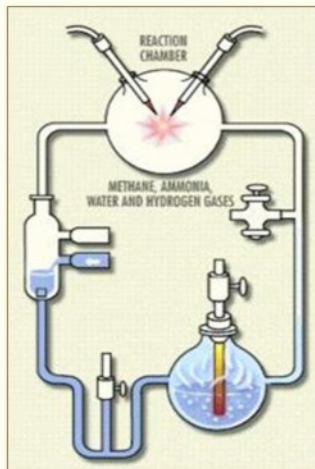


"You are worthy, O Lord, to receive glory and honor and power;
for You created all things, and by Your will they exist
and were created." Revelation 4:11

How God Reveals Himself Through Science



**Chemical
Evolution**



Cannot



**Create
Life**

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Foreword

It is commonly taught that life evolved as a result of principles of chemistry and physics working on raw materials over a long period of time. The details of science contradict this.

Scientists cannot point to a single successful experiment In abiogenesis (chemical evolution)

A natural origin of life is scientifically impossible. Over the past 60 years, thousands of experiments in abiogenesis have been performed. Every one of them is a dead end. Not one of them starts with raw materials and processes these into new products such that the new products are suitable for use as feedstock for a subsequent step. The problem is that natural processes working in pre-life conditions always make a broad range of products. A few of these are useful towards the appearance of life. Most of them work against it. The principle of entropy teaches that when a broad range of products is possible, a broad range will be produced. The purity of products needed as input to the next step are never produced because of basic laws of science. This booklet will show how experiment by experiment, entropy prevents the results needed for advances in abiogenesis. Therefore, abiogenesis is scientifically impossible.

Symbolic Coded information is a product of intelligent activity.

Coded information stored in DNA controls the various activities of a living cell. Information is an abstract representation of *meaning* by a set of symbols arranged according to a code. The invention of a code requires intelligence; the scope of the *meaning* to be represented is limited primarily by the intelligence of the one inventing the code. It takes a special kind of machine to extract and use information. A computer and a living cell are both examples of this. The machine and its information must make a simultaneous first appearance,—neither has value without the other already existing in fully-functioning form. This precludes their formation by the gradual steps of evolutionary processes.

The Bible teaches that God created the universe in such a way as to show that He did it. Science is the detailed study of the creation. A detailed look at the above two issues shows that natural processes cannot create life. Furthermore, the use of information to control a cell shows it is the creative handiwork of a living, personal God.

This argument will be worked out in detail in this booklet.

How God Reveals Himself Through Science: *Chemical Evolution Cannot Create Life*

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Chapter 1 The Situation

Abiogenesis is the scientific study of a natural appearance of life through evolutionary processes over a long period of time. It appears that every experiment performed in this field has failed. Not one experiment can demonstrate a process presumably available in a pre-life environment that can produce chemicals useful for an advance towards life. Instead, each has uncovered and illustrated problems that work to thwart advance. There are many experiments that look good at first appearance, but actually expose serious problems when looked at carefully. It appears that Louis Pasteur was correct about *spontaneous generation*. It is impossible, period. We will show this also applies to long term, evolutionary instances, not just short term ones. Both fail.

Am I making a wild, extravagant claim? —Have there truly been no successful experiments in abiogenesis, ones which demonstrate a significant advance towards life? If I am wrong, it should be trivial to expose my error. After all, there are thousands of experiments available for ammunition. All one needs to do is to point to a successful experiment. Since a successful experiment would represent a significant breakthrough, one would expect it to receive a lot of attention with multiple independent laboratories confirming it. That is the way science works. Much of the journal literature in abiogenesis is available on the internet for free access. So, after sixty years and thousands of experiments, there should be all kinds of experiments showing successful results which can be referenced by open, free, internet access. It should be trivial to refute any claim of no successful experiments.

If you disagree with this claim, here is a challenge: Find and send me the reference information for a journal with free internet access so that anyone who desires can access it, including me. The article is to be a report on a successful experiment, where success is defined within the context of this chapter. My commitment will be to discuss the article openly and its implications honestly on my internet site, www.creationtruthoutreach.org. Over the past four years over 30,000 free copies of various versions of the material in this booklet have been distributed on over 40 university campuses, including various branches of the University of California, The University of Texas at Austin, the University of Minnesota, The University of Florida, Louisiana State University and many, many others. Lots of students have promised to send me such a link. To this date, no one has. In time I have gotten bolder in my claim simply because at this point no one has taken up the challenge. Yet, if the claim is unfounded, it should be trivial to expose it as such. If you disagree with me, may you can be the one to expose my error! As of the date this was printed, no one else has.

This is the proposed sequence of *chemical evolution*, which is another name for *abiogenesis* and emphasizes its evolutionary foundation: A series of gradual steps start with the chemicals naturally available on a planet or moon. These combine with each other to form the building block molecules for life. Over time the molecules steadily increase in complexity, becoming closer and closer to forming the molecules characteristic of a living system. Eventually, the complexity increases to the point that some of the molecules start copying (replicating) themselves. Some of the time these “self-replicating molecules” would have errors in copying—”mutations” as they are called. Some of the mutations would accidentally present an improvement over the original replicators. Natural selection would favor copying the ones with improved characteristics. Mutation and natural selection are the keys to evolution. This is the

reason this field was initially called “chemical evolution.” Eventually, over time, a fully-formed living cell complete with information stored in DNA would appear. Then, eventually these original cells evolved into you and me and all of the various forms of life we see around us. This sequence sounds so logical that it has convinced many people that since it is logical it must be true. However, the facts teach otherwise.

There is a fundamental, basic, essential assumption in the above argument. However, this assumption is NEVER discussed with students in the classroom. The assumption is that each step of the entire sequence will naturally flow into its successor. This is important, because it would take only a single failed step to thwart the entire process leading to life--only one broken link in a chain snaps the chain. By definition of abiogenesis, it is assumed that no external influence or guidance is needed for the above progression to take place for every step in its entirety. Therefore, the laws of science must so favor each of the steps needed for life that the proper chemicals will naturally appear as needed by each step for the entire sequence to flow smoothly from beginning to end.

A successful experiment then becomes defined as one that can convert its initial, starting chemicals into new chemicals that can be used exactly as produced as the supply chemicals for the next stage. The theory is that the entire process is to take place in the wild under uncontrolled conditions and without interruption from its beginning to its end. So, it certainly should not be unrealistic to expect a controlled experiment under idealistic laboratory conditions to be able to do this for least one step. It is also understood that the processes used must be reasonable for a pre-life scenario. Moreover, they must not be dependent upon any kind of outside intervention or control—whether directly by human input or indirectly by automated apparatus designed by humans. So, a major criterion to count an experiment successful is its ability to produce products which function satisfactorily as feedstock for a succeeding step of abiogenesis.

Scientists have at their disposal complete control over the exact ratio of starting chemicals, environmental conditions, and energy sources to perform any hypothetical step they choose. In a natural setting, these advantages would not exist. Yet, despite all of these advantages they still have not been able to demonstrate even one step which produces the proper chemicals to advance to the next one.

Instead, the chemicals produced experimentally have been characteristically unsuitable for further use; they have always resulted in dead ends. Furthermore, the reasons for the dead ends make sense. We can understand why we get the results that we do. Ultimately, these reasons lead back to entropy working in tandem with the basic laws of physics and chemistry. There is no known scientific basis to expect anything different from what we have actually observed so repeatedly.

There is a simple, easy-to-understand underlying cause for the many observed failures. The number of possible molecules based on carbon atoms is staggering. Beilstein’s Register lists by name, formula, and basic chemical characteristics over a million of them. Because of the large number of possibilities, pre-life processes will be capable of producing a broad range of products from their initial feed stock. The principle of entropy teaches us to expect this to take place. In fact, the statistical distribution of the products produced will be consistent with and determined by entropy. Experiment confirms that this, indeed, is what happens.

Abiogenetic Disconnects

This is the key issue: On the one hand, a broad spectrum of molecules will always be produced in a pre-life setting. The principle of entropy guarantees this. This is *predictable* in theory and *confirmed* experimentally. On the other hand the molecules needed for life are

- 1) very specific,
- 2) very complicated,
- 3) very difficult to produce, and
- 4) tend to fall apart relatively quickly.

There is no connection between the principles that determine which products are produced by nature in a pre-life scenario and those defining the products that are useful for life. These two sets of principles are completely independent of each other. As a result, there is nothing to constrain natural processes to produce the specialized products needed for life. This observation provides the explanation for the universal failure of experiments in abiogenesis. It is the fatal flaw.

The task facing the abiogenist is obvious: show how natural processes reasonably available in a pre-life setting will naturally produce the kinds of chemicals needed for life. These chemicals must also appear in a form useful for life. I claim that they do not and that true science shows us why they cannot.

If this truly is the case, then the entire field of abiogenesis is false, nothing more than pseudo-science. Abiogenesis appears to be the equivalent of an engineer trying to design a steamship which takes in lukewarm warm water from the ocean and extracts energy from it to drive a boiler while dumping ice cubes out the back end. Entropy shows why both are impossible.

Tar

There is another serious problem. It is talked about more in the next chapter. Whenever a random combination of organic chemicals is mixed together in an environment supplying sufficient energy for them to interact, they have a strong tendency to turn into a gooey, inert tar. As more molecules are added to the tar, fewer and fewer remain available for any kind of use. Experiments in abiogenesis characteristically grind to a halt because of tar formation.

The problem here is the same as mentioned earlier. For abiogenesis to succeed, it is necessary for the entire sequence of steps to flow smoothly from beginning to end without any hindrance. Earlier we saw that the wrong chemicals tend to get produced. However, if the products ultimately bond together to form a gooey tar mass, then it is irrelevant whether or not they could have been useful. Tar formation is so characteristic of concentrated organic molecules in solution that is irrational to assume that the entire process of abiogenesis could proceed in a natural, unguided environment without being thwarted by it. (See page 18 for more discussion). Tar formation is a fatal problem, because natural processes consistently form it, it overwhelms every thing when it forms, and there is nothing to prevent its formation. Abiogenists need to

address this honestly. A good place to start would be to document in the journal report for an experiment the amount of tar formed and how rapidly it formed.

How the Creation Reveals its Creator

1) It is the thesis of this booklet that a living God directly created the physical life we see around us. 2) He also created it in such a way that scientific observation shows us why natural processes cannot legitimately account for its origin. The primary purpose of this booklet is to justify these statements and discuss their implications.

I have had people tell me that just because we do not understand how natural processes could create the chemicals of life, that that does not mean that God did it.

Well, the story does not stop here. The strongest evidence of life being the handiwork of a living God is provided by the genetic information used to fabricate and control a living cell (see chapter 4).

Information is a mental construct. It is an abstract representation of meaning. For instance, the word “car” is not a car, it is only a symbol used to represent a car. There are no laws of physics or chemistry to favor any one symbol over another in an abstract relationship. Natural processes do not form abstract relationships and act on them. In a living system they can make use of them. They cannot form them. These relationships are the product of an intelligent being inventing a code for one thing to represent something else.

Intelligence is not the only attribute of the Being who created life. He must also have the power to work within the creation at the atomic level. A living cell is built using extremely large, extremely complicated, precisely arranged molecules. A single atom placed incorrectly can frequently destroy the ability of a huge, complicated molecule to function properly. Yet, natural processes do not have the capability to select and position correctly the individual atoms making a living cell until such a cell already exists. Therefore, the Intelligent Being must have the personal power to do this. He must be able to select and join individual atoms into a preplanned structure, that of the first living cell or groups of cells. Hence He is not bound by the normal laws of physics and chemistry; He is greater than them.

This solution is offensive to an atheist, who will blind himself to the strength of the evidence to avoid conclusions he detests. Yet, the evidence is clear, it is based on well-established observations, and it is not difficult to understand. These observations are consistent with the Bible, which teaches us that there is a living God who expects us to understand that the creation reveals Him and considers us without excuse if we reject the message. (Romans 1:18-31).

This Intelligent Being chose to create life at a certain point in time. Therefore, He has a will. It takes planning to create an information-driven machine, because all the fabrication steps and processes must come together in sequence and accurately. Thus, this Intelligent Being not only has a will, but makes plans for what he intends to do.

What do you call a Being who is intelligent beyond man's ability to comprehend, is not limited in His behavior by the laws of science, has a will, and plans events? You call Him, "God." In fact, this is a simple definition of the term "personal God." God is not just an impersonal force, but a living Being with intelligence, power, and a will. He makes plans and carries them out. True science leads us to Him. We have just seen how. Incidentally, modern science was founded by men who understood this (see page 56).

You are worthy, O Lord, to receive glory and honor and power; for You created all things, and by Your will they exist and were created (Revelation 4:11).

God created man with the ability to comprehend His existence and to have a living relationship with Him. Man can understand the meaning of the words in the verse just quoted above. A computer can't. Neither can a dog or cat. God also gave man a will, such that man can choose to know and worship the Creator God, can worship what the Bible calls a false god or gods, or can set himself up as his own god. Every man decides for himself the path he will take. However, there will be eternal consequences to this decision. This will be further discussed in the final two chapters.

So, this brings up the next issue: if there is a true God who is the Creator and if there are also false gods, and if we are capable of knowing and having a living relationship with the true God, then how do we know who He is or which One He is?

I am a Christian. I believe that the Bible is the Creator God's verbal revelation to man. The creation can reveal to us that a personal, living Creator God exists. However, the creation does not tell us His standards concerning how He wants us to relate to Him. This comes from the Bible. Chapters 6, 10, and 11 of this booklet give evidences establishing the Bible as the unique verbal revelation of God as well as important details of what He expects from us in our relationship with Him. It is perhaps good to point out that the issue is not what we want to believe or not believe, but what the evidence shows is true. It is the position here that the evidence supporting the God of the Bible as the God of creation is more than sufficient to establish its validity.

Falsifying Humanism

Often students on a university campus will refuse a free booklet such as this when they are offered it. They will comment, "I am a history major," or "I am a political science major," and then walk off. How unfortunate! The truth is that the material in this and subsequent chapters is just as relevant to them as it is to a biochemistry student.

Secular humanism is a philosophy built on the *assumption* that a living, personal God does not exist. A number of corollaries follow from this assumption. Since physical life is nothing more than the end product of natural processes; then a living man is nothing more than a chance combination of chemicals; his existence stops when he dies. In such a case the only value of human life is whatever man chooses to give it. Ultimately, a man has no more value than a hairbrush, a car, or a computer. Underlying this entire train of thought is the conviction that man's own intellect is capable of independently reasoning through and understanding everything and anything worth knowing.

However, if there is indeed a living, personal God and if this God truly does intervene into the affairs of His creation, then humanism is false. In this booklet we show how the tools of science demonstrate the necessity of a living, personal, Creator God. This in turn invalidates the foundational premise of humanism, making it irrelevant.

Humanists absolutely hate and detest creation science, because it provides a very clear rebuttal to their foundational premise. The hatred of many professors towards the God of creation is simple. God's existence testifies against the validity of their personal philosophy.

The modern university may be viewed as an attempt to apply the concepts of secular humanism to every field of study. Therefore, if humanism is a false philosophy, then much of what is taught in a modern university is false. It is not so much observed facts that are wrong—facts are facts. However, the normal emphasis in an institution of higher learning is on the *interpretation* of facts. Generally, the only interpretations professors allow are those that are consistent with humanistic philosophy. Thus, only false interpretations of the observed data are open for discussion. Whether a student is studying political science, anthropology, history, or even the moral aspects of business, law, or medicine, the issue of humanism and its validity is relevant. This makes God's existence relevant.

Affirming God's existence and His working within His creation is the primary focus of this booklet. A student interested in learning truth and not mere propaganda should consider understanding the issues discussed here as his number one priority. This applies whether he is a political science major or biology major.

An Absolute Proof of God

Both chemical evolution (abiogenesis) and Darwinian evolution deny God His glory as the Creator. As a man looks in awe at the beauty and the detailed organization of the creation, God expects this awe to result in praise and thanksgiving to Him. When a person instead rejects the Creator and attributes His handiwork to mindless, random activity, it offends Him. He states in Isaiah 48:11, "I will not give my glory to another." This is serious, because the One who is being offended is One who has the innate power, wisdom, and will to create galaxies out of nothing. He does not get tired in the process. You do not want Him angry with the decisions you make. God has stated that He will reward us for honoring Him, but also will hold us accountable for not properly honoring Him. The Bible declares, "It is appointed for men to die once, but after this the judgment" (Hebrews 9:27). It is irrelevant whether a person likes this or not. The issue is whether it is true and supported by sufficient evidence.

The Bible teaches that it is possible to prove God's person and nature. However, this is judicial proof, not philosophical proof. It is impossible to prove anything to a philosopher, because his foundational assumptions are subjective and hence always debatable. Judicial proof is different—it is proof sufficient to convict in a court. Absolute judicial proof is proof so strong there is no valid legal defense against it.

The declaration, "It is appointed for men to die once, but after this the judgment," is important. God has set a day in which each man will give an account for how he has responded to God on this earth. Judicial proof is relevant here. In Romans 1:20 of the Bible we read,

“Since the creation of the world His invisible attributes are clearly seen, being understood by the things that are made, even His eternal power and Godhead—so that they are without excuse.”

