

# ACTS & FACTS



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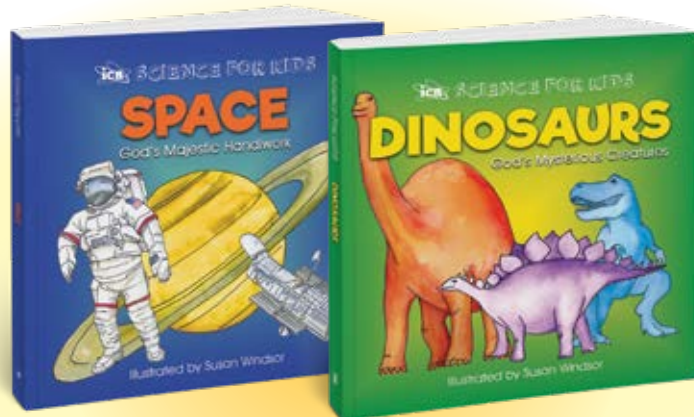
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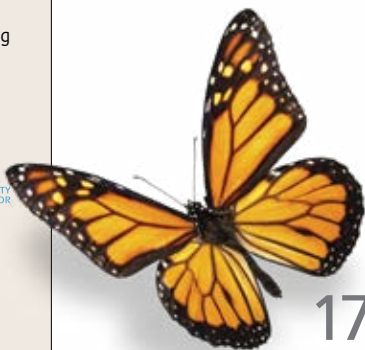
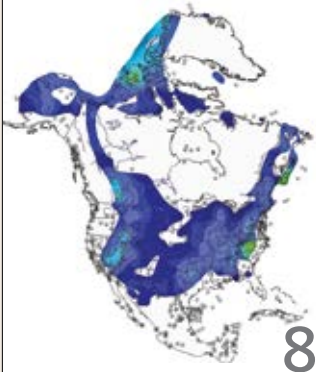
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Cover image: 3D bacteria



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# Consider the Source

As children, when someone challenged what we were saying, we had a favorite comeback—“Says who?” We wanted to know if the person questioning us was important enough to believe. How did they rank on the trustworthiness scale? Professional writers have a different version of “says who?” When they evaluate the credibility of a manuscript, they ask, “What’s the original source or *who* is the primary source?” Christians have still another test to determine reliability—*what does God say?*

At the Institute for Creation Research, we look at the presuppositions of teachers or scientists, their research methods, original source documentation, and other areas that reveal the reliability of what they’re presenting. We want to know “says who?” We consider the source before we accept their premises. Some key things to consider are

- Who is the author?
- What is their worldview?
- Do they believe the Bible is God’s inspired, inerrant Word?
- Do they accept the historical narrative accounts in the Bible as accurate historical records?

- Do they follow the scientific method?
- Is evolution their starting point?

We can ask other questions, but these are good places to start when we want to evaluate the credibility of what we hear and read.

When you consider the scientists and scholars at ICR, you will find all of them to be trustworthy sources in both the Bible and science. As you read this month’s feature article “Vernon Cupps: Interview with a Nuclear Physicist,” you’ll discover a man with a heart for God who also has an impeccable science resume (pages 5-7).

Dr. Jeffrey Tomkins discusses the problems with evolution in “The Impossibility of Life’s Evolutionary Beginnings” (pages 11-14). He earned his Ph.D. in genetics from Clemson University and has authored dozens of technical papers on human-chimp DNA, genomics, horticulture, biology, and other topics.

Dr. Randy Guliuzza, ICR’s National

Representative, provides insight into the engineered adaptability of living organisms in “Creatures’ Adaptability Begins with Their Sensors” (pages 17-19). Dr. Guliuzza is a medical doctor and professional engineer with a theology degree as well. He also earned a Master of Public Health from Harvard University and served in the Air Force as Flight Surgeon and Chief of Aerospace Medicine.

The other members of our research team also hold master’s and/or doctorate degrees in relevant fields such as geology, physics, biotechnology, zoology, theology, and law. All are seasoned experts in their respective disciplines.

Our scientists’ superb credentials stand up to the scrutiny of critics. Their desire to honor the Lord is foundational to everything they teach. When you evaluate the sources at ICR and you ask that age-old question—“says who?”—you can be assured that our scientists and scholars have already considered “what does God say?”

Jayme Durant

EXECUTIVE EDITOR





# Vernon Cupps:

## Interview with a Nuclear Physicist

- Those who scoff at biblical creation often claim creation scientists “aren’t really scientists,” saying they don’t perform actual research or publish in scientific journals.
- Dr. Vernon Cupps earned his Ph.D. in nuclear physics from Indiana University and has 73 publications in secular scientific journals.
- In addition to working at Fermilab for 23 years, Dr. Cupps worked at Los Alamos National Laboratory and Canada’s TRIUMF Accelerator.
- Brian Thomas’ recent interview with Dr. Cupps covered his reasons for becoming a creationist, as well as scientific evidence supporting the Genesis account.

**V**ernon Cupps became fascinated with science in seventh grade and knew then he wanted to be a scientist. His specific interest in nuclear physics came during a physics class at the University of Missouri as he studied the nucleus. Since childhood, he has believed the Bible is infallible, but there were steps involved in his becoming a creationist.

**Brian:** What do you mean by “creationist”?

**Dr. Cupps:** Creationism, the belief that Genesis is absolutely correct in its assertion that everything was created *ex nihilo* in six days by God, is something that I had never specifically concentrated on—I just simply believed the Bible. I spent most of my career in physics and mathematics, and

I didn’t think much about the consequences and implications of that particular part of the Bible. But I began to in the 1990s when I read books by Dr. Henry Morris, Hugh Ross, George Pember, and many others. I tried to get a vast range of opinions on the subject, and it became crystal clear to me that the only reasonable point of view was that Genesis is absolutely correct in all that it asserts to be true.

**Brian:** So, you started with “I’m a Christian, I believe the Bible in general,” and then you spent most of your career as a physicist focusing on how the world operates, not how it originated. But you spent years studying the origins subject. Was there a moment as you studied that really resonated with you, where you said, “This makes sense”?

**Dr. Cupps:** One thing that most resonated with me was that the day-age theory and the Bible couldn’t both be true. The day-age theory is expounded upon by Hugh Ross and his contemporaries, and that theory—or that hypothesis, rather—says that they believe the days set forth in Genesis chapter one are really ages. But the translation of the Hebrew doesn’t allow that to be the case. That’s not proper exegesis of the Bible.

