, it seems, has reached an impasse. The origin of life remains as arguably the biggest unsolved problem in science.*¹⁰⁸

Denton also quotes two scientists, Eugene Koonin and Artem Novozhilov, who expressed the same sentiment about the question of DNA evolution and the genetic code. They said we are asking the same question today that we asked 50 years ago, and we might also be asking the same question 50 years from now.¹⁰⁹ The answer remains elusive. Denton reveals his own position on the soup to cell mystery; he thinks scientists might discover new natural laws or unusual properties of matter that could provide an answer. Of course, such a position has nothing to do with science and is just a fleeting hope. Without God, evolutionists seek answers that will never be found.

Third is the nature of intelligent design itself. This book is supposed to be an intelligent design book, but Denton only makes vague references to design, fine-tuning, and a prebiotic blueprint. He does not try to identify who might be the designer. On page 112 he refers to “four billion years of evolutionary experimentation,” which sounds like the opposite of design. My biggest complaint about the intelligent design crowd is their refusal to identify the designer. I would only recommend *The Miracle of the Cell* because it is the most recent book on the subject, but I do not appreciate the book’s vagueness. Most intelligent design authors are vague. Some are Christians, but if they are true Christians, they fall short of what they should be saying.

Above everything else, Christians should exalt the God of the Bible. Evolutionists glorify natural selection, but Christians should glorify God. There should be no divided loyalties and no timidity. In most things, Christians should be out in the open, just like young-earth creationists. We love science, but we never compromise with secular science and we certainly are not trying to be popular. We are not popular. We do, however, hope to present evidence that might draw others to God and bring them into a better life. We want others to look to Him with saving faith. In Isaiah 45:22, our Creator said,

Look unto me, and be ye saved, all the ends of the earth; for I am God, and there is none else.

Indeed, there is none else.

Appendix B

Recommended Books

There are many books and articles written about the origin of life, yet it is curious that many authors on evolution will often gloss over the need for real evidence. For example, there is *Evolution – What the Fossils Say and Why It Matters*, by Donald Prothero. Prothero is a very harsh critic of creationists. In this book he gave his reasons for accepting a naturalistic origin of life, but nothing was solid evidence. For instance, he repeated the belief that “chloroplasts apparently started out as cyanobacteria” and came to live in larger cells.¹¹⁰ I covered this in number 14 of the third chapter. This is not seen in nature and is mere speculation. For him, something that is imagined suddenly become a “fact.” (Creation Ministries International has some good responses to evolutionists.) This is typical of books on evolution, although there are some books that are more careful and worthy of study. The following will show my top choices for books in the various camps, starting with the evolutionists.

EVOLUTIONISTS:

1. *The Vital Question – Energy, Evolution, and the Origins of Complex Life*, by Nick Lane, W. W. Norton & Company, 2015.
2. *What is Life?*, by Addy Pross, Oxford University Press, 2012.
3. *Mind and Cosmos*, by Thomas Nagel, Oxford University Press, 2012.

INTELLIGENT DESIGN PROPONENTS:

1. *The Stairway to Life – An Origin of Life Reality Check*, by Change Laura Tan and Rob Stadler, self-published, 2020.
2. *The Mystery of Life’s Origin*, by Charles B. Thaxton, Walter L. Bradley, Roger L. Olsen, James Tour, Stephen Meyer, Jonathan Wells, Guillermo Gonzalez, Brian Miller, and David Klinghoffer, Discovery Institute Press, 2020.
3. *Signature in the Cell*, by Stephen C. Meyer, Harper One, 2009.

PROGRESSIVE (OLD-EARTH) CREATIONISTS:

- Origins of Life*, by Fazale Rana and Hugh Ross, Navpress, 2004.

YOUNG-EARTH CREATIONISTS:

1. *The Design and Complexity of the Cell*, by Jeffrey P. Tomkins, Institute for Creation Research, 2012.
2. *By Design*, by Jonathan Sarfati, Creation Book Publishers, 2008.
3. *Evolution's Achilles Heels*, by Donald Batten, Robert Carter, David Catchpoole, John Hartnett, Mark Harwood, Jim Mason, Jonathan Sarfati, Emil Silvestru, and Tasman Walker, Creation Book Publishers, 2015.