In other words God designed the creation for it to reveal Him, a living, personal God, as its Creator. God counts the evidence so clear that on the day of judgment, He counts people rejecting it and rejecting Him as without excuse. This is absolute judicial proof in a court of no appeal, a court whose verdict is final and eternal. A grade in a classroom or a promotion at work pale in significance to this. Understanding the things presented in this booklet should be a person's top priority.

Chapter 2

Why Natural Processes Cannot Create a Living Cell

I like to eat brownies. Brownies with ice cream are perhaps my favorite dessert. However, if someone were to attempt to make brownies using one part brownie mix added to four parts cement mix, he would never get edible brownies. This is true no matter how many billions of years he might try and retry and retry the recipe. Billions of years of repetitious effort do not compensate for bad chemistry. Billions of years of repetitious effort do not turn bad ingredients into good products. This is obvious to a cook. It should be obvious to a scientist..

Many atheists claim that over the course of billions of years, it would be inevitable for life to form somewhere. The brownie analogy refutes this. If the laws of chemistry and physics truly work against a natural origin of life, then billions of years of repeating the same failures will never overcome the reasons for the failures. Time only insures that the normal laws of chemical reactions and chemical equilibrium prevail. If these laws work against a natural origin of life, then no amount of time will be sufficient to overcome them.

Let's consider the kinds of chemicals needed for life. These are the chemicals that abiogenesis will need to form from suggested raw starting materials, such as ammonia, methane, cyanide, and carbon monoxide among others. There are two major kinds of biochemicals used in a living cell: *proteins* and *nucleic acids*.

Proteins (in the form of enzymes) perform most of the chemical activity within a cell. A protein is formed by combining long strings of amino acids together. A particular amino acid is used at each position in the string from among 20 different kinds available.

The other major kinds of biochemicals are called *nucleic acids*. Nucleic acids are formed by stringing together certain building block molecules called *nucleotides*, with a choice from among four kinds of nucleotides available for each position in the string. There are two kinds of nucleic acids, RNA and DNA. RNA is formed first, it is occasionally converted into DNA for increased stability when used to store genetic information. Genetic information tells the cell what to do.

The first step of a pre-life process will be to form what is sometimes called a “soup” of raw materials, such as amino acids and/or nucleotides. The soup needs to be pure enough for random chemical interactions between amino acids or nucleotides to form long strings of pure protein or nucleic acids. If the soup is not extremely pure, then the impurities will combine with the amino acids or nucleotides and the required proteins and nucleic acids will never appear. It would be like adding so much cement mix to brownie mix that it becomes impossible to make an edible brownie. This is an important issue.

If natural processes were to bring about the origin of life on our planet or even somewhere else, the first question is obviously, “How did it start?” In 1953 a young graduate student at the University of Chicago, Stanley Miller, performed an experiment that startled the scientific community and is still talked about to this day. He simulated an atmosphere supposedly similar to that found on the early planet Earth by placing methane, ammonia, water, and hydrogen in a closed, evacuated flask. He simulated lightning as an energy source by inducing a spark across the flask. Amino acids, which are the building blocks for the proteins found in living systems today, appeared in a trap connected below the flask.

Let’s consider how Miller’s experiment operates. The chemicals it starts with are methane, ammonia, water and hydrogen gas. A spark is applied and acts like a bomb, randomly ripping apart the molecules it contacts. The fragments produced will rejoin in new, random combinations. As this process is repeated, any newly formed molecules contacting a spark can be ripped apart again. This process can be repeated multiple times. Eventually, the starting chemicals organize into the molecules shown in the table on the next page, with 6 times as much tar formed as shown in the listed materials.

This would obviously be a very uncontrolled process. With the random ripping apart and random recombination characteristic of Miller’s Experiment, it is very easy to understand why the broad mix of chemicals shown in the Table was formed. It is also easy to understand why these chemicals are characterized by all of the problems discussed below.

Carbon and nitrogen along with hydrogen and oxygen are capable of forming over a million different kinds of molecules. In fact the *Beilstein Database* catalogues by number over a million carbon-based compounds and processes. Miller’s experiment has the potential to create many of the molecules registered in Beilstein. It makes sense for many different kinds of molecules to be produced, even as shown in the Table. This is what we should expect. The predicted kinds of products and experimental observation agree.

We should expect that occasionally and on an incidental basis, chemicals such as amino acids, which are relatively easy to form, will appear. We should also rarely if ever expect to find nucleotides, which are extremely difficult to form. Again, prediction and experiment agree and confirm each other. Nucleotides have never appeared in a simple, pre-life like experiment unless there is also human intervention. Amino acids can and do, even without intervention.

Proteins are extremely long chains of amino acids, typically between 50 and 1,000 in a single chain. They will never be formed by spontaneous combinations using chemicals such as those shown in the Table. Just because amino acids appear on an incidental basis does not mean that they appear in a useful mix. It is amazing how many atheistic chemists refuse to acknowledge this. Yet, it is chemistry at its most basic level.

Results of Miller's Experiment

Compound	Relative Yield	Classification
Formic acid	233	Contaminant
Glycine	63	Water-repelling amino acid
Glycolic acid	56	Contaminant
Alanine	34	Water-repelling amino acid
Lactic acid	31	Contaminant
Acetic acid	15	Contaminant
Beta-Alanine	15	Water-repelling amino acid
Propionic acid	13	Contaminant
Butyric acid	10	Contaminant
Iminodiacetic acid	5.5	Contaminant
Sarcosine	5	Contaminant
Succinic acid	4	Contaminant
Urea	2	Contaminant
N-Methyl urea	1.5	Contaminant
Iminoacetic-propionic acid	1.5	Contaminant
N-Methylalanine	1	Contaminant
Glutamic acid	0.6	Water-attracting amino acid
Aspartic acid	0.4	Water-attracting amino acid

Table 1.

Compound and Yield from Miller, 1959.
Classification by the Author.

The kinds of chemical reactions available under pre-life conditions will always produce a complex mix of products, with too many contaminants for successful abiogenesis. Changing the energy source from a spark to a high energy ultra-violet light photon or even to a hot water source does not change the underlying process. The energy acts like a bomb, randomly destroying whatever it interacts with. Changing the raw source chemicals does not change the process. Neither does changing the operating temperature or the acidity of the solution. The Beilstein Database is the natural goal of pre-life chemical processes, not abiogenesis.

It is easy to understand that if random collisions between molecules are going to combine into long, pure strings of amino acids or nucleotides, then an extremely pure source of these will be required. The problem is that there is no connection between the broad range of products naturally produced and the purity required for abiogenesis. *Abiogenetic Disconnects* refers to this lack of connection.

The appearance of amino acids in Miller's trap excited scientists and laymen alike; Miller apparently discovered a feasible starting point for chemical evolution. His experiment seemed to open up all kinds of scenarios as possibilities for a natural origin of life, free from the creative efforts of a Supernatural Being. It is difficult to find an introductory biology textbook that says anything about origin-of-life issues and does not still describe this experiment and its significance. We now understand that this excitement was premature.

Six Big Problems

Miller's experiment represents a first stage process. It is noteworthy that neither Miller's experiment nor any other of the many of variations on it have ever produced the desired target soup of usable building block molecules. Instead, they all share in common the following six problems. All but the first is fully capable of single-handedly thwarting a natural origin of life unless it can be resolved or overcome. After more than sixty years of effort, there has been no progress towards a solution for any of them, except possibly the first. In abiogenesis, existing known problems do not get solved. Instead, as we learn more and more, we just keep finding new ones.

1. Origin-of-life processes require an untypical initial assortment of raw materials. Something seldom discussed except by creationists is that even from the beginning, Miller's experiment represented intelligent intervention into natural order. Miller's graduate advisor Harold Urey, a Nobel prize-winning Ph.D., thought that a reducing atmosphere such as found on Jupiter and the other large planets, might have been suitable for the origin of life. (Miller S *et al.* 2004).

In reality, Jupiter's atmosphere is unsuitable for the origin of life. It has about 300 times as much hydrogen as methane as well as a small amount of ammonia and smaller amount of water. This much hydrogen would prevent methane and ammonia from combining into anything else.

As a trained chemist Miller knew that this ratio of raw chemicals would not produce any amino acids. So, he changed it for the experiment. He introduced equal amounts of methane and ammonia with a small amount of hydrogen in a steam-saturated atmosphere and zapped everything with a spark. Miller used chemicals in close to the ideal ratios needed for producing amino acids and he was able to get some amino acids.

So, the ratios between the various molecules Miller used in his experiment and the ratios found on Jupiter, his initial model, were totally unrelated to each other. If he had copied the actual Jupiter atmosphere, the experiment would have failed. It took a trained chemist to know how to modify Jupiter's atmosphere to one which could work. This represents human intervention.

The composition of the initial raw materials that appear on a planet will be in accordance with various random astronomical and terrestrial factors that have nothing to do with the requirements for abiogenesis. Chemical evolution requires specific initial components in useful concentrations and in useful ratios with each other. No planet or moon has ever been observed which has raw materials available which are suitable for abiogenesis.

Abiogenetic Disconnects first appears at this, the starting point of chemical evolution. There is no principle of physics or chemistry to constrain the composition of the initial raw materials appearing on a planet or moon to match those suitable for life. There is a disconnect between natural products and required products. Because of the sheer number of planets in the universe, this problem makes abiogenesis unlikely but does not necessarily prevent it.

2. Origin-of-life processes innately produce more contaminants than useful product. The table on page 13 shows that Miller made almost four times as many contaminants as amino acids. For our purposes a contaminant is defined as any chemical not actually used in a particular, desired chemical reaction, but which can interfere with it in some manner and thus prevent it from taking place.

This means that the particular building-block molecules necessary for one desired sequence of operations could become contaminants and ruinous for other sequences. If the goal is to get amino acids to string together and form a protein, then any products (or even initial raw materials) which can interact and interfere with the growing chain are contaminants.

This is an important observation: the excessive contaminants are produced as a result of the basic laws of nature. They can be predicted from chemical reaction theory and the predictions are confirmed by experiment. There are no natural workarounds to avoid them. So, there is a disconnect between the kinds chemicals produced by natural, pre-life processes and the kinds required for chemical evolution. Abiogenetic Disconnects shows itself again.

The products are produced according to their probability of formation at any instant. Changing energy sources or the kinds of raw materials or temperature or pressure will not change the nature of the results. As a result, a broad product yield such as what we see in Table 1 is characteristic of all first-stage experiments, not just Miller's. At best a few amino acids are produced among a far greater number of contaminants.

The overwhelming concentration of contaminants dominates future steps. It absolutely prevents the amino acids from ever assembling into proteins. It is like adding four times as much cement mix as brownie mix to brownie batter. Good brownies will never be produced. Repeating a bad recipe over and over does not compensate for bad chemistry. It is amazing how many supposedly intelligent scientists do not seem to grasp this.

In truth the discussion stops here. Because theory is confirmed by experiment under a variety of scenarios, a person should accept that this is what science teaches us. The only basis for rejecting this would be to demonstrate experimentally how useful products can be produced from raw starting chemicals. At this point there is no basis to assume this is even possible.

We will see in the next chapter that the late Leslie Orgel, Ph.D., one of the leading abiogenists in history and one of the fathers of the RNA-world hypothesis, eventually came to much the same conclusion. In the last paragraph of his final journal article, he stated that the gap must be closed that exists between the complex products supplied by pre-life initial processes and the purity required to make complex biochemicals. Otherwise, if the gap is not closed, abiogenesis would not be possible. Furthermore, he was not impressed by what he had seen of efforts to close the gap. He compared those efforts to "If pigs could fly..." logic.

Although the disconnect between products produced by initial processes and products required by subsequent processes is sufficient in itself to make a natural origin of life impossible, we continue the discussion just because there is so much more to talk about.

3. Origin-of-life processes do not provide multiply-required products in useful ratios.

Amino acids are used to make proteins.

Various kinds of proteins are used in the body including enzymes, which are used to control chemical processes in the body.

Enzymes have very complicated three-dimensional shapes that control their activity. The twenty amino acids coded for in DNA have a number of varying characteristics between them—whether they are attracted to water molecules or repelled by them, whether they have a positive, negative, or neutral electrical charge, whether they are large or small, and whether they make sulfur bonds or not (sulfur bonds are much stronger than other bonds).

Of these characteristics, the most important is its attraction to water molecules. A typical enzyme needs approximately equal numbers of water-attracting and water-repelling amino acids. This ratio is necessary in order to form the shape to perform a specific function. However, since water-repelling amino acids much are easier to make than those that are water-attracting, Miller's experiment produced 100 times as many of them. Table 1 shows this. This ratio is not even close to the approximately equal numbers required. Unfortunately for chemical evolution, though, the naturally occurring ratio would make it statistically impossible to string together useful enzymes using random processes.

From the perspective of chemical evolution, *there is nothing to constrain the factors which determine the ratios of the various products formed to provide ratios suitable for abiogenesis.* This means mismatches such as the above should be the expected norm. The relative ratios between the various chemicals produced will always be based on how easy they are to form from the immediately available chemicals and the results will in general be unrelated to their usage requirement for chemical evolution. The disconnect between the products naturally produced and the requirements of abiogenesis has appeared again. This is another issue sufficient in itself to stop chemical evolution dead in its tracks.

4. Chirality: Origin-of-life processes make products without regard to required "handedness." Amino acids and nucleic acids can exist in two different forms. These two forms are mirror images of each other. For convenience they are called "left-handed" and "right-handed." This is another serious issue. The problem is that for proteins and nucleic acids to form their proper shapes, they need all their constituent molecules to be either left-handed or right-handed. Mixing both kinds of handedness together in a string forces proteins and nucleic acids into useless shapes. Since Miller's and similar experiments produce products by randomly joining available molecules to each other, they inherently produce equal portions of both left-handed and right-handed molecules. This is a serious problem. Chemists first noticed this issue 150 years ago. Current journal articles still recognize its seriousness and are still trying to figure out how evolutionary processes could overcome the problem.

Notice, the disconnect appears yet again. Natural processes randomly make both mirror-image forms. Abiogenesis requires consistency of left-handed or right-handed forms to make the required shapes of proteins and nucleic acids.

5. Origin-of-life processes make more tar than anything else. Organic molecules dissolved in water will tend to clump together in a gooey mass frequently referred to as “tar.” Once a molecule is in the interior of the gooey mass, it no longer interacts with the molecules in solution and is effectively inert. Tar is the normal product of experiments that simulate pre-life conditions. For instance, the primary product of Miller’s experiment was actually tar—85% of Miller’s starting chemicals turned to tar. If Miller had not added a trap to remove some of the products, eventually he would have had 100% tar, not a mixture of building block chemicals ready to form life. Yet, Miller did not discuss this in his initial journal report. Abiogenists since him copy his example; they don’t discuss it either. Yet, it is one of the most significant issues.

This is important: simply leaving the power turned on and adding a continual stream of new raw materials would not have resulted in Miller eventually providing a soup useful for second stage activity. It would not have resulted in the amino acids produced assembling themselves into proteins. It would have merely resulted in a lot more tar on the walls of his equipment. The test apparatus would become completely clogged with tar, stopping the experiment. Abiogenists understand this problem very well. They choose to ignore it. For instance, few if any textbooks mentioning Miller’s experiment talk about how his main product was tar. None talk about how the same problem is characteristic of origin-of-life experiments in general.

The chemicals of life have a natural tendency to make tar. This is a problem at every stage of development and continues with living cells today. Fortunately, living cells have an elaborate maintenance system to rid themselves of tar as it forms and before it destroys them. Otherwise, they could not survive. This includes us—our own survival depends on effective tar-removal from our cells. Pre-life chemicals do not have a maintenance system to dispose of tar as it forms. This makes a natural origin of life impossible.

6. Origin-of-life processes do not provide essential products in adequate concentration. Another major problem concerns the amount of useful product created. Shortly after Miller first published the results of his experiment, scientists speculated that the oceans of the earth could have once been a “soup” of biological building block molecules working towards the formation of life. Then, a more careful analysis showed that the earth’s entire atmosphere would not be capable of supplying enough raw material to turn the world’s oceans into useful soup. As scientists became more realistic in their expectations, the potential size of the soup kept shrinking in volume. Now it doesn’t actually appear to have existed anywhere.

Current opinion is that natural processes are incapable of directly producing a sufficiently high enough concentration of products to promote abiogenesis. Therefore, some means of concentrating them is required. For instance, we read, “Even in the most optimistic assessments of the sources for pre-life organic molecules, whether originating extra-terrestrially or on the earth, the oceans and the large bodies of water existing three to four billion years ago would have been extremely dilute. Therefore, mechanisms for selecting and concentrating the essential biomolecules are required” (Hazen 2010).

The bottom line is that there is no connection between the factors determining the concentration of chemicals provided by natural processes and the concentration required for the emergence of life.

There is a second factor working against a useful concentration of the products produced. We have already discussed how pre-life chemical processes inherently produce a wide variety of products. By simple mathematics this means that no particular product will have a very high concentration. I find it intriguing to consider various journal articles that show all of the varied molecules that can be formed by pre-life processes and then talk as if this were an advantage. They appear to have the attitude, “With this many possibilities, surely something available will be effective.” In truth a wide range of products is a serious disadvantage, not only because of contamination interference by all of the unused products, but also because of the resulting low concentration of any useful variants.