**Brian:** Why can’t we insert vast ages for days?

**Dr. Cupps:** The Bible doesn’t allow it. If you go that direction, where do you stop? Because now men are interpreting God’s Word in a way they want to interpret it.

**Brian:** If you start by using your own definition from outside the context of the passage, then you can do that same thing anywhere else in the Bible.

**Dr. Cupps:** And you can interpret anything in the Bible any way you want. This leads to confusion—anarchy of interpretation, basically.

**Brian:** You didn’t want to be confused.

**Dr. Cupps (laughing):** I’m a simple guy.

**Brian:** So, you went through this process of investigating origins options, and you settled on recent creation, and one of the biggest reasons was a study of the Bible. Let’s ease back into your career. What did you do as a scientist?



Brian Thomas and Dr. Vernon Cupps discuss his life’s work.



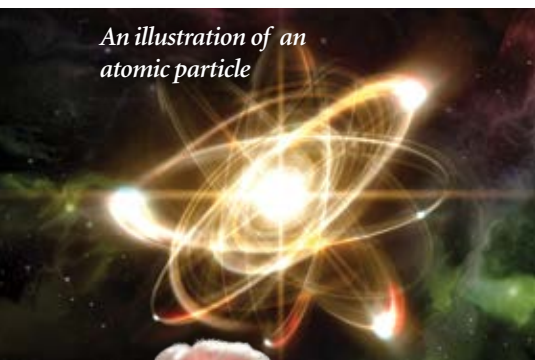
*Fermi National Accelerator Laboratory, Batavia, Illinois, specializes in high-energy particle physics.*



*Spiral galaxies show evidence of a young universe.*

**Dr. Cupps:** After working at the Indiana University Cyclotron Facility, I went to Los Alamos, where I planned and prepared an experiment to study pion absorption on a number of different nuclei to give us insights into the nuclear force—the force that binds the nucleus together. I also worked on an experiment to study the spin response of the nuclear continuum, which necessitated me to go to TRIUMF, the particle accelerator in Canada. And finally, I worked on an experiment to measure the proton/proton elastic-scattering cross-section to a one-percent precision, a very difficult precision to reach when counting particles. That experiment was done at about 600–900 MEV (million electron volts).

**Brian:** How do you reconcile the six-day creation view with distant starlight billions of miles away?



*An illustration of an atomic particle*

**Dr. Cupps:** The secularists have the same problem. We can only measure the speed of light as a two-way trip. We can't measure its one-way transit time.

**Brian:** Would you say there are enough unknowns, especially in astronomy and cosmology, to place the various origins perspectives on a level playing field?

**Dr. Cupps:** Absolutely. If you look at the totality of information and data we have on the earth and solar system, it all points to a very young earth and a very young solar system, not to something billions or millions of years old.

**Brian:** So, the speed of light problem, distant starlight, is a problem for everyone regardless of their origins perspective. Let's look elsewhere for indicators. Let's measure some other attributes of the universe.

**Dr. Cupps:** We know spiral galaxies have to be reasonably younger than about 300 million years old because they tend to unwind and [would have developed] into an elliptical galaxy by now. Spiral galaxies

are found 13 billion light-years from Earth. We see evidence of youth in the extended universe. The Big Bang people can't explain a lot of things—they can't explain the antimatter–matter imbalance.

**Brian:** What is that?

**Dr. Cupps:** Our universe is basically made up of matter. According to the Big Bang hypothesis, there should be equal amounts of each, but there's virtually no antimatter! They also don't know where the elements heavier than iron come from. Their hypothesis is that heavy elements are formed in the explosions of supernovas, or, a more recent hypothesis, that they were formed in the collision of neutron stars.

**Brian:** When you have a high-energy source, you can make heavy elements out of lighter elements by smashing them together.

**Dr. Cupps:** Except, it doesn't work. In nuclear accelerators, we've banged large nuclei together, and they do not fuse—they break apart! The secularists generally believe that sequential nuclear reactions in stars—for example, reactions in which an iron atom will sequentially capture additional neutrons—are the means by which heavy elements are created. But multi-step nuclear reactions in large volumes are highly, highly improbable.

**Brian:** How did we get the heavy elements we have today?

**Dr. Cupps:** [I believe] God created them out of nothing.

**Brian:** What you're saying is there's scientific evidence that supports this creation view, and you're also saying there's scientific evidence that supports not just the fact of creation but the Bible's timing of creation.

**Dr. Cupps:** Correct. There is also the



*Prepping for the interview*



problem that's arisen from recent observations in the cosmic microwave background [CMB] that there is a preferred axis in the universe. Big Bang cosmologists believe that Earth is no special place. CMB is the result of light being stretched as space stretched to where the light loses energy until its frequency drops into the microwave background. The Big Bang proponents expected the CMB to be completely uniform across the universe—spread evenly—but it's not.

**Brian:** Why don't these secularists abandon the Big Bang if it has so many problems?

**Dr. Cupps:** Let me answer that question by quoting a scientist who is a Nobel Prize winner, who wrote a recent paper about how evolution could've occurred. He did experiments that were heralded as decisive proof of the theory of evolution. But his colleagues couldn't duplicate the results, so he retracted his paper. He admitted that "we were totally blinded by our belief." And that answers the question. They are blinded by their beliefs. I think you will find that the basic difference between creationists and people who believe in the evolutionary deep-time paradigm for nature is a difference in belief—a difference in worldview—it's not a difference in science. We're all looking at the same data, so it's basically a matter of belief. Do you believe the Bible, or do you believe these hypotheses that have been [invented] by men?

**Brian:** So, you went from Los Alamos, Fermilab, and TRIUMF to the Institute for Creation Research. It seems like a big switch.

**Dr. Cupps:** In some sense it is, in some sense it isn't. I'm still doing science. Science is a systematic methodology for investigating natural phenomena. It is *not* naturalism. Naturalism is the scientific approach of the secularists who believe in the evolutionary deep-time paradigm. It is a philosophical principle of secular humanism—it's not science.

**Brian:** You're doing science at ICR?

**Dr. Cupps:** Absolutely. And I go where

the evidence leads me.