ENDNOTES

1. Charles Darwin, quoted by Andrew H. Knoll, *Life on a Young Planet*, (Princeton, NJ: Princeton University Press, 2003), p. 73.
2. Stephen C. Meyer, *Signature in the Cell*, (New York: Harper One, 2009), p. 224.
3. *Ibid.*, p. 225.
4. *Ibid.*, p. 226.
5. *Ibid.*, p. 226.
6. George Wald, *Scientific American* magazine, "The Origin of Life," (Scientific American Inc., August 1954), pp. 46-48.
7. G. A. Kerkut, *Implications of Evolution*, (London: Pergamon Press Ltd., 1960), p. 150.
8. Jacques Monod, *Chance and Necessity*, (New York: Vintage Books, 1971), pp. 81,82.
9. Leslie E. Orgel, *The Origins of Life*, (New York: John Wiley & Sons, 1973), p. 31.
10. Francis Crick, quoted by Simon Conway Morris, *Life's Solution – Inevitable Humans in a Lonely Universe*, (Cambridge: Cambridge University Press, 2003), p.67.
11. Richard Dawkins, *The Blind Watchmaker*, (New York: W. W. Norton & Company, 1986), pp. 158,159.
12. *Ibid.* p. 166.
13. Richard Fortey, *Life*, ((New York: Alfred A. Knopf, 1997), p. 33.
14. Peter C. Ward and Donald Brownlee, *Rare Earth*, New York: Copernicus, 2000), pp. 61,62.
15. Paul Davies, quoted in *Evolutionists Say the Oddest Things*, "Origin of Life," (Powder Springs, GA: Creation Book Publishers, 2015), p. 45.
16. Andrew H. Knoll, *Life on a Young Planet*, (Princeton, NJ: Princeton University Press, 2003), p. 88.
17. Simon Conway Morris, *Life's Solution – Inevitable Humans in a Lonely Universe*, (Cambridge: Cambridge University Press, 2003), p. xiv.
18. *Ibid.*, pp. 45, 46.
19. Eugenie C. Scott, *Evolution vs. Creationism*, (Berkeley, CA: University of California Press, 2004), p. 26.
20. Richard Dawkins, *The Greatest Show on Earth*, (New York: Free Press, 2009), p. 416.
21. Nick Lane, *Life Ascending – The Ten Great Inventions of Evolution*, (New York: W. W. Norton & Company, 2009), p. 10.
22. Robert M. Hazen, *The Story of Earth – The First 4.5 Billion Years, from Stardust to Living Planet*, (New York: Penguin Books, 2012), p. 131.
23. Addy Pross, *What is Life?*, (Oxford, UK: Oxford University Press, 2012), p. 111.

24. Nick Lane, *The Vital Question – Energy, Evolution, and the Origins of Complex Life*, (New York: W. W. Norton & Company, 2015), pp. 135,136.
25. Peter Ward and Joe Kirschvink, *A New History of Life – The Radical New Discoveries About the Origins and Evolution of Life on Earth*, (New York: Bloomsbury Press, 2016), p. 48.
26. <https://en.wikipedia.org/wiki/RNA>
27. Sean Carroll, *The Big Picture – On the Origins of Life, Meaning, and the Universe Itself*, (New York: Dutton, 2016), p. 236.
28. Stuart A. Kauffman, *A World Beyond Physics – The Emergence and Evolution of Life*, (Oxford, UK: Oxford University Press, 2019), p. 77.
29. George Wald, *Scientific American* magazine, “The Origin of Life,” p. 46.
30. Addy Pross, *What is Life?*, p. xii.
31. Sean Carroll, *The Big Picture*, p. 238.
32. John F. Ashton, *Evolution Impossible*, (Green Forest, AR: Master Books, 2012), p. 44.
33. Addy Pross, *What is Life?*, p. 6.
34. Stuart A. Kauffman, *A World Beyond Physics*, p. 52.
35. Erwin Schrodinger, *What is Life?*, (Cambridge, UK: Cambridge University Press, 1967), p. 70.
36. Stuart A. Kauffman, *A World Beyond Physics*, p. 93.
37. *Ibid.*, p. 100.
38. Sean Carroll, *The Big Picture*, p. 249.
39. Erwin Schrodinger, *What is Life?*, p. 69.
40. Sara Walker and Paul Davies, *Journal of the Royal Society*, 10 (79), 2013, p. 1, quoted by Randy J. Guliuzza, *Acts and Facts* magazine, “Imagining That Life is Only Chemistry,” (Dallas, TX: Institute for Creation Research, Dec. 2016), p. 18.
41. Thomas Nagel, *Mind and Cosmos*, (New York: Oxford University Press, 2012), pp. 123,124.
42. Jeffrey P. Tomkins, *The Design and Complexity of the Cell*, (Dallas, TX: Institute for Creation Research, 2012), p. 28.
43. *Ibid.*, p. 28.
44. *Ibid.*, p. 38.
45. Sean Carroll, *The Big Picture*, p. 94.
46. Charles B. Thaxton, Walter L. Bradley, Roger L. Olsen, James Tour, Stephen Meyer, Jonathan Wells, Guillermo Gonzalez, Brian Miller, and David Klinghoffer, *The Mystery of Life’s Origin – The Continuing Controversy*, (Seattle, WA: Discovery Institute Press, 2020), pp. 340,341.
47. *Ibid.*, p. 362.