As an illustration of this situation, Benner provides a diagram that shows the overwhelming complexity of products possible in just a few steps starting with simple raw source molecules. He thought this was good. I think it is bad. Entropy would prevent any single one of these from forming preferentially over the others as to allow it to become a concentrated building-block molecule useful in a path towards life. Just because it is needed or useful is irrelevant. There is no principle of science to form preferentially the ones needed, apart from the activity of an already living cell. Benner’s diagram is available free online and worth looking at. (Benner et al. 2010. FIG 10).

Clay

Many abiogenists believe that life started on clay crystals as a concentrating mechanism. This may work in a lab, but there are problems in a real-life setting. Clay in a lake sweeps out pollutants. *Likewise, it would do the same for the chemicals of abiogenesis.* The following is an excerpt from an article I wrote about this (Stout T. 2013):

“It has been observed that there is a natural influx of suspended clay particles into a lake. As these particles drift throughout the lake, various pollutants in the lake adhere to the particles’ surfaces. Then, as the particles settle and are buried by sediment, the pollutants are buried along with the particles. The influx of clay particles effectively “sweeps” the lake free of pollutants and buries them, at which point they no longer interact with the environment. A clear example of this has been reported for Lake Michigan. Portions of the lake are surrounded by large urban populations which introduce into it significant quantities of man-made pollutants. Yet, Eadie (1997) reported that 95% of the pollutants have been observed to be removed by this sedimentation process, over the course of a few years”

Likewise, we should expect the same sedimentation process to remove any pre-life biochemicals from the water in which they are found. Perhaps this explains the results of this next experiment:

Soap Scum?

David Deamer is one of the world’s leading scientists in the study of abiogenesis. He is co-editor of a Cold Springs Harbor Laboratories collection on abiogenesis which features nineteen articles summarizing current abiogenesis research (Deamer D and Szostak J. 2010). He and his colleagues performed a unique experiment which gave unexpected results.

Various observations have led one camp of biochemists to propose that life might have

emerged in hot, thermal vents in the ocean or hot geothermal sites inland. Their ideas have traditionally been simulated with experiments done in a laboratory setting.

Deamer and his team decided to go to a volcanic hot spring, add some amino acids, nucleotides, fats, glycerol, and phosphate to the water, and see what happened. They would supply the raw materials of an idealized soup based on their skills as biochemists. The team was surprised. They had not expected what happened. Some quotes:

“Most of the added organics and phosphate were removed from solution with half-times measured in minutes to a few hours.”

“A white scum appeared in the Kamchatka pool within minutes of adding the organic mixture. The precipitate is probably a mixed iron and aluminium soap, which would remove the fatty acid as a potential reactant.”

“The phosphate and added amino acids were below detectable limits in minutes to hours....”

“The observation that organic compounds were below detection limits so rapidly was surprising.”

“It is significant that most of the clay mineral apparently bound the added solutes” [this shows how well clay binds biochemicals].

“...The origin of life in a natural setting would have had a variety of possible fates other than those observed in a laboratory setting, where pure compounds react in glass containers” (Deamer D. et al. 2006).

The last three quotes taken together represent perhaps the greatest significance of the entire experiment. Deamer is one of the foremost biochemists in the world. Yet he was still unprepared for how much harsher a natural environment is than a laboratory setting. In so many words he effectively acknowledged that there can be all kinds of unexpected glitches that would be capable of thwarting abiogenesis in a true-to-life setting that do not appear in a lab, although he was more discrete in his wording. This is particularly significant when one considers that even with all of the advantages of a “laboratory setting, where pure compounds react in glass containers,” naturally occurring roadblocks have so far thwarted every effort to provide a clear, successful demonstration of an advance in abiogenesis at any stage. Yet, in the wild we should expect significantly worse results than observed in a laboratory, even as the experiment demonstrated.

It is intriguing to do a journal search for articles discussing the potential role of clay in abiogenesis. There are very many. It is humorous to see that many of them discuss how well biomolecules join to clay. This merely insures that when the clay settles out and is buried as sediment, the biomolecules will be buried along with it. This is an extremely serious issue that is singlehandedly capable of thwarting abiogenesis.

RNA

RNA nucleotides, the building blocks of RNA, have never been fabricated in the lab using a realistic pre-life process. Currently, the best hope for possibly doing this is with what has been called the “one pot approach” by John Sutherland (Powner M *et al.* 2009). Sutherland spent 14 years tinkering with it before he finally stumbled onto a workable process for it to make nucleotides, although he finally did. However, Steve Benner pointed out that Sutherland’s scenario is not realistic, still requiring too much human intervention to make it work and to prevent the production of tar as the major product (Benner S *et al.* 2012). Human intervention is nothing more than a scientist constraining a process to give the required results for abiogenesis when nature doesn’t constrain it.

Abiogenists like to act as if the problems we have looked at are isolated. They just “put them on the back burner” until a solution comes forth. If the problems were actually isolated from each other, this might be acceptable, even if the back burner is rather crowded. However, the observed “failed results” of the experiments are actually consistent with expectations from normal chemical behavior. The experiments are not failures in the sense that they confirm the validity of the normal laws of chemical reactions. **The only “failure” is that normal chemistry does not meet the needs of abiogenesis.**

It is time to say that enough is enough. Abiogenetic Disconnects provides a unifying factor for the problems. This changes the situation. Science now provides a sound reason why natural processes are incapable of forming life—Abiogenetic Disconnects.

Chapter 3 Middle-Stage Problems

It is in the hypothetical second or middle stage of abiogenesis that the building block amino acids and nucleotides formed in the first stage combine into useful chemicals. The goal of this stage is to provide a series of steps leading to a replicating system of large, complex molecules capable of evolving through mutation and natural selection. In the preceding chapter we looked at how the products of a first-stage process, as represented by Miller’s experiment, do not provide products useful for this stage. There are too many contaminants, ratios are wrong, the desired chemicals are supplied in too low concentration, etc.

The reality of these problems is illustrated by the procedure scientists use to study middle-stage issues. They never start with the products of a first-stage process, although in a natural setting *this would be all that was available*. Instead, they go to a chemical supply house and purchase the exact chemicals needed for a particular test, with laboratory-grade purity, in a specified concentration, and in the proper relative ratios. Despite this advantage over a realistic pre-life assortment of chemicals, their experiments still fail to produce products suitable for a subsequent step.

Of course, chemical supply houses did not exist on the pre-life earth. Abiogenists typically justify using chemical supply houses for their supplies, claiming that it speeds up the process. The inference is that if Miller’s experiment were to run long enough, it would eventually supply the desired soup of pure building block molecules in the right concentrations.

They don't seem to understand that bad chemistry will always produce bad products. Miller's experiment will primarily produce tar along with its characteristic broad mix of products. This will be true no matter how many times it is repeated, how long it runs, or how the raw chemicals might be varied from run to run. Cement mix added to brownie mix never makes good brownies. Abiogenetic Disconnects prevent first-stage processes from ever forming products useful for middle-stage steps.

When one looks at the results of the experiments performed at the middle stage, he finds Abiogenetic Disconnects at work again. The problems listed below are representative; there are many others. They all are a manifestation of Abiogenetic Defects.

Problem 1. The Great Divide. An interesting article appeared fairly recently in BioScience magazine, which is published by the American Institute of Biological Sciences. Melissa Lee Phillips wrote a feature article titled, "The Origins Divide: Reconciling Views on How Life Began" (Phillips M. 2010). Although the title speaks of reconciling the various divergent views on the origin of life, in truth there was little if any reconciliation in the article. It offered a history of our understanding of abiogenesis. Whenever someone would offer a proposal regarding any facet of abiogenesis, there would soon be someone else giving sound reasons against its viability. This situation continues until the present. Apart from a statement at the end of the article expressing a hope of success because of Sutherland's approach in forming RNA, the article could well have been written by a creationist, documenting known problems. Of course, we have already seen that Steve Benner pointed out how Sutherland's approach still requires human intervention at certain critical steps.

Here are a few quotes from her opening paragraphs: "Deep divides in opinion are found in almost all areas of origin-of-life research." "If we're going to make any progress, we really have to be critically honest about what we don't know....And that's just about everything." "The questions surrounding life's origins are indeed vast and, for the most part, unanswered." Then, she mentions the large macromolecules which are so critical to the functioning of living organisms and comments, "In modern life, all of these molecules and processes are so intertwined that it's difficult to imagine how any of them could have arisen without the others already in place. Chicken-and-egg problems abound."

The major divide is between those who believe in metabolism first or information first (proteins first or RNA first). Sadly, which side a person takes seems to be the one which he believes has the fewest arguments preventing it. Neither side shows experimentally a working sequence of steps to implement their choice. Somehow, when a person takes a particular position because it has the fewest known fatal obstacles preventing its success, it seems he has left science.

I have claimed that there have been no successful experiments in abiogenesis. This conviction is partly my own observation from reading various journal articles. However, there are a number of articles summarizing the current state of abiogenesis similar to this one by Melissa Lee Phillips. They all only seem to talk about problems. One gets the feeling that if they could just point to one truly successful experiment, they would puff it up to the fullest extent possible. They just don't seem to have anything to puff up.

Problem 2. Amino acids preferentially break apart, not join together. Proteins need to form in water in order to get their proper shape. Their shape determines their chemical action. However, when two amino acids join, a water molecule is released. In an aqueous environment, the natural action is for water to split joined amino acids, not for separated amino acids to join and release a water molecule to the already high concentration of water. So, the normal chemical reaction—splitting—is opposite of that required for life—joining.

Various attempts are made by abiogenists to work around this. Typically, this is by increasing the concentration of amino acids by evaporation or by causing them to adhere to a clay surface. Both proposed solutions have problems.

Evaporation is an unstable process, dependent on widely varying geological and weather conditions. It is unrealistic to expect this to be a consistent, reliable process for the millions of years required for abiogenesis. RNA is particularly sensitive to decay. Under some conditions it lasts only days before it falls apart. It would not take much of an extended dry period to permanently undo any progress. Conversely, extended wet times would keep the raw materials too dilute for usefulness long enough for the RNA to spontaneously decay. In general one should expect varying climatic conditions to occasionally produce an excessive number of dry times and wet times over the course of several million years. This is a significant potential natural barrier against the effectiveness of wetting and drying cycles as they occur in nature as a required process for RNA.

Clay presents a different set of problems. Typically, there will be more clay surface than biochemicals. In the previous chapter we saw how seasonal mud flows into a lake tend to bury all organic molecules. Buried organic molecules do not interact, so burial would prove fatal to abiogenesis. We also saw how Deamer ran into this problem headlong when he performed an abiogenesis experiment in a natural hot spring. The mud quickly adsorbed all of his chemicals.

Thus, concentrating a solution in order to encourage building block molecules to join into proteins or nucleic acids does not appear to be a practical way to solve the problem.

Problem 3. Side Chains. The utility of amino acids comes from their ability to join together to form proteins, which are long strings of typically 100 to 1,000 amino acids chained together. In order for a string to form properly, the amino acids must join end to end. It then folds into various combinations of coils and sheets and in the process takes on the shape of a specific protein. The shape determines its activity.

However, the end of one amino acid can easily connect to the side of another amino acid, forming what is called a side chain. Side chains force a string into a new shape, thus destroying its ability to function properly.

A living cell uses a ribosome and a group of supporting molecules to force the amino acids to join together in proper sequence and without side chains. This is a cumbersome process, requiring many complicated components. However, it has been observed experimentally that without a ribosome, long strands of amino acids in solution do not form spontaneously and any joining that does take place is characterized by multiple side chains. We understand how this is

the result of the normal laws of chemistry. It is not circumvented by blindly repeating the process over and over.

A ribosome is an extremely complicated molecule. It also requires a controlled energy source for its operation. It depends on a group of support molecules such as transfer RNAs and synthetases for its operation. It is also an information-driven component; it cannot function properly without information from messenger RNA being fed to it. So, a living cell has access to and uses an extremely complex system of components and information to constrain amino acids to join together with the proper structure and the proper sequence to form a protein. Pre-life, free amino acids in solution do not have the proper constraints to get the proper results. As a result, in a free solution the natural behavior is contrary to that required for life. There is a disconnect between the products needed for life and the products normally produced by pre-life chemical activity.

Problem 4. Enzyme specificity. Here is a conundrum. Giri *et al* said, “Large molecules such as proteins and nucleic acids are crucial for life, yet their primordial origin remains a major puzzle. The production of large molecules, as we know it today, requires good catalysts, and the only good catalysts we know that can accomplish this task consist of large molecules. Thus the origin of large molecules is a chicken and egg problem in chemistry” (Giri *et al.* 2012).

Giri *et al* proceeded to develop a computer simulation of a proposed solution. However, simulations are nothing more than hypothetical speculation unless they are simulating experimentally confirmed results along with the factors which affect them. Theirs weren't.

The true problem is that one needs to have these results appear as a continuation of Miller's experiment or the equivalent without any human tinkering. We have never come close to showing how this could even be possible—it would require overcoming all six problems mentioned in the previous chapter plus the new ones of this chapter. Yet, this would be only the second step of a long journey.

The problem of getting large molecules was discussed by the late Leslie Orgel in his final journal article, published in 2008. Orgel was a giant in abiogenesis. He was one of the few people to see the Watson-Crick DNA model in 1953 before the journal *Nature* announced the model to the world. He wrote journal articles in chemistry for over 50 years before passing away in 2007. He had a unique understanding of abiogenesis, that of one who had lived it from its beginnings until his recent death over 50 years later. He was head of the Chemical Evolution Laboratory at Scripps Institute in San Diego, California, one of the premier laboratories of the world in his field. He shared an office with Crick for many years at Scripps. He and Crick were the fathers of the RNA World hypothesis. At the time of his death, Orgel was not impressed with the state of abiogenetic chemistry.

The final paragraph of Orgel's final journal article is significant. Basically, he acknowledges the validity and seriousness of the problems we have been discussing. He says in a somewhat cryptic statement,

“The prebiotic syntheses that have been investigated experimentally almost always lead to complex mixtures. Proposed polymer replication schemes are unlikely to succeed

except with reasonably pure input polymers. No solution to the origin-of-life problem will be possible until the gap between the two kinds of chemistry is closed. . . . Solutions offered by supporters of geneticist or metabolist scenarios that are dependent upon ‘if pigs could fly hypothetical chemistry’ are unlikely to help.”

The “prebiotic syntheses” he is talking about include first stage processes, such as Miller’s experiment. These are the ones that supply the building block molecules used to assemble replicating molecules.

The “complex mixtures” are represented by the broad products we saw in Table 1 on page 13, where natural processes make many more contaminants than required products.

“Proposed polymer replication schemes” would be the processes at work in this stage to provide the eventual ability to copy large proteins and RNA.

So, Orgel is saying that the proposed second stage schemes are unlikely to succeed unless they can start with reasonably pure chemicals. (Four times as many contaminants as working stock is not reasonably pure.) Of course, even when the proposed processes do start with pure chemicals they haven’t been able to demonstrate a single successful, significant step of progress. Obviously, starting with extremely contaminated products would make it that much harder.

His next comment, about “no solution,” is particularly significant. Paraphrasing, he says that unless the gap is closed between the products of stage 1 and the requirements of stage 2, abiogenesis is not possible. This is a major statement. Notice—the gap Orgel is talking about is the one between the products of Miller’s experiment and the purity required for abiogenesis. Miller’s experiment will never produce the required purity of molecules. Thus, one of the most qualified abiogenists in history has effectively acknowledged that abiogenesis as it now stands in the light of experimental evidence is impossible.

In the ellipses he mentions a few things people are attempting in order to purify the stage 1 products. However, these have been tried for many decades without success. There is no more basis to expect a “hands off” purification scheme to appear spontaneously than to expect Miller’s experiment to provide pure products without help. Abiogenetic disconnects will prevent either from succeeding.

His final statement is most revealing of all. Whether a person believes in “information first” or “metabolism first” doesn’t matter. If a person’s theoretical scheme of abiogenesis depends on hypothetical chemistry that violates known chemical principles, then it doesn’t help much in solving the “origin-of-life problem.” It is the equivalent of starting a statement, “If pigs could fly, then” Everything that follows is nonsense, because pigs can’t fly.

Compare Miller’s experiment with Watson and Crick’s model of the structure of DNA. Both date to 1953. The DNA model has been extremely fruitful; it provided the foundation for most of the developments of modern biochemistry. By contrast Miller’s experiment initially got hopes up for many people that man could now explain how he got here without calling on a Creator God. Yet, 60 years later, not a single true advance has been made toward this. However,

a stream of new problems, each of which is also potentially capable of thwarting success, have been discovered.

If one looks carefully at the issues that concerned Orgel, they can be traced back to two words: “Abiogenetic Disconnects”

If the Bible is true, if God did create the universe including the life that is in it for it to reveal itself to be the handiwork of a living, personal, Creator God, then Orgel’s observation is consistent what we should expect.

Problem 5. Statistical Probabilities. (This section is rather technical and may be skipped by those without a mathematical background.)

Here is a critical problem: an emerging system needs a reliable energy source from its earliest steps. However, the enzymes used to provide this will take multiple Googols of years to make through random processes. There is no rational basis to expect them ever to appear. The extreme complexity of the enzymes that bothered Orgel in his final article were the ones needed to appear very early in abiogenesis. His concern was legitimate.