**Brian:** What are you working on now?

**Dr. Cupps:** I'm working on radioisotope dating, because the primary argument secularists use to support their deep-time paradigm is that radioisotope dating supports their hypothesis. But radioisotope dating depends on a lot of very tenuous assumptions. I'd like to do some experiments on the decay rate of an isotopic nucleus that's radioactive to see if the decay rate is truly constant. It appears that both pressure and electrical fields can greatly change the rate of decay. They also assume that the rock is a closed system—no heating

I tried to get a vast range of opinions on the subject, and it became crystal clear to me that the only reasonable point of view was that Genesis is absolutely correct in all that it asserts to be true.

or cooling—which is absurd. The best way to look at it is if you took a large jar of water and dropped salt into it, the salt will slowly diffuse throughout the water at room temperature. But if you cool the water, the salt will diffuse throughout the water at a different rate. If you heat the water, the diffusion rate will speed up. You need to have a full knowledge of the history of the rock you are dating—and they don't have that.

**Brian:** You're saying you don't trust their clocks.

**Dr. Cupps:** No. Their clock systems have too many unknowns and too many assumptions that are very, very iffy.

**Brian:** What other scientific evidences for recent creation have you run across?

**Dr. Cupps:** The rings on Saturn look like they're very young. The recent satellite probe that passed by Pluto—Pluto looks very young. It should be completely pock-



*Saturn's brilliant rings can't be billions of years old.*

marked with impact craters from debris, and it's not. And it even has an atmosphere. It should've dissipated millions of years ago. The rate of heat loss for Jupiter and Saturn is two to three times what they receive from the sun. Why aren't they stone cold now if the solar system is four billion years old?

**Brian:** What makes Saturn's rings look young?

**Dr. Cupps:** They have very little debris on the ice crystals. They should be dark.

**Brian:** Will some of your discoveries make their way into the ICR Discovery Center?

**Dr. Cupps:** The subject of stellar nucleosynthesis will certainly be in the universe exhibit. That exhibit will demonstrate how the solar system and universe are constructed and what the arguments are, pro and con, for creation on a 6,000–10,000 year time frame. There will be a whole room dedicated to the universe.

**Brian:** Well, it's been an informational and inspirational discussion. I say inspirational because we do live in a world that's permeated by this whole concept that God was not around—everything we see came around naturally. But it's so refreshing to talk with someone willing to investigate origins and who came down on the side of "the Bible got it right" by investigating what the Bible says and by looking at all the options and weighing all those options. I appreciate your expertise as a scientist coupled with your conviction that what you see confirms the straightforward teaching of the Word of God.

**Dr. Cupps:** Thank you, Brian. ☞

# Minimal Continental Coverage During the Early Flood

## article highlights

- Creation scientists have long speculated on when the Flood rose high enough to cover the entire earth.
- Oil-well data from wells on three continents help provide an answer.
- The first megasequence shows minimal flooding early in the Flood year.

Numerous authors have speculated on the extent of the early floodwaters and on when the Flood peaked. Many questions remain unanswered. For example, did the Flood cover the continents early in the Flood year, recede, and then rise again? Did the waters rise once and peak around Day 150? Or was it some combination? Our latest research provides some answers.<sup>1</sup>

Figure 1 shows the megasequences defined by geologist L. L. Sloss and the secular sea level curve during the time of their deposition.<sup>2</sup> Although Sloss initially defined his megasequences across only the interior of North America, oil industry geologists quickly extended these boundaries to the offshore regions and adjacent continents using oil-well logs and seismic data.<sup>3</sup> Secular geologists claimed global sea level reached an extreme high during the Sauk Megasequence (Figure 1).

Many creation geologists think the Sauk Megasequence represents early Flood deposits. In many places, the base of this layer is also known as the Great Unconformity.<sup>4</sup> The bottom layer of the Sauk Megasequence is also coincident with the so-called Cambrian explosion in which marine fossils representing many animal phyla suddenly appear in the rock record.

ICR's research is one of the first attempts to map the true extent of the sedimentary rocks across the continents and to test the validity of the published secular sea level curve model (Figure 1).<sup>1</sup> The area covered by the Sauk Megasequence across North America is over 12 million km<sup>2</sup> (Table 1 and Figure 2A). Sauk deposits are several kilometers thick along the east and west coasts of the North American continent and yet are very thin (only a few tens of meters) to nonexistent across the central part of the continental United States. They average only about 275 meters deep across the North American continent where present (Table 1).

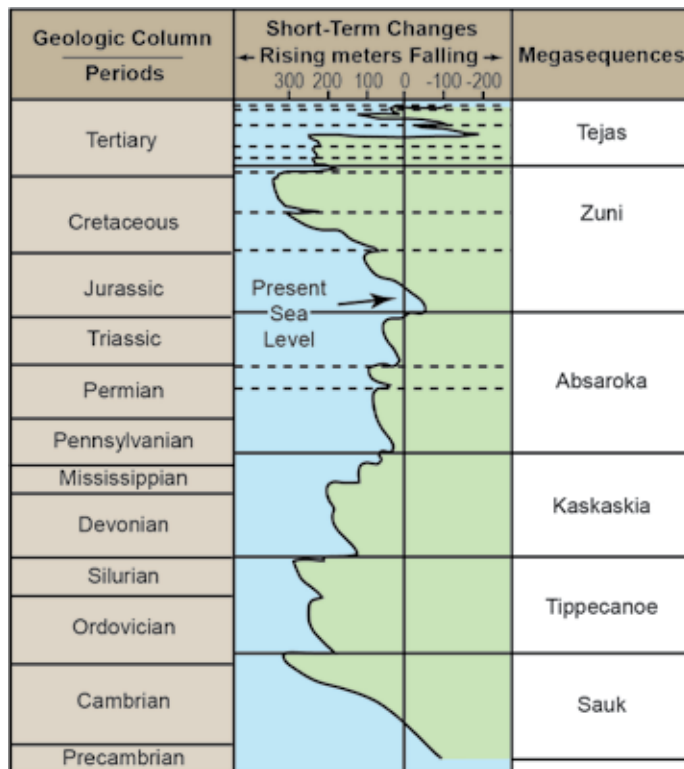


Figure 1. Chart showing the secular timescale, presumed sea level curve, and the six megasequences. Modified after Sloss and Vail.<sup>7</sup>