48. Fazale Rana and Hugh Ross, *Origins of Life*, (Colorado Springs, CO: Navpress, 2004), p. 95.
49. Peter Ward and Joe Kirschvink, *A New History of Life*, p. 55.
50. Robert M. Hazen, *The Story of Earth*, p. 147.
51. Peter Ward and Joe Kirschvink, *A New History of Life*, p. 55.
52. Sean Carroll, *The Big Picture*, p. 267.
53. Jeffrey P. Tomkins, *Acts and Facts* magazine, “The Impossibility of Life’s Evolutionary Beginnings,” (Dallas, TX: Institute for Creation Research, March 2018), p. 13.
54. *Answers* magazine (no author), “Where Did Proteins Come From?”, (Hebron, KY: Answers in Genesis, November/December 2019), p. 29.
55. Peter Ward and Joe Kirschvink, *A New History of Life*, p. 41.
56. Thomas Heinze, <https://creation.com/did> God create life ask a protein, 2006.
57. www.solargard.com/blog/ultraviolet radiation.
58. Nick Lane, *The Vital Question*, p. 51.
59. Neil Shubin, *Some Assembly Required*, (New York: Pantheon Books, 2020), p. 90.
60. *Ibid.*, p. 89.
61. Andrew Knoll, *Life on a Young Planet*, p. 123.
62. Nick Lane, *Life Ascending*, pp. 92,93.
63. Jeffrey P. Tomkins, *The Design and Complexity of the Cell*, p. 41.
64. *Ibid.*, pp. 40,41.
65. Harold C. Bold, *The Plant Kingdom*, (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1970), pp. 3,6.
66. Charles B. Thaxton, et al., *The Mystery of Life’s Origin*, p. 266.
67. Stephen C. Meyer, *Signature in the Cell – DNA and the Evidence for Intelligent Design*, (New York: Harper One, 2009), p. 86.
68. *Ibid.*, p. 304.
69. Werner Gitt, *In the Beginning Was Information*, (Bielefeld, Germany: Christliche Literatur-Verbreitung e. V., 2001), p. 99.
70. *Ibid.*, p. 107.
71. Stephen C. Meyer, *Signature in the Cell*, p. 16.
72. Werner Gitt, *In the Beginning Was Information*, pp. 80,81,113.
73. Jonathan D. Sarfati, *The Genesis Account – A theological, historical, and scientific commentary on Genesis 1-11*, (Powder Springs, GA: Creation Book Publishers, 2018), pp. 232,233.
74. *Ibid.*, pp. 228,229.

75. Ibid., p. 230.
76. Ibid., p.229.
77. Richard Dawkins, *The Blind Watchmaker*, pp. 115,116.
78. Antony Flew, azquotes.com, Antony Flew.
79. John C. Sanford, *Genetic Entropy*, (FMS Publications, 2014), p. 1.
80. Ibid., p. 3.
81. Ibid., p. 4.
82. Charles B. Thaxton, et al., *The Mystery of Life's Origin*, p. 326.
83. Ibid., p. 327.
84. Ibid., p. 332.
85. Ibid., p. 449.
86. Richard Dawkins interviewed by Ben Stein, *Expelled DVD*, Vivendi Entertainment, 2008.
87. brainyquote.com/Charles Darwin quotes.
88. Richard Dawkins, quoted by Jonathan Sarfati, *By Design – Evidence for Nature's Intelligent Designer – the God of the Bible*, (Creation Book Publishers, 2008), p. 14.
89. Fazale Rana and Hugh Ross, *Origins of Life*, pp. 70-76.
90. Ibid., pp. 211,212,221.
91. Jonathan Sarfati, *The Genesis Account*, pp. 39,40.
92. Henry M. Morris, *The Genesis Record – A Scientific and Devotional Commentary on the Book of Beginnings*, (Grand Rapids, MI: Baker Book House, 1976), p. 40.
93. Jonathan Sarfati, *By Design*, pp. 57-61.
94. Ibid., after Stuart Burgess, *By Design*, p. 61.
95. Jeffrey P. Tomkins, *The Design and Complexity of the Cell*, p. 45.
96. Jerry A. Coyne, *Faith vs. Fact – Why Science and Religion Are Incompatible*, (New York: Penguin Books, 2015), p. 257.
97. Ibid., p. 134.
98. Ibid., p. 147.
99. Ibid., p. 157.
100. Change Laura Tan and Rob Stadler, *The Stairway to Life – An Origin of Life Reality Check*, (self-published, 2020), pp. 32,42.
101. Ibid., p. 67.
102. Ibid., p. 177.

103. Ibid., p. 212.
104. Michael Denton, *The Miracle of the Cell*, (Seattle, WA: Discovery Institute Press, 2020), p. 121.
105. Ibid., pp. 123,124.
106. Ibid., p. 135.
107. Ibid., p. 137.
108. Ibid., p. 137.
109. Ibid., p. 138.
110. Donald R. Prothero, *Evolution – What the Fossils Say and Why It Matters*, (New York: Columbia University Press, 2007), p. 154.