A Googol is the number “1” followed by 100 zeroes. It is so big that changing its value by plus or minus ten billion does not show up until its 90th significant figure. Ten billion years, the approximate age of the universe estimated by some, would not even be discernible on a scale of Googol-year increments.

In an article posted on the web (Stout T, 2014) I show that a Googol *years* is not long enough to form randomly a specifically-needed enzyme of 167 amino acids under extremely idealized, theoretical conditions. An enzyme of 267 amino acids would be diluter than this by yet another Googol. Every 100 additional amino acids in an enzyme reduces the concentration by yet another Googol.

What is the significance of this? It takes energy to do the various functions of a cell. Cells typically use a kind of molecule called “ATP” to provide tiny packets of energy for cellular operation. Every kind of cell using oxygen to burn fuel converts the fuel into ATP molecules using what is called the “Krebs cycle.” For every atom of oxygen used to burn a sugar or fat molecule supplying fuel for the Krebs cycle, two molecules of ATP are produced. Unlike typical random energy sources, these tiny power packets are just right for biochemicals: weak enough not to damage the products being worked on and powerful enough to accomplish a task. The Krebs cycle requires eight different enzymes. Missing any one of them is fatal to proper cycle operation. These enzymes are huge in size.

Let’s look at just 4 of them. One of them, called *malate dehydrogenase*, is made from over 300 amino acids. It should take well over a Google years to generate a single, isolated copy of this enzyme through random processes. Another, called *citrate synthase*, uses 437. In life, these two enzymes are used in equal numbers. By contrast, a random sequence will be over a Googol times more likely to generate *malate dehydrogenase* than *citrate synthase*. These are the easy ones. By contrast, *Succinyl CoA Synthetase* is made from two identical strings of 693

amino acids each. This will be hard to get. However, that is simple compared to *Succinate Dehydrogenase* which is over 1,100 amino acids. To get the Krebs cycle to work, all of these enzymes plus others need to be attached to a wall of some sort next to each other in sequence. This provides an “assembly line” for processing the steps. Many copies of such assembly lines are required for each cell.

There is a reason these enzymes are composed of so many amino acids. Orgel explained in the main body of his final article that highly specific enzyme activity is required for the cycle to function properly. Small enzymes cannot provide the required specificity. Therefore, extremely large ones are required. In other words, the cycle won't work with smaller enzymes.

When one considers that the human body has over 10,000 different enzymes averaging over 400 amino acids apiece, the complexity of life becomes staggering. Most of the enzymes would not appear randomly under ideal conditions even in a Googol years. Yet, these enzymes are merely building blocks for a cell, such as construction supplies at a lumber yard are for a house. The true complexity is in putting them together properly. How to represent the instructions to do this by a sequence of nucleotides stored in a genome is beyond current human comprehension.

Evolutionists such as Dawkins in his book *The Blind Watchmaker* (Dawkins R. 1987) propose a process called cumulative selection as a way around the statistical problem. However, cumulative selection does not work, because natural selection cannot choose between the better of two options when both fail. Natural selection cannot choose which of two sequences of amino acids is closest to being able to function effectively as succinate dehydrogenase until at least one of them already does. Therefore, the first appearance of a required enzyme needs to take place in a single-step at the right place and the right time in the proper quantity. Dawkins' process of cumulative selection works fine with computer simulations with computer programs which were hand tailored to produce the desired results. It doesn't apply to the realities of life. The astronomical odds against forming a required group of nucleotides or amino acids represent an extreme example of Abiogenetic Disconnects.

Cumulative selection also assumes an already working system, capable of translating nucleotide sequences into proteins. So, it is useless in forming the proteins needed for the first appearance of such a system.

Problem 6. Replication. Replication refers to copying a cell or molecule. It is one of the basic characteristics of life. I will be brief in discussing the problems associated with replication.

An already living cell assembles free nucleotides to form strands of RNA. This is done by an enzyme or combination of enzymes adding a specifically required nucleotide one at a time to a forming string according to a sequence defined by a template. The enzymes to do this properly are long, typically over 400 amino acids in length.

Some abiogenists propose that before living systems used amino-acid based enzymes, they used nucleotide-based “ribozymes” to do the same function. To this end there is a lot of experimental effort at work to uncover a string of nucleotides that could assemble free

nucleotides from a solution into a sequence in accordance with a supplied pattern. So far the results are not promising. Here are a few problems that are discussed in the literature. They may be viewed as yet more instances of Abiogenetic Disconnects.

1. RNA has a very short lifetime, typically from hours to days, depending on temperature and other factors. Any interruption in the supply of RNA nucleotides as nutrients to an ongoing copying operation which is longer than this could result in all of the key RNA molecules disintegrating during the delay, thus destroying any progress. There is a disconnect between the rapid natural decay of RNA and the stability needed for it to be useful in a pre-life environment.

2. As an illustration, Johnston *et al* (2001) developed a 176-nucleotide RNA molecule capable of copying strings of RNA. It spontaneously disintegrates while copying strings longer than about 14 nucleotides. Thus, it typically disintegrates before it has copied less than 10% of itself. This illustrates just how severely RNA's short lifetime impacts abiogenesis. 176 nucleotides is much too many to reasonably appear in a single step. Yet, even this is not long enough to give the copying efficiency required for it to make a copy of itself before it spontaneously decays. This is another disconnect between natural behavior and the requirements of abiogenesis.

3. "Parasites" have been observed with experiments studying replicators taken from already living cells. Parasites are molecules which do not make a useful contribution to cellular activity, but get copied by the replicator, consuming nutrient nucleotides in the process. Parasites can be small molecules. Small molecules are generally more active than larger ones, so replicators will tend to preferentially copy them. Eventually, the parasites starve the system, progress stops, and RNA's rapid natural decay soon destroys everything. There is a disconnect between the natural indiscriminate copying by simple replicators and the need by abiogenesis for only useful molecules to be copied.

"I am the LORD, that is My name; and My glory
I will not give to another..." (Isaiah 42:8).

Chapter 4 Information: God's Signature Written in a Cell

It does not take a deep technical background to follow the arguments of this chapter. Yet, they are decisive. They make a natural origin of life impossible. Anyone willing to take the effort to work through the next seven pages should be able to understand why.

Living cells are information-driven machines. This single observation does away with the possibility of an evolutionary origin of life. Information-driven machines consist of two separate but essential components: a body of information stored in a medium and hardware to read the medium and use the information. Each of the components need to be in operating condition for the system to be effective.

A computer provides an example of an information-driven machine. Both the hardware and the software must make their first appearance simultaneously in already working form. This requirement is the heart of the argument. By definition single-step appearance is not evolution.

The requirement of a simultaneous first appearance of both hardware and the information controlling it is characteristic of information-driven machines in general.

A living cell is also an information-driven machine, so it follows the same pattern. The physical components of a cell that are needed to process and use cellular information have no value unless the associated information is present. Likewise, the information has no value unless the physical cellular components used to read and process the information are present. Both need to function properly. Both need to make a simultaneous first appearance. The tiny, gradual steps of progress which define evolution are not capable of producing a cell.

There is an added level of difficulty concerning a living cell. The instructions on how to make the various physical components to read the information are only found in the cell's information. So, the parts needed to read the information cannot be made using the information until the parts already exist. This entire system is much, much too complex to appear spontaneously through natural processes alone in a sudden step. Indeed, the entire purpose of evolutionary theory is to reduce the size of steps needed to produce major changes to individual steps of insignificant size. This doesn't work here.

A major issue concerns the minimum amount of information required to build a minimal cell capable of self sustenance. The amount appears to be staggering. For instance, 160,000 nucleotide base pairs are used in the DNA to define the genetic content (genome) of a certain parasite. However this parasite cannot sustain independent life on such few base pairs; it is dependent on its host to perform certain functions it cannot. It cannot do these because its genome is not large enough to contain the information required to do them. (Nakabachi A. et al. 2006).

An atheistic scientist is faced with a set of severe problems. 160,000 base pairs represent far too much information to show up correctly in a single, random step. The atheist must either take the unscientific position of giving up the laws of statistics, must acknowledge that science points to a Creator God, or must justify how a much smaller number, one which is reasonably probable, could specify the minimum number of base pairs required to define a working cell capable of sustaining an independent existence.

Realistically, the maximum number of base pairs that could be rationally expected to be generated through random processes in a single step would be well under 100. The difference in difficulty between assembling 100 base pairs randomly and 160,000 base pairs randomly is staggering. (For the mathematically minded, the ratio in difficulty would equal $4^{160,000/100}$, which is approximately equal to 10^{1000} . This number is so large it dwarfs a Googol. For one who believes in a Creator, the discrepancy between 100 and 160,000 base pairs reveals the greatness of God's power and wisdom. Science becomes a tool for us to marvel at God's wisdom and power.)

Evolution theoretically advances by taking a working system, making slight changes to the information defining it, and then using natural selection to give reproduction preference to whichever alternative has the better reproduction value over its competition. However, this concept requires an already working system before it has value.

Natural selection cannot select between the better of two failures. This statement is foundational to our entire argument. It precludes the possibility of converting a random assortment of data symbols by an evolving series of steps into a large body of coherent information. From the beginning, the information must be capable of reliably operating the hardware. The hardware must be capable of reliably read, translating, and using the information. This in turn means that evolutionary processes are powerless to create the first living cell.

Mutations and Information

It is impossible to create a large, complex body of information by making random changes to a group of randomly sequenced symbols. According to the principle of entropy, discussed in the next chapter, a large number of random changes will ultimately destroy any kind of existing order; this includes an organized set of symbols defining information. This precludes forming order from scratch.

Suppose a string of one thousand nucleotides is required to code for a new enzyme. Suppose only a single nucleotide is improperly coded and prevents the new enzyme from functioning properly. It will then take an average of one thousand mutations to the string before the errant symbol is changed. Even then, a mutation to the defective nucleotide may simply introduce a new error and not fix the problem. Since the enzyme was not working properly to begin with, natural selection cannot distinguish between variants with many mutations and those with few—natural selection cannot choose between the better of two failures. By the time the string has been mutated a thousand times without defects being removed, any information initially present will have been pretty much obliterated. Notice, more time and more mutations do not fix this problem. This is a significant issue that is never taught by professors of biological evolution to their students.

This problem makes it easy to understand Dr. Dose’s comment in the opening paragraph, “we do not actually know where the genetic information of all living cells originates.” It is certainly not through evolutionary processes of mutation working with natural selection.

Coded Information: a Product of Intelligent Thought

The kind of information used in a cell may be classified as coded symbolic information. Coded symbolic information is information in which an abstract meaning is represented by a sequence of symbols arranged according to a code. The DNA nucleotides (sometimes called *codons* by biologists) function as the storage medium for the information stored in a living cell.

An intelligent mind can assign meaning to things it understands. It can then invent a code to represent this meaning. Information is the coded representation of meaning. The concept of *meaning* is extremely broad, essentially limited only by the intelligence and experience of the one inventing the code. Of course, the laws of physics are not dependent on the intelligence of the objects acted on for their effectiveness. By contrast, the levels of meaning and the sophistication of codes to represent the meaning are dependent on the intelligence of the one inventing and implementing them. This establishes coded information as the domain of intelligence, one outside of the normal laws of physics and chemistry.

As an illustration of a simple form of information, consider the cardinal numbers 1, 2, 3, etc. These can be represented by ink shapes on a sheet of paper, by sounds such as spoken in any of the languages on our planet, or by any other set of symbols a person chooses to invent. A person could even invent a code to represent a limited quantity of numbers by certain smells if he chose to do so. Notice, there is absolutely no relationship between the physical structure representing the meaning and the meaning itself. The only relationship is in the mind of an intelligent being—or in hardware he designs to translate it.

However, *meaning* is not limited just to simple things like cardinal numbers. Poets can have very subtle shades of insight into the experiences of a living human being that go beyond normal words to express. Such insight is a product of intelligence. The poet then expresses these insights with symbols on a sheet of paper. The meaning can then be communicated to other intelligent beings, even though in the case of artistic works, effective communication is also dependent on the observer's intelligence and background. There are no principles of physics or chemistry which preferentially define a code to represent the insights of a sensitive poet, even though the medium—words on a sheet of paper—is a physical entity which can be studied.

Einstein learned and discovered new concepts of relativity and gravity and then invented a way to express these concepts using words and symbols; their expression represents information. The meaning of the symbols he used is far beyond my capacity to understand. That is because information is a product of intelligence and I do not have the intelligence or the training to understand the information Einstein created. To me his information has no meaning. To one with the proper intelligence and training, the information Einstein gave us is full of meaning.

Therefore, the formation of codes to represent meaning is an intellectual function. Natural chemical and physical processes do not invent codes nor form abstract relationships. This in turn requires an information-driven machine to be designed and built by an intelligent being.

Humans can design and build computers. It takes a living Creator God to design and build a living cell.

The code used in a living cell is extremely complicated. A person can easily access a discussion of the genetic code from a source such as Wikipedia, and study the “triplet” coding used to associate a sequence of nucleotides with a sequence of amino acids. However, that is only the trivial part of the code. Embedded within the genetic information of a cell are all kinds of control sequences that scientists are only just beginning to understand.

If a person reads the science journals, he finds that those scientists trying to give an evolutionary explanation for cellular information and a translation system to use it have hit a “brick wall” head on. They do not have the slightest clues about the origins of the genetic code or the origins of the translation system needed to implement it. They still haven't deciphered the control mechanism embedded within the code. For instance, if you cut your finger, your body will go through a healing process. That process is defined by various sequences of nucleotides in your genes. What is the code that defines the nucleotide sequence for this process? Which genes implement it? So far, no one knows.

The translation system of a cell consists of the cellular components used to extract information from DNA, feed it to a ribosome, and assemble amino acids into enzymes. Wolf and

Koonan made a concerted effort to figure out how this might have happened through evolutionary processes. This is their conclusion:

“The origin of the translation system is, arguably, the central and the hardest problem in all evolutionary biology. The problem has a clear catch-22 aspect: high translation fidelity hardly can be achieved without a complex, highly evolved set of RNAs and proteins but an elaborate protein machinery could not evolve without an accurate translation system.” (Wolf W. and Koonin E. 2007, Abstract).

“...the fundamental problem we wish to address here: the origin of the translation system and the genetic code. Indeed, the translation system might appear to be the epitome of irreducible complexity because, although some elaborations of this machinery could be readily explainable by incremental evolution, the emergence of the basic principle of translation is not. Indeed, we are unaware of translation being possible without the involvement of ribosomes, the complete sets of tRNA and aminoacyl-tRNA synthetases (aaRS), and (at least for translation to occur at a reasonable rate and frequency) several translation factors. In other words, staggering complexity is inherent even in the minimally functional translation system...

“Even this does not do the full justice to the difficulty of the problem. The origin of translation appears to be truly unique among all innovations in the history of life in that it involves the invention of a basic and highly non-trivial molecular –biological principle, the encoding of amino acid sequences in the sequences of nucleic acid bases via the triplet code [15,16]. This principle, although simple and elegant once implemented, is not immediately dictated by any known physics or chemistry (unlike, say, the Watson-Crick complementarity) and seems to be the utmost innovation of biological evolution (Wolf W. and Koonin E. 2007, p.2).

All Wolf and Koonin can do is marvel at the wisdom shown in the elegance and inherent simplicity of the genetic code and the hardware to read and use it. To them it represents the utmost innovation of evolution. They certainly cannot explain how natural processes could have produced it. Their observation that there is no known physics or chemistry to produce the triplet code gives us yet another Abiogenetic Disconnect.

However, I would disagree with them on one account. There is something in a cell far more innovative than this. We have already mentioned it: it is how a cell uses stored information to control when the various cellular components get built, control how many of them are built, and control how they are used. Coded control information is used to regulate how a cell puts the pieces together and operates. The code defining how to do this represents a level of innovation and complexity far beyond that of the simple triplet code. Scientists have not even begun to figure out how natural processes could *invent* and *implement* a code of this complexity. The reason is simple: Coding is a product of intelligence, not physics.

Science reveals to us all manner of difficulties that block a spontaneous, evolutionary origin of life. It does not give us reasons for believing a natural origin is possible. After 60 years of efforts, the findings of the modern field of abiogenesis are completely consistent with

creationism. **Those who continue to believe chemical evolution do so because of personal philosophical convictions, not because of the testimony of science.**

Since a living cell is an information-driven machine, the first appearance of the cell must have every single one of the following cellular components working satisfactorily:

1. A medium capable of storing coded information.
2. A huge body of debugged coded information stored in the cellular medium, requiring perhaps a minimum of 100,000 base pairs.
3. The entire translation system for extracting and using the information. This includes messenger RNA, ribosomes, synthetases, transfer RNA, etc., all of which need to appear in working order in a single step.
4. An energy system such as ATP for supplying energy to cell components, including the translation system.
5. A fuel source to drive the energy system (photosynthesis or the means to use external sources of nutrients).
6. A waste removal system.
7. A cell membrane.
8. A cell replication System.

With the exception of replication, if any one of these systems does not function properly, none of the others can either. Since replication is needed to replace dying cells, all of the above components need to appear together in working form from the beginning.