| Surface Area (km <sup>2</sup> ) | North America | South America | Africa     | Total      |
|---------------------------------|---------------|---------------|------------|------------|
| Sauk                            | 12,157,200    | 1,448,100     | 8,989,300  | 22,594,600 |
| Tippecanoe                      | 10,250,400    | 4,270,600     | 9,167,200  | 23,688,200 |
| Kaskaskia                       | 11,035,000    | 4,392,600     | 7,417,500  | 22,845,100 |
| Absaroka                        | 11,540,300    | 6,169,000     | 17,859,900 | 35,569,200 |
| Zuni                            | 16,012,900    | 14,221,900    | 26,626,900 | 58,861,700 |
| Tejas                           | 14,827,400    | 15,815,200    | 23,375,100 | 55,017,700 |
| Volume (km <sup>3</sup> )       | North America | South America | Africa     | Total      |
| Sauk                            | 3,347,690     | 1,017,910     | 6,070,490  | 10,436,090 |
| Tippecanoe                      | 4,273,080     | 1,834,940     | 6,114,910  | 12,222,930 |
| Kaskaskia                       | 5,482,040     | 3,154,390     | 3,725,900  | 12,362,330 |
| Absaroka                        | 6,312,620     | 6,073,710     | 21,075,040 | 33,461,370 |
| Zuni                            | 16,446,210    | 23,198,970    | 57,720,600 | 97,374,780 |
| Tejas                           | 17,758,530    | 32,908,080    | 28,855,530 | 79,522,140 |
| Average Thickness (km)          | North America | South America | Africa     | Total      |
| Sauk                            | 0.275         | 0.703         | 0.675      | 0.462      |
| Tippecanoe                      | 0.417         | 0.430         | 0.667      | 0.516      |
| Kaskaskia                       | 0.497         | 0.718         | 0.502      | 0.541      |
| Absaroka                        | 0.547         | 0.985         | 1.180      | .0941      |
| Zuni                            | 1.027         | 1.631         | 2.168      | 1.712      |
| Tejas                           | 1.198         | 2.081         | 1.184      | 1.445      |

Table 1. Surface area, sediment volume, and average thicknesses for North America, South America, and Africa for each of the six megasequences defined in Figure 1. Totals for the three continents are listed at the far right side for each category.



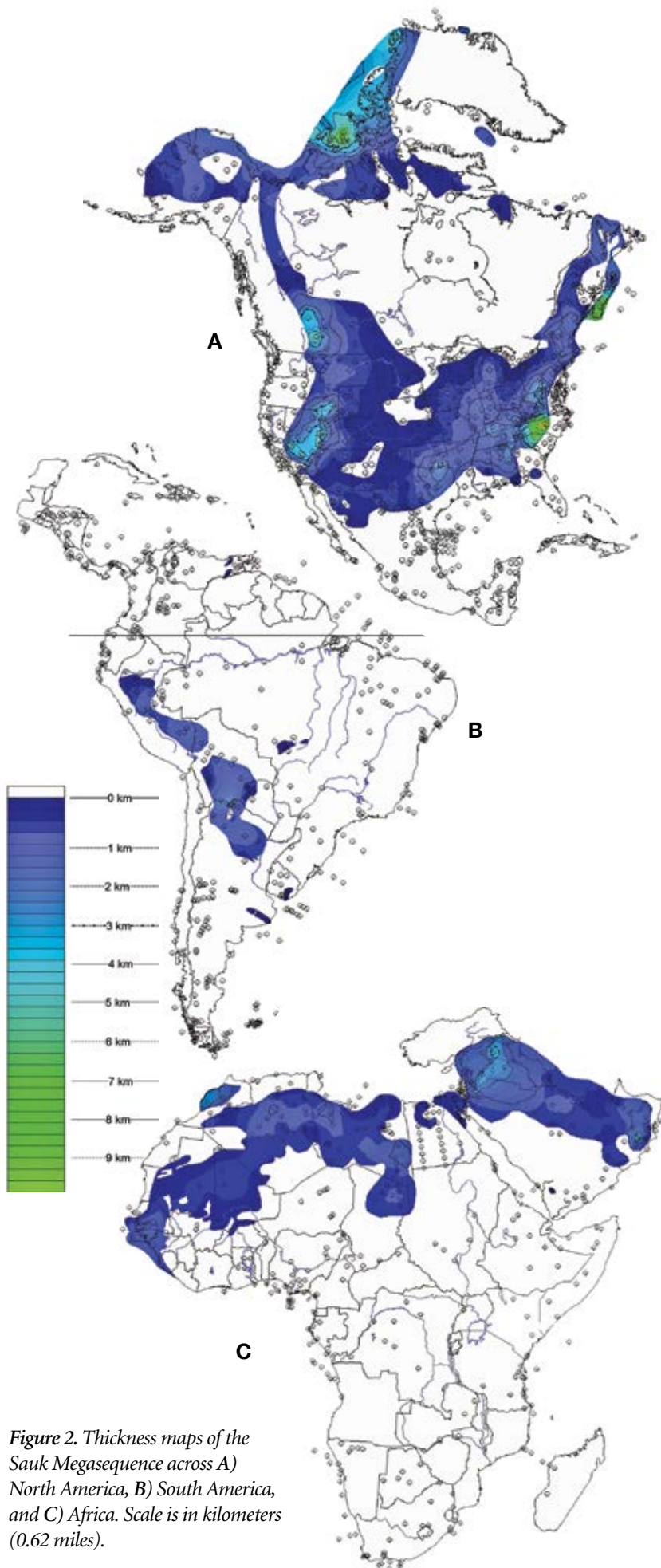


Figure 2. Thickness maps of the Sauk Megasequence across A) North America, B) South America, and C) Africa. Scale is in kilometers (0.62 miles).

In stark contrast to North America, the sedimentary rocks of the Sauk Megasequence show very little coverage across South America (Figure 2B) and Africa (Figure 2C). The South American coverage is about 1.45 million km<sup>2</sup> and across Africa is just under 9 million km<sup>2</sup> (Table 1). Only the northernmost part of Africa and the west-central portion of South America show any Sauk sediments. Finally, the total volume of sediment deposited during the Sauk Megasequence represents one of the minimal amounts for each of the three continents compared to later megasequences (Table 1).

The rock data suggest the floodwaters rose progressively as described in Genesis 7 with only limited flooding during the Sauk event. The Sauk Megasequence was only the violent beginning of the Flood, creating the Great Unconformity at its base and enclosing prolific numbers of the hard-shelled marine fossils that define the Cambrian explosion. The peak height of the floodwaters seems to have occurred later, possibly around Day 150 during the Zuni Megasequence, as that is when the coverage and volume of sediment also peak on most of the continents (Table 1).