At a certain point we need to say enough is enough. The use of information to control and build the components of a cell is conclusive. It is impossible for natural processes to create living organisms such as we see around us. Thus, life had to come from a source outside of natural processes. The use of information points to an Intelligent source. This in turn points directly to a Creator God as the source of life, a God who is intelligent, has a will, and has the power to intervene into the affairs of His creation to bring into existence in a single step the living cells He designed.

Often an artist will sign his name on a painting to show that he painted it. In the same way, the information stored in the DNA of a living cell may be viewed as the signature of God showing that He is the one who placed it there.

“He has made the earth by His power, he has established the world by His wisdom, and has stretched out the heavens at His discretion” (Jeremiah 10:12).

Chapter 5. Entropy and Abiogenetic Disconnects

Abiogenetic Disconnects are a manifestation of the principle of entropy. Entropy is the principle that random changes to an organized system tend to destroy its order. By contrast, the steps of abiogenesis contradict this; each step requires random changes to produce higher degrees of organization. This should be a warning of potentially serious problems. The warning becomes validated when a person looks at the details of various experiments performed in

abiogenesis over the years. They all reveal problems. Analysis shows these problems are the direct result of entropy acting on the processes. This means that the observed problems truly are problems; they are not just the result of an improperly performed experiment.

If a gallon of hot water is mixed with a gallon of ice water, the resultant temperature will be between the two original temperatures. The molecules of the hot water have more energy than the molecules of the cold water. This is an important concept: Separation of high energy molecules from low energy molecules represents organization. However, when the two gallons are mixed together, the temperature shifts to a point between the two original temperatures. As the mixture reaches a uniform temperature, the organization originally present disappears, as well as the ability for the system to do useful work.

By contrast, the molecules in a bowl of water at lukewarm temperature do not spontaneously organize themselves such that ice forms at the bottom of the bowl and steam at the top. This would represent spontaneously increased organization. Entropy illustrates an arrow of time. Random changes tend to destroy existing order. They do not produce new levels of organization. Time doesn't go backwards.

The water in a bowl can be turned into ice. However, this will require an external source of energy. Typically, though, this energy will need to be applied by some sort of hardware apparatus, such as a refrigerator. The kind of energy and its amount must match the requirements of the hardware apparatus, such as 120 VAC for household refrigerators. Setting off a bomb in a refrigerator supplies energy but does not produce ice, it destroys the refrigerator.

In chapter 2 we saw how Miller's experiment works by randomly ripping apart and recombining the molecules in a spark chamber. A complex mixture of chemicals is the natural result. For Miller's experiment to suddenly produce only amino acids and those in useful ratios with each other would be an organizing process, similar to ice forming spontaneously at the bottom of a bowl. Entropy prevents each from happening.

Entropy is an extremely broad principle and applies to many domains unrelated to each other. Applied to heat flow, it becomes the second law of thermodynamics. Applied to information theory, random changes to a body of information, such as a computer program or a genome, tend to destroy existing information, not create new information. Concerning the arts, a mistake in a music performance rarely adds to the performance, but distracts from it. One stroke by a monkey with a paintbrush can ruin a Rembrandt painting.

Entropy can also be applied to abiogenesis. There is no principle of science to constrain a process such as Miller's experiment to produce only that portion of its normal output which would be suitable for abiogenesis. Entropy thus guarantees that the broad complex will be produced.. Calling the behavior *Abiogenetic Disconnects* instead of entropy merely indicates the domain in which entropy is operating—not heat, not music, not art, etc.

There is another characteristic of entropy. Sometimes, a random fluctuation can produce momentary order. However, this order is only temporary. Eventually the order will be overwhelmed by the sheer magnitude of the random events. For instance, if a person rolls a pair

of dice enough times, he will occasionally get double sixes (or any other number for that matter) three times in a row. It is possible this could happen the first time he tries it, which would give a false appearance of organization: double sixes would appear to be preferred over other numbers. However, as the number of dice rolls increases, entropy will cause the momentary appearance of organization to disappear. Ultimately, the momentary appearance of order is overcome by the overwhelming magnitude of the normal, random results. Eventually, a truly random final assortment prevails. This is entropy in action.

Many abiogenists seem to assume that if the elapsed time is long enough, these random fluctuations would be adequate to allow life to accidentally appear. However, these assertions are only rhetoric; they are not backed up with calculations. Creationists can show calculations such as presented in Chapter 3 part 5. These calculations show that a Googol years is not long enough for random processes to produce a single typical enzyme. Dawkin's cumulative selection is the typical response to this problem. Yet, it is based on faulty assumptions, ones that do not apply to real life. Thus, entropy truly prevails as confirmed by experiment after experiment. *

Entropy not only shows itself in first-stage processes, but interferes with a natural origin of life every step of the way. It's as though God has placed a series of barriers against a natural origin, such that the first one should be fatal to the process. If it is not, then a whole string of potentially fatal scenarios provide a series of backups to insure ultimate failure. The use of coded symbolic information in the last step insures that abiogenesis cannot occur.

Biologists seem not to understand entropy very well. For instance, many biologists have a standard response to claims by creationists that a natural appearance of life is contradicted by the principle of entropy. They claim entropy only applies to a closed system. The sun adds energy to a chemical reaction towards abiogenesis and this energy can drive a system to the organization required for life.

They don't seem to understand that without the specialized hardware which is energized by the discrete units of energy used by a living cell, useful products of life are not produced with the purity needed, when needed, and where needed. Sunlight in a pre-life scenario, that is, one before the specialized enzymes used in a living cell have come into existence, will essentially function as a variant of Miller's experiment. There is no scientific basis to expect success. Sunlight energy does not automatically overcome entropy. A bomb does not turn a wagon into an automobile.

Ilya Prigogine won the Nobel Prize in Chemistry in 1977. He demonstrated that in a system far from equilibrium, self-organization can take place. An example of this would be the formation of an organized thunderstorm when a stable mass of cold air collides with a stable mass of warm, moist air. Evolutionists like to extrapolate this principle to the appearance of life. Simply supply an unstable mix of raw chemicals and self-organization can appear, giving us the steps useful for life and circumventing the normal restraints of entropy.

It does not take much insight to see the fallacy of this argument. The appearance of a thunderstorm follows very precise laws of physics. Its behavior is predictable within our limits to measure initial conditions. Prigogine's self-organization still follows strict guidelines.

Likewise, in a pre-life scenario, an energy source such as a spark can make raw chemicals unstable. As a result they can self-organize into a wide range of complex products. However, just as a thunderstorm follows established laws of physics, the products of a pre-life scenario such as Miller's experiment will follow established laws of chemistry. This is exactly what we observe in the table showing the results of Miller's experiment on page 13. The chemicals formed represent self-organization. Since there is nothing to constrain the products produced to be suitable for life, suitable products do not appear. Self-organization still follows strict guidelines. The principle of entropy proves fatal to abiogenesis.

Chapter 6 Evolution After Chemical Evolution

It is generally accepted among scientists dedicated to the study of abiogenesis that going from the simple chemicals found on a planet without life to the complexities of a single living cell is more difficult than going from a living cell to all of the varied forms of life around us. For instance, Margulis (1996a) said, "To go from a bacterium to people is less of a step than to go from a mixture of amino acids to that bacterium."

From this perspective, the steps of evolution proposed by Darwin in his *The Origin of Species* are the simple ones. The hard steps are those of chemical evolution, of those to get to the first cell. The thesis of this booklet has been that science itself teaches that a living God is necessary for these, the hard steps. This raises a significant question: If God is needed for the hard steps, why exclude Him from the easy ones? If God created the first living cell fully formed and in a sudden, single step, then why could He not have created higher forms of life in a single step as well?

The Bible teaches that God created *kinds*, not species. *Species* is a modern-day taxonomical category with a technical definition which is unknown to the Bible. So, then, how much variation would be possible within a Biblical *kind*? Fortunately, the Bible gives us a general basis for making a reasonable estimate of the answer to this question. It is definitely not zero.

We read, "Then God said, 'Let the earth bring forth grass, the herb that yields seed, and the fruit tree that yields fruit according to its kind, whose seed is in itself, on the earth,' and it was so. And the earth brought forth grass, the herb that yields seed according to its kind, and the tree that yields fruit, whose seed is in itself according to its kind. And God saw that it was good. So the evening and the morning were the third day" (Genesis 1:11-13).

The little phrase "whose seed is within itself according to its kind" is the key to properly understanding what God created. These nine words are unique to the Bible. To my knowledge, neither they *nor their equivalent* are found in any other ancient document, religious or secular. Yet, these words provide the key towards building a model which is far superior to the modern evolutionary model for understanding the characteristics of observed variation in plants and animals.

Seed is used in the Bible as the means of reproduction. Angels do not reproduce and do not have seed. Stars do not reproduce by means of seed. Plants do. Furthermore, seed is

“according to its kind.” Reproduction only takes place within a kind. Wheat does not fertilize an apricot tree. Grapes do not fertilize poison ivy. Furthermore, wheat and apricot trees do not interbreed. Nor do grapes and poison ivy. Therefore, significantly, if two different types of plants can be bred together and produce living offspring, then they initially came from the same creation-day kind. Understanding the significance of this gives an entirely new perspective on taxonomy, which is the scientific classification of the various forms exhibited by life on earth.

Next, we read the account of animal creation in Genesis 1:25,

“And God made the beast of the earth according to its kind, cattle according to its kind, and everything that creeps on the earth according to its kind. And God saw that it was good.”

The significance of this passage is that God also made the animals in distinct groups according to various kinds and a few verses later, in Genesis 7:3, the Bible says that animals also have reproductive seed.

We now have a model based on the creation account of the Bible. In this model, God created various kinds of plants and animals already fully formed. We have seen that science teaches us that an initial, fully-formed creation was required for the first cell. The Bible merely extends this to include large, multi-cellular animals and plants.

Each kind was provided the innate capacity to reproduce itself by means of seed. Reproduction only takes place within a kind and not outside of it. Therefore, if two dogs can mate and produce living offspring, then according to this model they came from the same initial kind. If a dog and a wolf can mate and produce living offspring, then they came from the same creation-day kind. Likewise, if two different types of cats can reproduce with each other, they came from the same creation-day kind. However, cats and dogs do not hybridize; they do not mate with each other and produce living offspring.

This model allows for some interesting studies. For instance, if one does an internet search on the phrase, “cat hybrid,” he will find that a house cat can produce living offspring by breeding with an ocelot. So, a house cat and an ocelot came from the same creation-day kind. The same results take place with an ocelot and a puma, a puma and a leopard, and a leopard and a lion or tiger. Thus, all of these cats came from the same creation-day kind. As a result, we find an unbroken succession of hybrids linking a house cat to an Asian tiger.

It appears that all of the modern cats within the taxonomic classification Felidae, commonly called the cat family, originated from a single creation-day kind. This is interesting. By looking carefully at what the Bible teaches and then applying it to a study of the things we see around us, we gain a tremendous insight. The creation-day kinds were created with a huge potential variation. This is the exact opposite of what Darwin believed. His theory of evolution was presented as a solution to a problem which did not exist.

It would not be necessary for the hybrid offspring to be still fertile today. The modern-day divergence between the parents from the original kind could be great enough to prevent their

having fertile offspring even though they can have living offspring with each other. A horse and a donkey producing a sterile mule would be an example.

Cats represent one family within the order Carnivora, the carnivores. Internet searches show that the pattern of hybridization within the cat family also applies to dogs, bears, and seals.

However, the pattern is not limited to the Carnivora. It also applies to cattle and oxen. Another CSRQ article indicates that an early broad study places many of the original kinds near the family taxon (Wood TC. 2006). A yet different CSRQ article discusses how there is extensive hybridization among snakes. (Hennigan, 2005).

We can speculate concerning a plausible reason God created the initial kinds with such large potential variation. Doing this has allowed their descendents to fill all kinds of changing environmental niches without Him needing to create new forms for them.

There is a biological principle called “adaptive radiation.” This is a standard biological term and frequently observed in the fossil record. If an animal or plant is introduced into a new ecological environment with a number of differing niches available, and if the plant or animal is capable of filling those niches if it is modified a little bit, then the original form will modify into specialists to fill the niches. It is as though the original form “radiates” into different adaptations to meet the needs of the niches. Thus, an early cat kind could radiate into house cats, bobcats, ocelots, cougars, panthers, lions, tigers, cheetahs, etc.

If the information required for an adaptation to take place is already present in the genes, then the radiation can proceed quite rapidly. For instance, suppose that an original cat-kind had the genetic potential to form all of the cats from house cats to Asian tigers as well as yet others which are in the fossil record but now extinct. Further suppose that the initial environment had the equivalent of today’s mice and zebras available as food supplies. House cats do not kill and eat zebras. African lions do not survive on mice they catch. Various alternatives of gene combinations would give different characteristics to the offspring of the original cat kind. Some of the offspring could be small and become mouse predators. Others could become large and relish zebras.

It is conceivable that perhaps only 50 generations would be sufficient to establish the major divisions in the cat family, perhaps at the genus level. This would only require fifty years of elapsed time at one generation per year. Then, over the course of time yet more specialization would eventually produce the species we see around us today. So, if the information for adaption is already in the genes, the adaption can take place quickly, perhaps in only a few decades.

The traditional, historical taxonomical system of classification is based on the following categories, with representative examples leading towards lions and tigers:

1. Kingdom. (**Animals**. Plants. Molds).
2. Phylum. (**Chordates**. Arthropods. Mollusks).
3. Class. (**Mammals**. Fish. Amphibians. Reptiles. Birds).
4. Order. (**Carnivores**. Primates. Bats. Rodents).

5. Family. (**Cats**. Dogs. Hyenas. Bears. Skunks).
6. Genus. (**Roaring cats**. Purring cats).
7. Species. (**Tigers, Lions**. Panthers. Leopards).

It appears that according to this system of classification, in many cases the original kinds would have been at the level of the family. In such a case, classifications higher than the family, i.e., those between Order and Kingdom, would simply represent a convenient way to organize the original kinds into hierarchical groups having similar design features. The distribution of these characteristics would have been made according to the personal preferences and whims of the Designer. However, nothing in the Bible requires an initial Biblical kind to be the exact equivalent of a taxonomical family, even though it appears this might be the case much of the time. Some of the original kinds might have actually been closer to the taxonomic level of a genus (such as cattle) or an order (whales). See article at <http://www.icr.org/article/real-nature-fossil-record/>

The Flood of Noah

According to the Bible in Genesis chapters 2-10, God created an initial man and woman, Adam and Eve, who disobeyed a simple command not to eat the fruit of a certain tree. In consequence to that disobedience, Adam died spiritually immediately, as shown by his running from God. We, his descendants, are still trying to avoid Him. Adam also eventually died physically, even as now we also all die physically. Men know of God, but want to be their own God (humanism dates back to the days of Adam). The entire universe is corrupted and under a curse. As a consequence to this disobedience, the entire human race has inherited an overpowering desire for sin. In the early days of man's history, personal rejection of God and his standards led to a world full of violence, similar to what we see happening today. Eventually, God decided to destroy the entire world that existed at the time by a world-wide flood. The animals and plants buried in the flood became the fossils we see today, with a few minor exceptions. The flood took place about 2,000 years after the days of creation and a little over 4,000 before the present time.

People today have become so steeped in evolutionary theory that the above account seems ludicrous. It is difficult for many to understand how anyone could believe it. Yet, God tells us in the Bible that we should expect this reaction. In the opening verses of 2 Peter 3, we read that the days will come when scoffers will reject the Biblical teaching about the authority of Jesus Christ and a coming time when He will return to rule over the world. The basis for their rejection will be what today we call "uniformitarianism," which provides the philosophical foundation of evolutionary theory. However, the scoffers will actually be *willfully ignorant* that earlier in man's history God judged with a flood of water those that rejected Him. The flood is intended to be a warning that God does judge and that modern sins will bring a new judgment, although the coming judgment will be with fire and not water.

The significance is that God is indirectly telling us to expect that there will be abundant evidence of the earlier worldwide judgment by water. However, people will *willfully scoff* at the evidence because they do not want it to be true. So, we should not be surprised at the hostility of modern man against the notion of a recent world-wide flood. Man will do everything in his

power to cover the evidence. He will twist and distort the evidence and deliberately draw false conclusions from it. His main weapons will be slander and ridicule.

The mocker should be aware that God knows of this coming rejection of the message and told us to expect it. Hence, the God of creation, i.e., the God who invented the laws of science, who created matter and energy out of His own innate power, and who designed the intricacies of living organisms and made the life forms we see around us, is not impressed with the modern evolution-based arguments against the recent world-wide flood. He decrees that from His perspective, He has provided us with sufficient evidence to confirm the truth of His message. We need to be very careful at placing our wisdom above His.

Let's suppose that the Biblical account of the flood is true. What would we expect the fossil record to be like?

First of all, it should be noted that until very recently, geologists taught that fossils were formed by burial in lakes, with sediments deposited at the rate of about one layer per year or at most only a few. Now it is recognized that this is false. Fossils do not form in lakes today—scavengers and decay destroy the material faster than sedimentation can take place. Instead, fossils require rapid burial by several feet of mud. This typically happens only in moving water. This most often happens during a flood, although a mudslide or a tsunami can provide local, small scale fossilization.