After reviewing the vast oil-well data, we concluded that the published secular global sea level curve is inaccurate in an absolute sense and should only be considered relative at best. In addition, the amount of pre-Flood dry land inundated during Sauk deposition seems to have also been limited. As we suggested in 2015, the Sauk probably represents the effects of tsunami-like waves that transported sediment across pre-Flood shallow seas and not across land masses.<sup>5,6</sup> This could also possibly explain why so few, if any, terrestrial animals and plants are found as fossils in Sauk Megasequence rocks. ☞

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Dr. Clarey is Research Associate at the Institute for Creation Research and earned his Ph.D. in geology from Western Michigan University.



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# The Impossibility of Life's Evolutionary Beginnings

## article highlights

- The whole story of evolution ultimately relies upon a naturalistic origin of life from simple chemicals.
- Even the simplest living cell is highly complex, and evolutionists have never developed a satisfactory scenario for how life was produced through chance processes.
- After decades of research, evolutionists are still at a complete loss regarding how life began.

The hypothetical naturalistic origin of life and its most basic biomolecules from non-living matter is called *abiogenesis*. This paradigm lies at the very foundation of biological evolution, but the immensity of its naturalistic improbability is often brushed aside by evolutionists, who prefer to focus on other facets of evolution that seem less daunting.

While virtually all of the evolutionary story lacks empirical support, its greatest impediment is the fundamental problem of how life first arose. Ultimately, life requires DNA, RNA, and protein in a system

in which each molecule is dependent on the other two to both exist and function in the cell. It's even more confounding than a chicken-and-egg scenario as to which came first. Furthermore, since each type of molecule carries and conveys complex encoded information, an intelligent information originator is the only logical cause. Code implies a coder, not naturalistic random processes.

### Early Earth Atmosphere Conundrum

When evaluating the plausibility of abiogenesis scenarios, it's critical to care-

fully consider the substances that would be needed for the formation of the first biomolecules: purines, pyrimidines, amino acids, sugars, and lipids. In living cells, these essential building blocks are used to form the large biomolecules and cellular structures of life. All biological molecular activities occur *inside* the confines of a cell, which protects them from degradation by the environment. At present, the earth's atmosphere is about 21% oxygen by volume. The presence of atmospheric oxygen leads to oxidation, a pro-

.....

**"In retrospect, we were totally blinded by our belief... we were not as careful or rigorous as we should have been."**

.....

cess destructive to biomolecules that are not safely contained inside a cell. The current mass of air surrounding the earth is called an *oxidizing atmosphere* and is not conducive to abiogenesis.

Because oxidizing conditions rapidly destroy DNA, RNA, proteins, and cell membranes, evolutionists proposed that Earth's early environment had a *reducing atmosphere* with very little or zero oxygen. They also speculate that the air must have been rich in nitrogen, hydrogen, and carbon monoxide in order to assist the spontaneous appearance of basic life building blocks such as amino acids, sugars, and nucleotides.

One big problem with this whole imaginary scenario is that geological data clearly indicate the earth's atmosphere has always been similar to its current oxidizing conditions. Earth has always had significant levels of oxygen in its atmosphere, thus thwarting any idea of a reducing atmosphere favorable to abiogenesis.<sup>1-6</sup>

To get around the atmospheric problem, researchers have proposed that isolated

localized reducing environments could have existed around volcanic plumes.<sup>7</sup> However, these environments have extremely high temperatures and strong acidity and would simply not allow the formation of biomolecules. Some evolutionists might try to claim that "extremophile" microorganisms live in these environments today, but these creatures contain highly specialized and complex cellular systems that allow this—there is nothing primitive about them. Therefore, they are not representative of an ancient simple cell prototype (or proto-cell) that evolutionists believe might have existed.

David Deamer, a leading abiogenesis researcher, clearly stated the current status of this highly significant but largely unpublished origins problem:

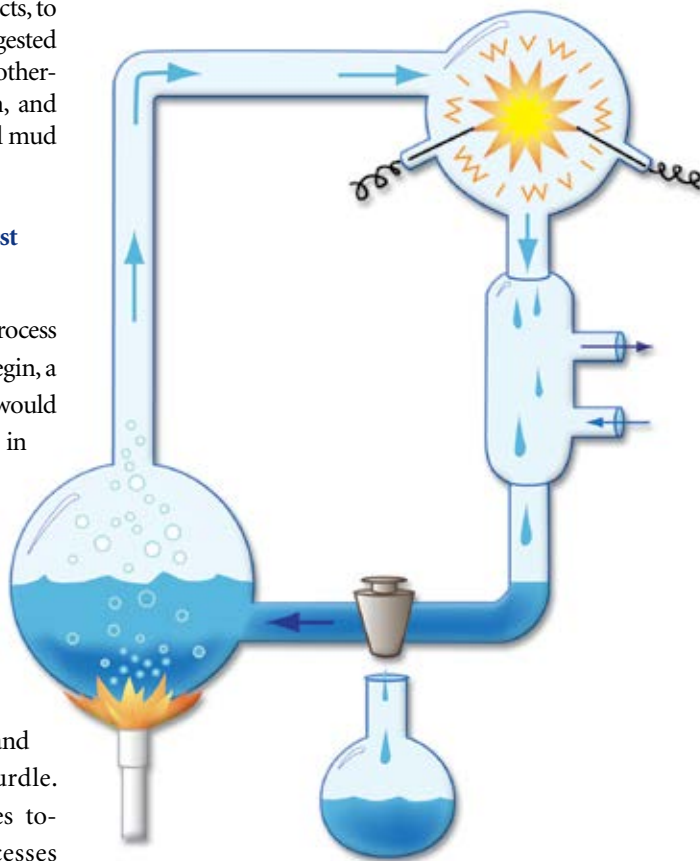
Someone from the outside world would be astonished by the lack of agreement among experts on plausible sites [for abiogenesis], which range all the way from vast sheets of ice occasionally melted by giant impacts, to "warm little ponds" first suggested by Charles Darwin, to hydrothermal vents in the deep ocean, and even to a kind of hot, mineral mud deep in Earth's crust.<sup>8</sup>

### Missing Ingredients for the First Biomolecules

Before the evolutionary process of building the first cell could begin, a diverse array of key molecules would have to be magically generated in some primordial matrix or soup. Such molecules would have to include various amino acids, pyrimidines, purines, lipids, and sugars. The alleged spontaneous generation of these key building blocks in the proper forms and amounts is an impossible hurdle. Putting these basic molecules together via naturalistic processes into larger chains and structures containing the vital molecular information needed for life is also

impossible!

In 1952, Stanley Miller performed one of the first experiments claiming to show that naturalistic processes could produce basic molecules needed for life. Chemical gases (methane, ammonia, hydrogen, and water vapor) supposedly representing those present in an early Earth atmosphere were passed through an elaborate glass tube apparatus and blasted with an electrical discharge (Figure 1).<sup>9</sup> Because the overall process destroyed the end products as fast as they were made, a trap was devised to capture the reactants. The toxic extract that resulted from this process was then analyzed for possible basic biomolecules, and trace amounts of three amino acids used in proteins were identified. A reanalysis of the archived samples in 2008 using more sensitive detection equipment identified three more amino acids used in proteins, but at very low levels.<sup>10</sup>



**Figure 1.** Apparatus used in Stanley Miller's amino acid genesis experiments.

Image credit: Susan Windsor



In the most successful variations of these experiments, scientists have been able to produce only 10 of the 20 amino acids used in biological proteins. However, there are very serious problems even with these meager results. First, the amino acids produced in these studies were only the most simple. Many of the amino acids used to make proteins are more complex and cannot be created using these techniques. They have elaborate side chains or molecular groups that can only be produced with complicated biochemical pathways in living cells. Second, amino acids can exist in both right- and left-handed versions, just like human hands. Miller-like experiments produce both types, but living cells can only use left-handed amino acids—not a mixture. Third, the trivial amount of amino acids the experiments produced were far too diluted to be of any biological use.

### The Polymerization Problem

Another impossible hurdle for abiogenesis is the chaining together (polymerization) of base molecules like amino acids and nucleotides to form proteins and DNA/RNA. In living cells, chemical bonds link these molecules together. They are assembled according to the cell's genetic information in a highly directed process that uses specific forms of molecular energy and complex enzyme (protein) machinery in sequences that are specifically ordered.

In 1958, Sydney Fox published a set of experiments using solutions of pure left-handed amino acids that bore no resemblance to the products of Miller's experiments. Fox baked the mixtures, driving out the water and linking the amino acids together in crude aggregates.<sup>11</sup> He observed the clustering of these crude spheres when placed in certain solutions and claimed these were not only a primitive form of polymerization but the beginning of cells! Of course, scientists now agree this research provided no evidence of either.

In 2004, scientists reported that carbonyl sulfide oxide, a simple chemical in

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## At present, evolutionists still have no plausible mechanism for the polymerization of proteins or nucleic acids under primitive naturalistic conditions.

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volcanic gases, can activate amino acids to form peptide bonds.<sup>12</sup> However, no more than a few amino acids could be connected, and chains of any significant size could not be produced. At present, evolutionists still have no plausible mechanism for the polymerization of proteins or nucleic acids under primitive naturalistic conditions.

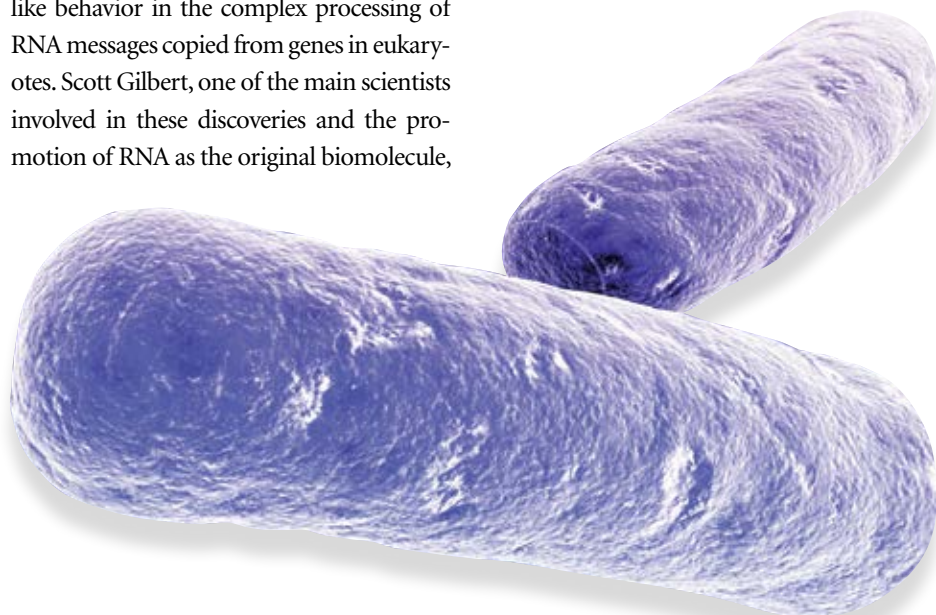
### An Imaginary RNA World

Biophysicist Alex Rich proposed in 1962 that RNA might have been the first to evolve.<sup>13</sup> Researchers thought RNA could provide both informational and enzymatic qualities in the beginning, thus bypassing the necessity of DNA and proteins. The idea that RNA was the first biomolecule slowly gained traction, becoming very popular in the 1980s when research showed that specific types of RNA were involved in enzyme-like behavior in the complex processing of RNA messages copied from genes in eukaryotes. Scott Gilbert, one of the main scientists involved in these discoveries and the promotion of RNA as the original biomolecule,

coined the term "RNA world."<sup>14</sup>

But RNA world theorists generally avoid the chief problem of where the original building blocks could have possibly come from to even make RNA. Nucleic acids like RNA are complex chains of nucleotide subunits. The nucleotides themselves are also composed of a diversity of distinct molecular subunits that contain one of four different nucleobases, a ribose sugar, and a phosphate group. The nucleobases of RNA can be two different purines (adenine and guanine) or two different pyrimidines (cytosine and uracil). Before evolutionists can even consider whether RNA was the first biomolecule, they must explain the spontaneous naturalistic origin of not only the nucleotides themselves but also their molecular subunits. Another complete impediment to evolution is the overwhelming impossibility of naturalistic processes spontaneously producing these molecules outside the complex biochemistry of a fully functioning cell.

But let's assume that all four RNA nucleotides somehow magically appeared in just the right quantities and with just the right primordial soup chemistry. The question then arises as to what chained them together to form an RNA molecule. Just as with the formation of proteins from amino acids, we run into the recurring polymerization problem. Like proteins, the formation



of RNA (polymers of nucleotides) also requires complex cellular machinery. It simply can't occur spontaneously.