Just how big a flood would be required? Fossils can be distributed throughout a large formation extending over hundreds of thousands of square miles. There are no floods of this size today; but such would be consistent with the scope of the Biblical world-wide flood.

Recent studies have shown that moving waters in a major flood can deposit thousands of layers many feet thick in only a few hours. For instance, at a particular location near the Mt. St. Helens volcano eruption site in 1980, 25 feet of thin-layered, stratified mud was deposited in less than a day on June 12, 1980 (Austin, S. 1986). Yet, this was nowhere near the scope of what could take place in a world-wide deluge.

As a starting point of analysis, since mud deposits from floods typically form stratified layers, according to the Biblical flood model, we should expect to find stratified rock throughout the world. This is the case.

The flood took place several thousands years after the days of creation spoken of in Genesis 1 in the Bible. This would have given ample time for the initial kinds to have radiated into various specialists as they adapted to various environmental niches. However, the specialists would have been much more similar to each other than to unrelated kinds. Typically, the initial kinds would have been capable of a wide range of characteristics for a large number of features. Each specialist would represent a certain assortment of the possible characteristics. Assuming that many of these characteristics were distributed independently of each other, then a diagram of their relationship to each other would look like a bush, not a tree. This is exactly what is observed in the record.

The flood took place in under a year. This is not sufficient time for any observable evolution to take place. Thus, various species (specialists) would be identifiable in the record, but would be static in their characteristics. There would be gaps between the species; i.e. in general there would be no strings of fossils showing one species evolving into another one. However, even today a single species can appear to get larger as it is located farther north; apparently larger size helps protect against cold. The fossil record could show various grades of characteristics between organisms living at the same time under slightly different ecological conditions. These could give a false appearance of evolution within the fossil record. Since the record would be a snapshot, the appearance would not represent true evolution of one form into another.

The fossil record would also show gaps between the kinds. This is obvious, since links between kinds would never have existed. So, for example, there would be no fossil trail between fishes and amphibians, between amphibians and reptiles, and between reptiles and birds or mammals. By contrast Darwin expected that most of the fossils would appear as what we consider “transitional forms.” Yet, these are not found in the record. Many times evolution is pictured as a tree, with initial forms at the bottom and evolutionary changes being represented by the trunks and the limbs until we finally today would have the modern species being at the tips of the branches. Darwin was concerned because according to his theory, most of the fossils should have been along the trunks and branches. Instead, they are all at the tips. The connections characterized by his theory do not exist in the record.

So, what do we find when we examine the fossil record? We find that it matches the above characteristics: species are static, they don’t evolve within the record. Gaps exist between species at all levels. There are no fossils showing the path to a new, distinct family from a supposed lower level ancestor. Fossils reputedly linking different families are rare and typically controversial in interpretation.

With this in mind, here is an interesting quote from a book on evolution: "The evolutionary origins of taxa in the higher categories are poorly known.... Most order, classes, and phyla appear abruptly and commonly have already acquired all other characters that distinguish them.... We are forced to the conclusion that most of the really novel taxa that appear suddenly in the fossil record did in fact originate suddenly. (Ayala, F *et al.* 1979, pp. 266-267)

Ayala *et al* observed that they do not know how to connect between taxonomic groups at the order and higher levels. They do not know this because the fossil record consistently misses all of the expected links required to make the connections. Instead, they have been forced to acknowledge that the levels that appeared suddenly in the fossil record (i.e. typically family) truly did originate suddenly. This is significant: the missing links are listed as the levels above the family, i.e., the “order, classes, and phyla.” This is precisely what would be expected from the Biblical model we just developed.

At this point I would like to make a number of additional quotes from the scientific literature. They also show how the fossil record agrees with the predictions of the Biblical flood model.

Derek Ager was president of the British Geological Association. He wrote, “It must be significant that nearly all the evolutionary stories I learned as a student...have now been debunked” Ager, D. 1976.

David Raup (1933-) was a University of Chicago paleontologist and Curator of Geology at the Field Museum of Chicago. He wrote,

“Instead of finding the gradual unfolding of life, what geologists of Darwin’s time, and geologists of the present day actually find is a highly uneven or jerky record; that is, species appear in the sequence very suddenly, show little or no change during their existence in the record, then abruptly go out of the record. It is not always clear, in fact it’s rarely clear, that the descendants were actually better adapted than their predecessors. In other words, biological improvement is hard to find” (Raup, D. 1979). (Emphasis was added.) Comment: this sounds like the Biblical model of created kinds. Specialists within a kind represent adaptations to niches, not evolutionary improvement.

George Gaylord Simpson (1902-1984) has been called “the greatest paleontologist of the twentieth century” (Wikipedia). He wrote, “The facts are that many species and genera, indeed the majority, do appear suddenly in the record, differing sharply and in many ways from any earlier group, and that this appearance of discontinuity becomes more common the higher the level, until it is virtually universal as regards order and all higher steps in the taxonomic hierarchy (Simpson G. 1984. p.99).” Comment: This is amazing. The phrase “order and all higher steps” (see page 44) means the gaps between the families are virtually universal. This is consistent with the Biblical model of God directly creating *kinds*, most of which were at the family level. The *order* is the next higher level.

Richard Dawkins wrote in *The Blind Watchmaker*, “...the Cambrian rocks, vintage about 600 million years, are the oldest in which we find most of the major invertebrate groups. And we find many of them already in an advanced state of evolution, the very first time they appear. It is as though they were just planted there, without any evolutionary history. Needless to say, this appearance of sudden planting has delighted creationists” (Dawkins R. 1987. p. 229).

Comment: Dawkins has devoted his life to fighting creationist arguments. There is very little he says that I agree with (see the bottom of page 30). However, this time he has hit the nail on the head. There is a reason the initial appearance of all of the major groups appear about the same time (in the Cambrian) and as if they “were just planted there.” They were.

Stefan Bengtsson was a paleontology professor at Uppsala University in Sweden. In an article presented in *Nature*, perhaps the world’s most prestigious science journal, Bengtsson wrote, “The animal phyla emerged out of the Precambrian mists with most of the attributes of their modern descendants” (Bengtsson S. 1990). Comment: This sounds like the Biblical model with created *kinds*. The information for all of the potential features was available from the beginning. It became evident as the niches were filled.

Stephen Jay Gould

Stephen Jay Gould (1941-2002) was a renowned paleontologist at Harvard University and an outspoken evolutionist and anti-creationist. He was a co-founder of the theory of punctuated equilibrium, which was an attempt to reconcile the observations of the fossil record with evolutionary theory. Basically, his position was that evolutionary changes took place so rapidly that the fossil record wasn't able to detect them. Then, once something appeared, it would remain stable until it disappeared. He was unconcerned about the incompatibilities of his theory with genetics; that wasn't his field. He decreed that reconciliation was the geneticist's problem, he simply stated what the fossil record taught. Below are some quotes by him.

Gould (1977) said: "The extreme rarity of transitional forms in the fossil record persists as the trade secret of paleontology. The evolutionary trees that adorn our textbooks have data only at the tips and nodes of the branches; the rest is inference, however reasonable, not the evidence of fossils.

"...Stasis. Most species exhibit no directional change during their tenure on earth. They appear in the fossil record looking much the same as when they disappear; morphological change is usually limited and directionless.

"...All paleontologists know that the fossil record contains precious little in the way of intermediate forms; transitions between major groups are characteristically abrupt."

Gould (1980) said: "The absence of fossil evidence for intermediary stages between major transitions in organic design, indeed our inability, even in our imagination, to construct functional intermediates in many cases, has been a persistent and nagging problem for gradualistic accounts of evolution." Comment: Have you ever noticed how vague the discussion becomes about any proposed evolutionary paths between amphibians, reptiles, mammals, and birds? The reason is simple. There is not enough fossil evidence even to imagine the steps to fill in the blanks. This is saying a lot when one considers that a paleontologist can take a single tooth of a prehistoric man and make a drawing or statue showing the shape of his feet, his hip bone structure, the length of his arms, how hairy he is, how sloped his forehead is, and a whole list of other features—all from a tooth.

Adaptive Radiation

Gould (1987) said, "But evolution is a copiously branching bush, not a ladder." Comment: this fits the Biblical model. The species in existence at the time of the flood would have been specialists which radiated from the original kinds. The original kinds would have had many different characteristics independently capable of wide variations. The various species would have various assortments of the form these characteristics took, hence the appearance of a bush.

David Raup (1987) said, "Students of evolutionary history have observed repeatedly that in an adaptive radiation, the major subgroups appear early and at about the same time." Comment: a rapid, simultaneous radiation fits the Biblical model, one in which the genetic information for the adaptation already exists. By contrast, the acquisition of new information is a

slow process whose rate of appearance cannot be predicted, or worse yet, based on what we understand about the biochemical issues in creating new information, could never be expected to take place even within a long time, let alone rapidly. Systematic, simultaneous filling of niches seems consistent with the Biblical model and inconsistent with our understanding of genetics and the evolutionary, uniformitarian model.

J. Birdsell wrote a supplement to a book on Human Evolution. It was titled, “What the Evolution of the Horse Really Shows: A Complex Adaptive Radiation” (1975). Comment: the title says it all. The “evolution” of the horse is not a problem for creationism nor is it a proof of Darwinian evolution. Complex adaptive radiations are characteristic of the Biblical model.

Switched Genes

Switched genes represent another characteristic of genetic information consistent with the Biblical model and which is difficult to account for by natural selection. Many genes are capable of being switched on and off by environmental effects. This allows an organism to have all of the information needed for a future environmental need, but to repress expression of the feature until it is needed. This can make it appear that new information suddenly appeared as it was needed. The Creator could easily have provided this type of information within the genome of the original kind. Switches to prevent information from being expressed until the time it is needed are incompatible with evolutionary theory. There is no mechanism for evolution to develop features for future advantages. Providing information to meet future needs would be a trivial task for a Designer of high intelligence and who has a plan for the ages.

Concluding statement:

There is a big problem for the evolutionary model: there are abundant fossils representing the family and lower taxa, but widespread, consistent, systematic gaps above the family. Significantly, these gaps appear in the fossil record at every location throughout the earth, despite widely varying geological conditions. On the other hand, the Biblical model is able to predict gaps. Furthermore, it predicts them to be exactly where they are: bushes of fossils at the family and lower levels and gaps above the family. The Bible provides a better model for predicting the overall structure of the fossil record than does evolutionary theory.

Mutations

An evolutionary adaptive radiation requires the formation of new information. Where does this information come from? In chapter 3 we saw that randomly assembling a string of amino acids to make a single copy of an enzyme would take over a Googol years. Yet, this is only a single copy, not produced by information. In chapter 4 we saw that mutations and natural selection are impotent to form a block of new information. Stephen Jay Gould, a very famous Harvard paleontologist, said the fossil record shows that transitions were so quick that they did not show up in the fossil record; this was a consistent pattern. Of course, Gould studied bones, not biochemistry and not genetics. The implausibility of getting groups of new, cooperating enzymes to show up at all certainly contradicts the short transition times Gould claims is allowed by the fossil record.

Biochemistry, genetics, and information theory work against the plausibility of rapid adaptive radiation into multiple niches where significant amounts of new information are

required—and even a minor “improvement” can require significant amounts of new information. By contrast, the Biblical account offers a good explanation. The information was placed there by the Creator when He placed His desired degree of variability in a given kind.

It is beyond the scope of this booklet to discuss mutations beyond this. A person who is interested may care to read John Sanford’s book on mutations, *Genetic Entropy & The Mystery of the Genome*, (ISBN 1-59919-002-8). Dr. Sanford was for many years a professor at Cornell University. He invented the gene gun, which was the original means of introducing new genetic material into a living cell and hence he may be considered a primary founder of the field of genetic engineering. Incidentally, he started his career an atheist. However, he observed many characteristics of gene structure which he could not account for by natural processes. The severity of the problems they posed ultimately led him to turn to creationism and become an outspoken creationist. The book provides many reasons why mutations are an inadequate source to provide for completely new complex structures. He also makes the case that the known rate of mutation in humans is so high that natural selection could not effectively eliminate increasing decay of the human genome between generations. Thus, man is not evolving over time, he is degenerating genetically. God created Adam with a perfect, mutation free genome. Today, everyone of us possesses many accumulated defects. Fortunately, most of them are recessive and do not normally impact us, but we are going downhill genetically, nor progressing. An eventual genetic death of the human race appears to be inevitable and man is helpless to prevent it.

Chapter 7 Miscellaneous Issues

There are a several peripheral issues related to this discussion which are beyond our scope to consider. Rather than discuss these here with any depth, links will be provided to other creationist resources which do discuss them.

General Links

<http://creation.com/qa#> Some key articles are at this link, including over 50 articles on various topics including those listed below.

<http://answersingenesis.org/answers/> also has links to many key issues scattered through the page.

<http://www.icr.org> click on the button at the top for PUBLICATIONS and then click on the link to Technical Papers.

Alternatively, click on the button for RESOURCES and then click a preferred link.

This website has a tremendous amount of information on it.

Specific Issues and Links

1. Carbon 14 dates Dinosaur blood to under 40,000 years old.

“ <http://newgeology.us/presentation48.html> ” gives a thorough analysis.

So does http://www.trbap.org/dino_soft_tissue.html.

2. Mountains. How could a recent world-wide flood cover the top of Mount Everest?

<http://www.creation-science.com/onlinebook/> Discussed in the book.
<http://www.icr.org/article/5871> .

3 Radiometric dating. How is a 6,000 year old earth consistent with the billions of years demonstrated by radiometric dating?

<http://globalflood.org/earthage/index.html> .
<http://creation.com/radiometric-dating-questions-and-answers>

4. Distant Starlight. How is a 6,000 year old earth consistent with starlight arriving here from galaxies over 10 billion light years away?

<http://creation.com/high-redshift-quasars-produce-more-big-bang-surprises>
http://creationwiki.org/Red_shift

5. Fossil Record Sequence. Doesn't the fossil record sequence of the Geologic Time Scale demonstrate that evolution is true?

http://creationwiki.org/Fossil_sorting
<http://www.nwcreation.net/fossil-sorting.html>

6. Noah's Ark. How could all of the animals fit on the ark?

<https://answersingenesis.org/noahs-ark/what-did-noahs-ark-look-like/>
<https://answersingenesis.org/noahs-ark/how-could-noah-fit-the-animals-on-the-ark-and-care-for-them/> .

Praise the LORD! For it is good to sing praises to our God;
for it is pleasant, and praise is beautiful. (Psalm 147:1, NKJ)

Chapter 8 What is Science?

Sir Francis Bacon has been given historical credit as the inventor of the scientific method. Two quotations from his works are the heart of the method. The first is:

"Truth can never be reached by just listening to the voice of an authority"
(Bacon F).

Bacon observed that most men in authority are more interested in exercising their prestige and rank than in finding truth, particularly new truth. They place more significance on praise from men about their own knowledge and brilliance than in finding truth, especially if that truth contradicts their publicly stated positions. We see this today.

When this statement is combined with the next quote, it becomes very significant and powerful. It is paraphrased from the Old English to make it easier to understand. Bacon said in effect,

"There are and can be only two approaches to searching into and discovering truth. The first jumps from observations and details to all-encompassing, generalized theories which are then presented as true, fixed, and not subject to alteration. From these, one uses logic to deduce various conclusions in the more detailed areas. These deduced conclusions are likewise considered true and unalterable. This is the way things are currently being done.

"The second approach derives explanations for observed facts in very small realms. It then tests its conclusions with a broader application of data. Finally, after going through this process many times, it arrives at the most general explanations *last of all*. This is the true way, but so far no one has tried it" (Bacon F. 1620).

The combination of these two statements defines the historical scientific method. It is the recognition that truth is discovered most effectively by a bottom-up, inductive approach based on experiment. The effectiveness of Bacon's suggested new approach has given us penicillin, electricity, relativity, and quantum mechanics. The whole concept behind modern science and the engineering principles proceeding from it is that truth is based on experimental observation, not the arrogant pronouncements of a self-appointed authority.

When Bacon suggested this approach as a method for discovering truth, it was not known whether it had any practical validity or not. Notice, he said that so far no one had actually tried to carry it out in practice. However, the approach did capture the minds of many key thinkers in his day. Therefore, it was in applying Sir Francis Bacon's approach to arriving at truth that modern science was born.

Most branches of modern-day science were founded by a Bible-believing Christian. This includes Kepler (physical astronomy), Boyle (chemistry), Newton (physics), Faraday (magnetism), Linnaeus (taxonomy), Steno (stratigraphy), Cuvier (comparative anatomy), Dalton (atomic theory), Maury (oceanography), Simpson (anesthesiology), Joule (thermodynamics), Mendel (genetics), Kelvin (thermodynamics), Maxwell (electromagnetic field theory), John Sanford (DNA gene gun—see page 53), and James Tour (chemical nanoparticles) plus many others.

James Tour was honored as Scientist of the Year in 2013 by R&D Magazine. (www.rdmagazine.com). He has been attributed as saying, "I build molecules for a living, I can't begin to tell you how difficult that job is. I stand in awe of God because of what he has done through his creation. Only a rookie who knows nothing about science would say science takes away from faith. If you really study science, it will bring you closer to God" (Strobel L. 2000).