But let's give the evolutionist even more imaginary slack and suppose that RNA molecules with meaningful biological information inexplicably burst onto the scene in a chemical milieu favorable to both RNA stability and life. Yet another key obstacle to the RNA world is how the first RNA replicated itself. After all, in order for this magical RNA to continue its extraordinary journey along the eons of evolution, it must be able to perpetuate.

In 2016, researchers claimed to provide a solution. They allegedly showed that RNA could be partially replicated without lengthy protein enzymes.<sup>15</sup> But they actually cheated because small chains of amino acids called *peptides* were utilized to keep the replicated products of the short RNAs from binding to each other. Peptides are shorter versions of proteins, so the RNA replication process was not really solely RNA-based, and it was also not very efficient or reliable. And the study contained some major scientific errors and could not be reproduced. As a result, the research had to be retracted, after which the authors stated, "In retrospect, we were totally blinded by our belief...we were not as careful or rigorous as we should have been."<sup>16</sup>

Another critical issue negating the RNA world scenario is that even if RNA molecules with meaningful biological information somehow miraculously appear, RNAs are inherently unstable and quickly degrade outside a cellular environment. It goes without saying that such RNA-favor-

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**At every level, the probability that life began through naturalistic processes is essentially zilch.**  
 .....

able conditions would not have been a part of the primordial soup on an early earth.

**"Primitive" Lipids and Cell Membranes?**

Complex biomolecules are quickly destroyed outside the protective enclosure of a living cell. Thus, some evolutionists have proposed that the chemical reactions leading to life's origins must have occurred within a protected and enclosed space.<sup>8</sup> Toward this end, they speculate that primitive lipids somehow self-assembled into small sphere-like structures that then in some way captured and contained the first biomolecules. This mythical and improbable scenario supposedly led to some sort of rudimentary replicating proto-cell capable of evolving into the diversity of life we see today.

The lipids found in living cells, however, are complex structures composed of different lipid chains configured with a phosphate to form specific polar structures called *phospholipids*. They are very different from the simple single-lipid chains evolutionists propose were in the first proto-cell. Cell membranes are also much more than just lipids. They contain complex populations of a wide variety of imbedded proteins and carbohydrate molecules that are involved in environmental sensing, signaling, and the import and export of a wide diversity of molecules required for function and metabolism. Early cell evolution proponents encounter numerous insurmountable problems of the complexity needed for the most "primitive" of cell membranes.

**Summary**

In response to these glaring and obvious issues, some evolutionists have proposed

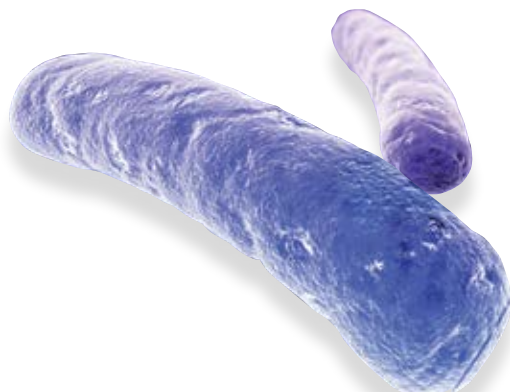
that precursor molecules required for cell life came from extraterrestrial sources such as some type of planetary meteoritic bombardment or even the alleged "seeding" of Earth by space aliens! However, even these creative imaginations only push back the overall problem to how those things originated.

Instead of coming to grips with the impossibility of life's most basic molecules arising through naturalistic processes, evolutionists have focused on other "downstream" parts of the problem. But these lines of research are filled with insurmountable hurdles, too. At every level, the probability that life began through naturalistic processes is essentially zilch. Only an all-wise and omnipotent Creator could have been responsible for the miracle of life's origins and the diversity and complexity of its amazing systems. Outside of special creation as recorded in the Bible, life doesn't stand a chance. ✂

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# ICR Discovery Center Update



*Drone shot of the discovery center—the outside is nearing completion!*



*Top: Model of Christ's empty tomb  
Middle: Model of the Garden of Eden  
Bottom: A giraffe and a bull are two of the animals being readied for the Noah's Ark exhibit.*

“ I’m excited to showcase our cutting-edge research in the new ICR Discovery Center. One of the rooms will display a 48-inch globe that will track the progression of the Flood from Day 1 to around Day 314. No other museum has anything like this, and it’s all based on real rock data from across the globe. We need your donation so visitors can see there really was a global flood. Your dollars will help us pay for this unique projection system that will undoubtedly impact thousands of lives. ”

— *Dr. Tim Clarey, ICR geologist*

“ What’s so great about this one-of-a-kind, hands-on learning center? Well, it is designed for all ages. My wife and I have seven grandchildren, and we view this center as “our family’s” discovery center. Here they will grow in the grace and knowledge of our Lord Jesus Christ as they learn how the true study of science complements what’s found in God’s precious Word. Please partner with us and contribute the necessary funds needed to complete “your” creation discovery center. ”

— *Chas Morse, ICR Director of Events*

## Help Us Complete the ICR Discovery Center’s Exhibits

As we build the ICR Discovery Center, we’re still raising funds for the interior exhibits. We’re working to develop the most educational and inspirational exhibits possible. Together, let’s point people to the truth of our Creator, the Lord Jesus Christ.

Visit [ICR.org/DiscoveryCenter](http://ICR.org/DiscoveryCenter) for more information and to find out how you can join us in this vital project. Partner with us in prayer and help us finish strong!

*Mr. Komodo Dragon looks forward to greeting you when you visit the discovery center.*



# Genesis and the Question of Entropy

In the beginning God created the heavens and the earth” (Genesis 1:1), and His creation was “very good” (v. 31). This raises the question of why our current world is in such irreversible decay. Or, as scoffers put it, why did a perfect God create an imperfect world?

The obvious answer is that God did not create an imperfect world. The world became imperfect when humans sinned (Genesis 3). From this passage, it appears a new principle of decay was enacted into creation when sin entered the world. This is known as the principle of entropy or the Second Law of Thermodynamics.