Does this seem strange? Many people today have been taught that science and faith in God do not mix. This is only a lie preached by those who themselves do not like God and wish it were true in order to justify their personal rejection of Him. Some of the greatest scientists in history believed in God. Some great modern ones do, too. Tour has learned the same awe for God that the early scientists had.

The original goal of the early scientists was the discovery of truth, with an underlying conviction that the truths they were discovering revealed God's wisdom and power. The more they saw of the intricacy and logical organization in the things they studied, the more awe they had for their God. Indeed, Psalm 111:2-4 describes their attitudes perfectly:

² The works of the LORD are great, studied by all who have pleasure in them.

³ His work is honorable and glorious, and His righteousness endures forever.

⁴ He has made His wonderful works to be remembered; the LORD is gracious and full of compassion.

However, today our culture has largely given itself over to atheism. A modern scientist who, being the product of his culture, is an atheist first and a scientist second, does not understand the mindset of a person who studies the creation as an act of worship for the Creator. He is incapable of understanding this mindset, because this would require him to acknowledge at least the possibility that God exists, which is something he is unwilling to do. So, he uses "science" to justify his rejection of God and then convinces himself that somehow he is intellectually superior to those who do believe in God.

In his book *Why Darwin Matters*, Michael Shermer states, "Science also seeks only naturalistic explanations for phenomena" (Shermer M. 2006). A more accurate statement would restrict the explanations to observable, repeatable phenomena: "Science also seeks only naturalistic explanations for observable, repeatable phenomena." Reconstruction of reputedly historical events is not science. One cannot perform an experiment in past time. Issues involving historical interpretations of origins or evolutionary events are statements of belief. A tremendous amount of subjectivity is involved in the interpretations. History is not science is not history.

Science is the study of principles and laws which constrain the normal behavior of objects in the universe. However, this has nothing to do with whether or not a Creator exists and, if He does, the extent to which He works within His creation. The atheist makes the assumption that if he cannot control God in an experiment, then God does not exist. This is the height of arrogant egotism.

However, the atheistic scientist has attempted to define science in such a manner that he cannot acknowledge any evidence of a Creator, even when it exists. He may impress himself with his rhetoric. However, word games will not make a living God disappear.

Science does not have the power to deny the existence of a God who intervenes into His creation. All a scientist knows is that he himself is bound by the principles and laws of nature. It is improper for him to extrapolate beyond this and claim that there is not any such thing as a God who can intervene into the affairs of the universe, One who can at will override the normal laws of science. Science does not give him the tools to make such a statement and it is dishonest for him to represent that it does.

By contrast, we have clearly seen how entropy shows natural processes cannot create life. Furthermore, the use of information to control a living cell shows the cell is the handiwork of a living personal God. True science leads us to God.

The Lord by Wisdom founded the earth;
By understanding He established the heavens. (Proverbs 3:19-20)

Chapter 9 God and Humanism

Humanism is a philosophy which elevates man to becoming his own god. Its foundational assumption is that life is the outcome of unguided natural processes and that man is therefore accountable only to himself. Man can only look to his own wisdom to solve the problems of the world. Religion, and particularly when religion teaches an afterlife of heaven or hell, does more harm than good; it diverts people's attention from solving the real problems of the here and now. Modern science confirms that materialistic, unguided evolutionary forces are adequate to explain the organization of the universe and of life. Ultimately, humanism leads to socialism, because an all-powerful, all-controlling government is required for man to solve the immense problems facing the world. Overpopulation, global warming, pollution, and war are just some of the problems that man must solve in order to survive.

The arguments behind humanism and its sister socialism have been put together by some of the most brilliant minds over the past generations. They are persuasive, logical, and powerful.

However, if there is a living God who created the universe and the life that is in it and if this God holds man accountable for his actions, then the foundational assumptions of humanism are false. If the foundational assumptions are false, then everything built on those foundations is also false. Humanism can't solve the world's problems.

It is my personal conviction that the living Creator God has given evidence of Himself in the way He designed the creation. He considers this evidence so clear that He considers a person without excuse who rejects it. The arguments presented earlier in this booklet provide a powerful testimony to the insufficiency of unguided materialistic forces to create life and that, by contrast, life must be the creative work of a living, personal God, with unfathomable wisdom, the power to work outside of natural processes, and a will. These arguments are conclusive and powerful because God designed the universe to make them conclusive and powerful.

In Romans 1:19-22 the Bible presents God's analysis of the situation:

¹⁹ ...What may be known of God is manifest in them [mankind], for God has shown it to them. ²⁰ For since the creation of the world His invisible attributes are clearly seen, being understood by the things that are made, even His eternal power and Godhead, so that they are without excuse, ²¹ because, although they knew God, they did not glorify Him as God, nor were thankful, but became futile in their thoughts, and their foolish hearts were darkened. ²² Professing to be wise, they became fools." (NKJ)

From God's perspective, the evidence is so clear and, in accordance with the verses before and above the quoted passage, the consequences so severe, that a person who rejects the testimony God provides Him may profess to be wise, but from an eternal perspective is a fool. When a person stands before God to give account of himself, all of his arguments about why God doesn't exist will be meaningless. All of his arguments about how he can do what he wants without being judged on them will be meaningless.

Therefore, it is important that a person seriously consider the evidence God has provided.

The Humanist Manifestos

The basic tenants of humanism are expressed in three manifestos, written in 1933, 1973, and 2001. Each of these was signed by many of the leading, most prestigious intellectuals of their times. The most complete and detailed of the manifestos is the second one. It was initially signed by 114 people. Eventually, 147 additional names were added. Some quotations from it reveal the humanist position on traditional religions, including Christianity.

Despite the prestige of those signing the manifestos, humanism simply does not work in real life. This is what we would expect if it is the product of false assumptions. Economic and political systems founded on its principles invariably increase the misery of those living under them. In its efforts to make a perfect environment to solve the problems of the world, individual opportunity is stifled and individual freedoms are suppressed.

Even the authors of the second humanist manifesto acknowledged the practical failures of humanism when its principles were put into practice. For example, in the early 1930s, the time when the first manifesto was written, humanists were excited about the future. Both Nazism and communism were the products of humanistic philosophy. At this time period humanists were optimists; they anticipated that the world would soon have showpieces demonstrating the superiority of humanism over any system previously seen in history and particularly over those founded on Biblical principles. However, this excitement was short lived. Forty years later, the opening statements of the second manifesto explain what happened,

“It is forty years since Humanist Manifesto I (1933) appeared. Events since then make that earlier statement seem far too optimistic. Nazism has shown the depths of brutality of which humanity is capable. Other totalitarian regimes have suppressed human rights without ending poverty. Science has sometimes brought evil as well as good. Recent decades have shown that inhuman wars can be made in the name of peace. The beginnings of police states, even in democratic societies, widespread government espionage, and other abuses of power by military, political, and industrial elites, and the continuance of unyielding racism, all present a different and difficult social outlook.”

Notice, even as the world’s leading humanists themselves acknowledged in the second manifesto, it was humanists that led a world that wanted peace into World War II. It was humanists that introduced the modern police state along with its secret police reigning terror on the citizens of the state, citizens who simply wanted to live a quiet and peaceful life. It was humanists that led deliberate attempts for the genocide of an entire race (the Jews) based on the implications of evolutionary theory.

The second manifesto was written in an attempt to address these problems. This attempt would be amusing in its naiveté if the consequences were not so serious. In the second manifesto an attempt is made to prevent dictators from abusing power by declaring that they shouldn’t do so. As if Hitler would disassemble the S.S. because some university professor thought it would be nice for him to do it! As if Stalin would disassemble the K.G.B. because some university professor thought it would be nice for him to do it! Both Hitler and Stalin would be far more inclined to “disassemble” the professors.

The above-quoted opening to the second manifesto nobly speaks of “human rights.” Notice the difference between a Biblical perspective on human rights as opposed to one founded on the principles of humanism.

The Bible teaches that God made man in His own image. By contrast neither animals nor plants nor inanimate objects were so made. Because even the least among men still carries aspects of the image of God within him, he has far greater innate, intrinsic value than any animal, plant, or inanimate object. Actually, from God’s perspective it goes beyond this: the way a person treats another person reflects how that person feels about God, because man was created in God’s image (See James 3:9-10 in the Bible). Anyway, every man has value in God’s eyes and God expects men to recognize this innate value. This is what makes abortion wrong. The Bible teaches that every person will give an account to God of the things he has done in this life and that this accounting will have eternal, unchangeable consequences. **A person who believes this has a primary motivation to recognize the intrinsic worth of another man.**

By contrast a humanist has no real motivation to recognize the rights of others. The manifestos make it clear that from the perspective of humanism, when a person dies he disappears. There is no accountability to an eternal, living God. All that a person receives whether good or bad will be what he receives during his lifetime here on earth. Because of this foundational premise, humanism is powerless to stop the abuse of power by its leaders. Speaking of human rights sounds well when read, but there is no overriding motivation for a leader to recognize the rights of other people at his own expense. It is because of this inherent weakness that humanism does not work and cannot work. Given enough time it will always lead to oppression of people and suppression of their rights.

Why do humanists hang on to humanism in the face of the obvious problems associated with it? It is because their only alternative would be to acknowledge the existence and inherent authority of a personal God. This is something they are unwilling to do. Their decision has nothing to do with evidence. It has nothing to do with reason. It has everything to do with personal hatred of a God who sets standards for their behavior and expects their obedience and submission to Him and His authority.

For instance, I once gave an earlier version of this booklet to a student at the George Mason University campus in Fairfax, Virginia. He had never heard about a scientific basis for believing in the Creator.

We talked extensively about the issues and he became excited about what he heard. He asked, “Why don’t they teach these things in class?” I explained how many people hate the notion of a Creator and do everything they can to suppress knowledge of Him. He said, “Why?” I explained that the reason was simple. If a Creator God truly exists, then He has an intrinsic right to set standards for our behavior. People do not want to submit to a God who sets standards. They want to reserve that right for themselves. I then mentioned how most of the students on the campus right then were much more interested in thinking about what they would be doing at the party they would be at in a few hours (it was a Friday afternoon) than in seeking out the will of the God who created them.

All of a sudden, his face turned red and he mumbled, “I see what you mean.” We soon parted our ways and I have no idea whether our discussion had a lasting impact on his life or not. But, this little episode summarizes the problem. The sin in our lives deadens our desire to know the Creator. The next chapter will discuss this issue in more detail.

Chapter 10 Who Is the Creator?

The Creator is a transcendent God. By this we mean that He exists outside of and independently of His Creation. He existed before it. He brought it into existence because He decided to do so. The things from science we have discussed in this booklet teach the necessity of a God who “transcends” natural law as the originator of life.

As its Creator, God can interact and intervene with the events and activities within His creation at His will. What we would consider a “miracle” is nothing to Him; One who can create a galaxy out of nothing and not be exhausted from doing so can intervene into the daily affairs of His creation whenever and however He pleases. It is also true that He is not obligated to override the natural order He placed within creation. He is sovereign over creation and no one and nothing can stand against Him in whatever He decides to do or not to do.

There is an important ramification of God’s transcendence. We cannot know anything about Him unless He first reveals it to us. Human wisdom based on observing the creation and its behavior can surmise only very limited information about a God who exists outside of the creation.

Because of this, philosophical arguments based on human observation and reasoning are doomed from the beginning as an adequate source of truth. Why? They are incapable of dealing with issues involving a transcendent God. Yet, these are the very issues wherein lie the basic truths of man’s origin, purpose, and destiny. Since humanism is essentially a philosophy founded upon the principle that an active, living God does not exist and that man must therefore act as his own god, it is errant and ultimately will leave behind a trail of misery and destruction wherever its concepts are implemented—both now and in eternity.

We are now faced with a question. Is there any indication that the Creator has revealed to us significant details about His nature and about what He expects from us? Certainly a Living Creator God who can create a galaxy out of nothing and who can at will override the laws of science can also reveal Himself to us if He desires and chooses to do so.

Among the writings of the world’s major religions, the Bible is unique. It alone opens with a statement declaring its God as the Creator: “In the beginning God created the heavens and the earth.” (Genesis 1:1) The first two chapters of the Bible deal with the details of this creation, including the creation of living organisms and of man. The third chapter deals with the origin of man’s sin problem and why there are so many problems in the world. The third chapter also gives a hint of God’s provision for dealing with the sin problem (verses 15 and 21). So, the Bible alone opens with revelation about the creation of the heavens and the earth, the creation of physical life, and the foundational relationships between man and God. If one wants to find if the Creator God has revealed a message for us, the Bible is a rational place to start the search.

As we saw in Chapter 6, the Bible is unique in another way. It alone reveals God as initially creating “kinds” such that seed (the means of descent) is within the kind. I am unaware of any place in the Koran, the Book of Mormon, or any of the Hindu Scriptures that teach this. There is major significance to this seemingly trivial comment about *kinds* having their seed within them. This perspective gives us the key needed to provide an alternative explanation for the content of the fossil record. When one looks at the data of the fossil record without preconceived evolutionary biases and notions of long ages, he finds that the actual data itself is consistent with the Genesis account.

Actually, there is yet far greater significance to these opening verses of Genesis. God says that He alone knows what happened in the “former” times, a time which includes the events of creation. He then challenges any person or alternative god to give an adequate explanation of what happened: We studied this in the opening chapter.

An extension of this thought is found in Romans 1:20 of the New Testament in the Bible:

“For since the creation of the world His invisible attributes are clearly seen, being understood by the things that are made, even His eternal power and Godhead, so that they are without excuse.”

In effect, all of the problems, all of the roadblocks, all of the inconsistencies facing the evolutionist are there because God deliberately placed them there. The humanist cannot succeed in a rationalistic explanation of life because God created the universe in a manner that such an explanation will be false and inconsistent with the evidence. God deliberately made the evidence revealing His person so clear that *from His perspective* a person who does not see it is “without excuse.”

Many books have been written giving evidences of why the Bible is an authoritative, accurate revelation from God. In reality, the Bible is a self-confirming book. The evidence establishing its authority is found within itself. Among these evidences is God’s unique ability to declare both the past and the future accurately. In fact, some Biblical scholars have analyzed that about one-third of the Bible was prophetic when it was written. No other book comes even close to containing as much prophecy of future events as does the Bible. Much of the prophecy was fulfilled within the scope of Biblical times. Much of it applies to a much broader scope; indeed, we are seeing much of it fulfilled even before our eyes in current times. Yet other portions apply to events yet far distant in the future. This is all consistent with what we would expect from a God who created the heavens and the earth, who created man, and has a message He has revealed to man.

Chapter 11 Glorifying the Creator

It is amazing that not only has the Creator designed the creation so that it teaches us of His existence, but He has also decreed that we can know Him personally. A very precious universal promise is given in 1 Chronicles 28:9 of the Bible:

“The LORD searches all hearts and understands all the intent of the thoughts. If you seek Him, He will be found by you; but if you forsake Him, He will cast you off forever.”

The living God who created the heavens and the earth promises that a person who seeks Him will find Him. This is good news. It is the most significant promise a person can have. Becoming at peace with the Creator—that is, finding Him and knowing Him—is more important than a job, than a marriage, than health, or a few more years of life, all of which will soon pass away anyway. Along with the promise, though, is responsibility. If a person rejects the light God has given Him, the consequences are eternal. According to the verse, such a person will be cast off forever.

How do you come to know God? The first step is to believe that He exists and that He will reward you if you seek Him diligently:

“But without faith it is impossible to please Him, for he who comes to God must believe that He is, and that He is a rewarder of those who diligently seek Him.” (Hebrews 11:6)

So, he expects you to believe that He exists and He expects you to receive the testimony He has given of Himself concerning His existence. Much of this booklet has been focused on evidences demonstrating the reality of His person. Once you recognize that He is real, you need to seek Him and do this diligently. Finding Him needs to become your number one priority.

The situation we are in is described in the book of Isaiah,

“Behold, the LORD’S hand is not shortened, that it cannot save;
Nor His ear heavy, that it cannot hear.
But your iniquities have separated you from your God;
And your sins have hidden His face from you,
So that He will not hear.” (Isaiah 59:1-2)

The problem is sin. Sin separates us from God. There is a spiritually deadening effect that sin has on a person. We do not need to be told this; we know it from experience. In fact, sin can get such a strong grip on us that we become its slave. A person instinctively knows that sin in his life offends the Creator and for that reason is uncomfortable talking about Him. He does not like to think about Him. He does not seek God even though He knows God exists.

However, the above verse is a verse of hope. Even though our sins separate us from God, God is able to save us from our sins. The question is whether or not we want Him to. The issue

is whether or not we are willing to seek Him.

Isaiah also told us how God would go about saving us from sin. We read about this in the 53rd chapter of the Book of Isaiah in the Bible:

³ “He is despised and rejected by men...He was despised and we did not esteem Him.”

God is going to use a man to save us who was despised and rejected by men. Earlier, in verse 1 this man was identified as the *Servant* of God. We will also call Him by that name for now.

⁵ “But he was wounded for our transgressions,
He was bruised for our iniquities;
The chastisement for our peace was upon Him.
And by His stripes we are healed.”

Isaiah speaks of how the Servant was wounded because of our sins. We who are separated from God by our sins can be at peace with God, because His Servant bore the punishment and chastisement that was due us. It is by means of His affliction that we can be healed from sin and its consequences. The next verse continues,

⁶ “All we like sheep have gone astray; we have turned, every one, to his own way; and the LORD has laid on Him the iniquity of us all.”

Again, the problem is our sin. We stray from God. We want to go our own way, not His. We want God to bless us for our sakes; we are not interested in serving Him for His sake. Yet, praise God! In His mercy, He has laid on His Servant our sins. Dropping down to verse 10,

¹⁰ “Yet it pleased the LORD to bruise Him; he has put Him to grief. When You make His soul an offering for sin, he shall see His seed, He shall prolong His days, and the pleasure of the LORD shall prosper in His hand.”

God was willing to bruise the Servant, to put Him to grief for a bigger benefit to follow. This was a grief unto death. The Servant was made an offering for sin. An Old Testament offering always required the death of the one being offered. Our sins created a barrier between God and us. That barrier could only be removed by the death of an acceptable substitute. God provided a substitute for us in the person of the Servant.

¹¹ “He shall see the labor of His soul, and be satisfied. By His knowledge My righteous Servant shall justify many, for He shall bear their iniquities.”

Was God unfair to lay our sins on the Servant? Not from the Servant’s perspective according to this verse as well as the one preceding it. Although the Servant suffered on our behalf, God resurrected Him after the sacrifice was finished. After the resurrection, the Servant saw the fruit of His labors in the salvation of those who would come to know Him. Upon seeing

this, the Servant was satisfied. It was worth it. His death and the suffering associated with it resulted and will result in the salvation of many. He bore their iniquities, and this was a grief. However, when He sees the product of His labors, the salvation of men, He will be satisfied that it was worth the cost.

This is one of the most precious statements in the Bible. My situation is not good. I have sinned against God. My iniquities have separated me from Him. Yet, in His love for me, He has sent His Servant as an offering for my sin. In His love for me, He has saved me. Furthermore, He offers His salvation to anyone willing to receive it on His terms, which are simple. He offers salvation as a free gift to the one willing to receive it.

How does a person receive this gift? The above verse teaches us that it is by coming to know Him. We will discuss this later. Finally, the chapter concludes,

¹² "Therefore I will divide Him a portion with the great, and He shall divide the spoil with the strong, because He poured out His soul unto death, and He was numbered with the transgressors, and He bore the sin of many, and made intercession for the transgressors."

God is going to greatly honor this person, because He poured out His soul unto death as He bore the sin of many and because He made intercession for the transgressors.

Friend, the Servant of God is willing to intercede before God on your behalf, that you might become clean in God's eyes and counted by Him as righteous—not because of what you have done, but because of what the Servant did for you out of God's love.

Who is the Servant who offered Himself up for you? Isaiah talks about Him a few chapters earlier, in chapter 42:

¹ "Behold! My Servant whom I uphold, my Elect One in whom My soul delights! I have put My Spirit upon Him; he will bring forth justice to the Gentiles."

The Servant is One whom God has chosen to bring forth justice to the Gentiles. The Servant is none other than the Old Testament Messiah, the anointed King that God has promised to send to rule the entire earth. We could say more about this passage, but this is sufficient for now.

A sacrifice had to be perfect. Any blemish in a sacrifice would have made that sacrifice unacceptable. Both Jew and Gentile would need the benefits of such a sacrifice, for we all have sinned before God. There is only One who is perfect, who is without sin. That is God Himself. Somehow, then, God would need to be the one who was sacrificed. How could this be?

The Bible teaches that God has a Son. The Son is God, but distinct from the Father. We read about the Son in Psalm 2 of the Bible:

² "The kings of the earth set themselves, and the rulers take counsel together, against the LORD and against His Anointed...."

⁷ "I will declare the decree: the LORD has said to Me, 'You are My Son, today I have begotten You.

⁸ 'Ask of Me, and I will give You the nations for Your inheritance, and the ends of the earth for Your possession.' "

These verses teach us that the Messiah, the Anointed One of God, is also the Son of God. It is His own Son that God will send to rule on the earth.

In Deuteronomy 29:29 we read that,

"The secret things belong to the LORD our God, but those things which are revealed belong to us and to our children forever...."

In other words, there are some things that God reveals and some things He keeps secret. He has revealed that there is only one God. He has revealed that He has a Son. The Old Testament of the Bible ascribes deity to His Son (Psalm 45:6-7, Micah 5:2), so His Son is God. How can there be only one God, and yet this God have a Son who is also fully God? To the human mind, these things seem contradictory. However, the problem lies in our understanding, not in God's nature.

A person with a submissive spirit towards God will accept what God has revealed and respond to it in faith. He understands that human intellect is not sophisticated enough to fully comprehend God's nature. He will be content to recognize that God's ways are higher than our ways and that there are some things that God chooses not to reveal to us. By contrast, the one who has a rebellious heart will come across something he does not understand and will then use that as an excuse to rebel against God and reject what God has revealed. Such a person places his own wisdom above God's revealed truth. He limits the nature of the eternal, omnipotent, living God who created the universe to what makes sense to himself, a created being. This is foolishness.

Continuing in Psalm 2 we read,

¹¹ " Serve the LORD with fear, and rejoice with trembling.

¹² " Kiss the Son, lest He be angry, and you perish in the way, when His wrath is kindled but a little. Blessed are all those who put their trust in Him."

How we respond to the Son determines our destiny. Refusing to respond with affection to the Son will kindle His wrath. However, those who are willing to put their trust in Him will be blessed.

Even though the things we have just looked at are remarkable, there is more. Who is the Servant? Well, let's look at some more verses. In Micah 5:2, we come across something really interesting:

² "But you, Bethlehem Ephrathah, though you are little among the thousands of Judah, yet out of you shall come forth to Me the One to be Ruler in Israel, whose goings forth are from of old, from everlasting."

This passage speaks of the Messiah, the One who is to be Ruler in Israel. He has existed forever (i.e., He is God.) Yet, He shall be born in the tiny city of Bethlehem. Another interesting passage is found in Isaiah 7:14,

¹³ "Then he said, 'Hear now, O house of David! Is it a small thing for you to weary men, but will you weary my God also?'"

¹⁴ "Therefore the Lord Himself will give you a sign: Behold, the virgin shall conceive and bear a Son, and shall call His name Immanuel.' "

How could an eternal God with an eternal Son have that Son be born into the world? To God the solution was simple. A virgin would conceive and bear a Son. He would be called, "God is with us" (Emmanuel). Although modern scoffers have claimed in their disbelief that the word translated *virgin* should be translated "young woman," their error is easily refuted. The Septuagint is a translation of the Jewish Bible, the Old Testament, from the original Hebrew language into the Greek language. It was made several hundred years before the birth of Jesus by people who actually spoke both Hebrew and Greek in their daily living. The Greek language makes a clear distinction between a woman who is merely young and a woman who is a virgin. The translators had no particular agenda or bias when they translated the passage and they chose a word which explicitly means "virgin." The reason for this is simple. It is also what the Hebrew word means. The issue is not the meaning of the word. The issue is that many people do not believe what the passage says and want to soften it into something they can believe.

However, in this passage, God was going to give a sign to the entire House of David. It would be a momentous sign. The virgin would conceive and bear a Son who would be called, "God is with us." A God who can create the universe and who can create life at will would certainly have no difficulty in fulfilling this verse. The only difficulties are in the mind of man.

There is another key to the puzzle of the identity of the Servant. In Daniel 9:25-26 we read,

²⁵ "Know therefore and understand, that from the going forth of the command to restore and build Jerusalem until Messiah the Prince, there shall be seven weeks and sixty-two weeks;

the street shall be built again, and the wall, even in troublesome times.

²⁶ "And after the sixty-two weeks Messiah shall be cut off, but not for Himself..."

The command to rebuild both Jerusalem as well as its wall took place in approximately 446 B.C., during the 20th year of King Artaxerxes. It is recorded in Nehemiah 2:1-8. From the time

of this command until the Messiah is killed (cut off) would be 69 weeks. A study of related passages shows that a week in this context is a period of seven “almost” years—seven periods of 360 days each. Calculations place the time of the Messiah’s death to be somewhere in the timeframe of 31 A.D. However, His death would not be for Himself. Indeed, the death of the Servant was to be a sacrifice for us who have gone our own way and sinned against God.

So, we have learned a lot about the Messiah. We have learned that He is the eternal Son of God who would take on human flesh and literally become God in the flesh after a virgin birth. He was to be born in the city of Bethlehem. He will ultimately rule over the entire earth, although the time for that is still future. However, before this He would offer Himself as a sacrifice for the sins of men. He would die somewhere around 31 A.D. and would be raised from the dead. Then, when He sees those who were saved from their sins because of His sacrificial, substitutionary death, He would be satisfied that it was worth all of the grief and suffering it cost Him.

Is there anyone who fits the description of these things? Yes, Jesus of Nazareth, a man who went about doing good, who demonstrated the power of God in His life by working many miracles, who has had a greater impact on world history than any other single man. He is the One described in all of these various verses. Furthermore, He is the only person in history who could have fulfilled the various prophecies, for the decreed time of His death has long since passed.

It is interesting that every one of the passages we have looked at concerning the Servant, the Messiah, and the Son were written well before the birth of Jesus the Messiah. In fact, the time of authorship ranges from about 500 to 1,000 years before His birth. The Creator had a specific plan in order to redeem man. He told man about what He had decided to do long before He did it. The documents foretelling these things were recorded in a very well known body of writing, the Hebrew Testament. Then, in accordance with His power, God did what He said He would do. He did this at the exact instant He had determined to do it.

There is a verse in the New Testament, Romans 5:8, that summarizes the underlying motive of God in doing these things:

“But God demonstrates His own love toward us, in that while we were still sinners, Christ died for us.”

The word *Christ* is the Greek word for the Hebrew *Messiah*. The Messiah died for us! He did this because God loves us.

Friend, what will you do with Jesus? Science points to a Creator God. God specifically designed the creation to reveal His person, and we have looked at ways in which it does. Beyond this, the Bible confirms that the Bible is truly His Word by fulfilled prophecy. The scope and magnitude of the prophecies are overwhelming. These are not prophecies of some minor event happening in the life of some inconsequential person. These are prophecies of the Son of God taking on human flesh through a virgin birth and then dying as a sin offering for the sins of mankind. These are prophecies of resurrection after His death and of His ultimate satisfaction over what His suffering accomplished. These are prophecies defining where the Son would be

born and the year He would die. Only the Creator could make and fulfill prophecies of this magnitude.

Because God loves you, He sent His Son in the likeness of human flesh that He might make Himself an offering for you, bearing your sins in His body. You have no other hope, because He is God's only provision. If anything else had been adequate, God would not have gone to the extreme measure of offering His Son as a sacrifice for our sins.

The Son of God offered Himself as a payment for your sins. If you will trust Him, He will bless you eternally. However, if you refuse Him, you will kindle His wrath, for you have despised something extremely precious and costly and which for now is being offered to you freely.

God offers you eternal life. He offers you forgiveness of sins. He gives you the promise of knowing Him on an intimate basis. However, if you forsake Him, if you turn from Him, He will cast you off forever. The decision is yours. God gives the reward for seeking Him diligently. Putting off the decision is to risk eternal damnation.

So, how do you receive the Son as your Savior? It is explained in John 3:16,

"For God so loved the world that He gave His only begotten Son, that whoever believes in Him should not perish but have everlasting life."

We receive God's Son, the Lord Jesus Christ, as our Savior by believing in Him. This verse is really an application of Psalm 2:12, which we looked at a little while ago and which states that, "Blessed are all those who put their trust in Him."

What does it mean to believe in Him? The Greek word translated here as "believe" can also be translated *trust in* or *rely on*. Believing in Christ as Savior means accepting what God has revealed about His person, that He is the Son of God and will some day rule as King. It means accepting what God has revealed about His work, i.e. that Christ died for our sins, was buried, rose again three days later, and was seen by many witnesses. Finally, it means RELYING on these things for our salvation. We no longer rely on ourselves or on our own works. We rely on Christ's finished work to save us.

We have lived in rejection of God. We have suppressed truth about God so that we could live in sin. But now, we recognize that God is holy and will have nothing to do with sin. It is our desire to come to Him, to know Him, to be pleasing to Him. Yet, we know that our sins make this impossible and there is nothing we can do about it. Our sins have too powerful a grip on us.

God loves us and has done all of the work for us. He is willing to receive us if we come to Him His way, which is through His Son Jesus Christ.

As we come to Christ, He reveals our sin to us. We can look to Him to forgive us of our sins or we can turn from Him and go our own way. But, we cannot come to Christ to save us while deliberately determining to continue in our sins. Repentance is the willingness and desire

to have Jesus make us clean. It is turning from a life of rebelling against God and from going our own way. Yet, it is not trying to become clean by our own will power. We do not have the strength to do this. It is yielding to Him to save us and cleanse us.

"God now commands all men everywhere to repent." (Acts 17:30)

Friend, may you cast yourself on the mercy and grace of Jesus, relying on Him to cleanse you and make you acceptable to God.

Jesus said,

"The one who comes to Me I will by no means cast out." (John 6:37)

The Old Testament prophet said that if you forsake God, He will cast you off forever. But, Jesus promises that if you will come to Him, He will not cast you out. You come to Him by believing what God said about Him, that He is the Son of God, that He died for your sins, and that He rose physically from the dead. Indeed, we read in Romans 4:5, "But to him who does not work but believes on Him who justifies the ungodly, his faith is accounted for righteousness."

Friend, will you come to Jesus now? The following is a suggested confession of faith. May it express your internal decision to trust Christ as Savior:

"Father in Heaven, I have sinned against you. I have not glorified you, I have not honored you, and I have gone my own way, even when inwardly I knew better. I am guilty before you, an eternal God, and deserve eternal punishment. However, I believe your Word, that Jesus Christ is your Son and that His death paid off my judgment. I believe He rose physically from the dead after three days, is alive today in Heaven, and has the authority and power to forgive me from my sins, saving me from the penalty they incurred. I am relying on Your Son, the Lord Jesus Christ, to forgive my sins and to give me eternal life. Thank you. I come to you In the name of Your Son, Jesus Christ, Amen.
"

"Thanks be to God for His indescribable gift!" (2 Corinthians 9:15).

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About The Author

Tim Stout graduated from UCLA with a B.S. in physics and has done graduate studies at the San Francisco Baptist Theological Seminary. He has over thirty years experience as an industrial design engineer in both the mechanical and electronic fields. Two of his electronic designs have been featured on the covers of trade journals and he has received four U.S. patents for efficient conversion of sea water to fresh water. He also has 26 years experience (some in parallel with work as a design engineer) in the ministry, including twelve years as a church pastor, four years in a university campus outreach ministry, and ten years devoted to a creation science outreach, proclaiming how God has revealed Himself in His creation. From May, 2008 until January of 2016 he authored a regularly published column in *Creation Matters*, a bi-monthly magazine published by the Creation Research Society (www.creationresearch.org/matters.html). Almost 50 articles on a wide variety of subjects related to creation science and/or theology were featured in his column during this period. At the July, 2016 National Conference of the Creation Research Society he presented a session on the hypothesis of Abiogenetic Disconnects. Abiogenetic Disconnects provides the foundation for the main argument of this booklet.

In January of 2016 he became pastor of The Rock Baptist Church, a church plant in Greenville, TX.

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Spontaneous Generation Still False

Spontaneous Generation is a term used by Aristotle in the fourth century B.C. to describe his thesis that life would spontaneously appear under certain conditions.

In 1859 Louis Pasteur performed a set of very careful experiments and showed that Aristotle was wrong. When Pasteur carefully removed the sources of contamination, life did not spontaneously appear. Of course, Pasteur's experiments only covered a brief span of time.

In the early 1900s Aleksandr Oparin and John Haldane postulated that under certain conditions, natural chemical processes could slowly evolve into life. In 1952 Stanley Miller experimentally tested in a laboratory the Oparin-Haldane hypothesis. Amino acids were produced. This was viewed as confirming the hypothesis. *Chemical evolution* was a term coined to represent the emergence of life from common chemical processes available under pre-life conditions. In time the field was alternatively called *abiogenesis*. This is the current scientific perspective of how life originated.

In 2013, Timothy Stout presented his hypothesis of *Abiogenetic Disconnects* in a seminar at the Conservative Theological University in Jacksonville, Florida. In July, 2016 he presented the hypothesis at the Creation Research Society's Annual Convention. According to this hypothesis, pre-life processes are capable of forming a broad spectrum of products. The principle of entropy will insure that the broad spectrum gets produced. By contrast, the emergence of life requires very specific chemicals to be produced at very specific molecular locations at very specific points in time.

However, there is nothing to constrain naturally occurring chemical reactions to produce the specific chemicals needed for life at the time and place they are needed. As a result, most of the chemicals that get produced are wrong at every proposed step. One of the purposes of this booklet is to discuss this issue thoroughly.

For physical life to emerge from evolutionary processes, it is necessary for the various steps of progress to flow smoothly into each other. One step needs to lead naturally to the next. However, it appears that this does not happen. Every experiment has seemed to demonstrate new roadblocks thwarting abiogenesis. The roadblocks appear to be a confirmation of Abiogenetic Disconnects. If so, then a natural origin of life is impossible. Pasteur's conclusion becomes valid for spans of time covering both short terms and long terms.