What is this law of entropy that set in motion the decay that currently dominates our natural world? The earliest ideas of entropy arose in the early 19th century out of the work of Lazare Carnot and his son Sadi with heat engines. So, the earliest concept of entropy was first associated with the study of thermodynamic systems. Subsequently, the work of Rudolf Clausius, Ludwig Boltzmann, Josiah Gibbs, and James Clerk Maxwell led to a more comprehensive definition of entropy—one that interprets all possible microstates in a system as contributing to the initial and final macrostate of that system under any type of transformation.<sup>1,2</sup>

This modern view of entropy embraces the ideas of reversibility, disorder, and randomness of a given system. For any reversible process, the change in entropy ( $\Delta S$ ) is by definition zero since there is no change in the heat energy ( $\Delta Q$ ) of the system during the process. (Change is denoted by the symbol  $\Delta$ .) This is expressed mathematically as:

$$\Delta S = \int \frac{\Delta Q}{T}$$

Unfortunately, strictly reversible processes in an isolated system (Figure 1) are not observed in nature due to dissipative forces such as friction. Reversible processes only occur in closed and open systems when the correct amounts of specific forms of energy and/or matter are supplied from *outside* the system. For example, consider a closed

## article highlights

- God created everything good.
- The world we live in, however, is a world of decay and increasing disorder because of sin.
- Evolution claims order is increasing, but there is no evidence for it.

system containing molecules A, B, C, and D in a neutral medium that interact with each other until they balance and reach equilibrium. In other words, the same number of A and B transform into C and D as C and D transform back into A and B.



Now, suppose that when we add heat to the system we drive the system toward the formation of more C and D until equilibrium is again reached. The system cannot now return to its initial condition unless heat is *removed* to restore the system to its initial state. A positive change in the heat energy of the system has occurred, and thus the entropy ( $S$ ) has increased.

$$\Delta S \geq 0$$

This is a very simplified example of an irreversible process.  $\Delta S$  is only equal to zero for fully reversible processes. Secular scientists will argue that entropy can decrease ( $\Delta S < 0$ ) toward greater order in open systems through the addition of matter or energy. However, nature abounds in examples of irreversible processes such as tornados, hurricanes, lightning strikes, floods, volcanic eruptions, earthquakes, and aging, where matter or energy is added in abundance. A broken egg does not spontaneously reassemble itself. It is indeed blind faith that believes the earth has somehow experienced a decrease of entropy over billions of years through a mysterious process called evolution when the evidence demonstrates the opposite.



Clearly, we do not live in a perfect world that continually regenerates itself.<sup>3</sup> Our fall in the Garden of Eden changed God’s perfect design into something He did not create but allowed to happen as a result of Adam and Eve’s free choice. We who are in Christ wait expectantly for the restoration of all things. As Romans 8:20-21 says, “For the creation was subjected to futility, not willingly, but because of Him who subjected it in hope; because the creation itself also will be delivered from the bondage of corruption into the glorious liberty of the children of God.”

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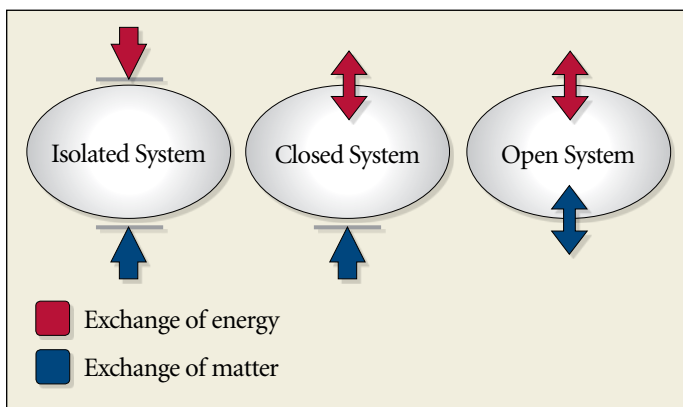


Figure 1. Schematic representation of isolated, closed, and open systems.





# Creatures' Adaptability Begins with Their Sensors

RANDY J. GULIUZZA, P.E., M.D.



## article highlights

- Creatures use sensors to read their environments and adjust accordingly—they are active problem solvers.
- This is the opposite of evolution's idea that the environment actively molds passive creatures.
- Creatures not only solve challenges and fill new environments, they have the innate ability to pass adaptations to the next generation.
- This orchestrated process begins with sensors.

What grabs our attention when we watch living creatures? Action! We lock on to their active responses. Or, as techno-lovers would say, “their outputs.” But without detectors, or “inputs,” there would be no response. As we saw in last month's article, a sensor acts as a principal triggering device for an organism's self-adjusting systems.<sup>1</sup> If we see sensors as units of an army, they are the front-line soldiers. They're where the action is, and they merit more attention and research.

Sensors trigger life-saving processes not only in human-engineered devices but also within living creatures. This Engineered Adaptability series of articles focuses on how creatures seem to continuously track environmental changes using the same key elements man-made tracking systems use—sensors, logic algorithms, and response mechanisms. This design-based, organism-focused approach explains adaptability as the outworking of an organism's incredibly intricate innate systems that enable it to re-

late to external conditions. These systems integrate with other systems that allow parents to bestow a biological inheritance that may give their offspring a head start in overcoming new challenges posed by specific environmental conditions.

So far, we've seen how an organism's systems and traits 1) specify which conditions will be stimuli, 2) determine the favorability of any condition, 3) define the conditions comprising its niche, and 4) use internal logic to select targeted responses to changed conditions. A distinctive of the continuous environmental tracking (CET) framework is that organisms are viewed as active, problem-solving entities traveling through time, detecting changed conditions, solving challenges, and filling new niches. This approach to explaining adaptations is the exact opposite of evolutionary externalism, which thinks active environments mold passive organisms.<sup>2</sup>

Understanding the engineering design and function of sensors is basic to fitting them into a design-based approach to adaptability. A fundamental question remains—do organisms really use sensors to track changing environmental conditions and initiate appropriate self-adjustments? The answer is yes, in abundance. Let's explore how some creatures use their sensors to track environmental changes.

## Sensors Detect Specific Conditions and Guide Navigation

North American monarch butterflies (*Danaus plexippus*) stay on a general southwesterly course on their 2,400-mile trip each fall from Canada or the northern U.S. to their overwintering sites in Mexico. They navigate using the sun, a process that begins with their eyes gathering data on the sun's horizontal position. But the sun changes position throughout the day. Wouldn't following a moving target lead the butterflies off course?

If human engineers were hired to design a monarch that uses the sun for navigation, their studies would notice that the

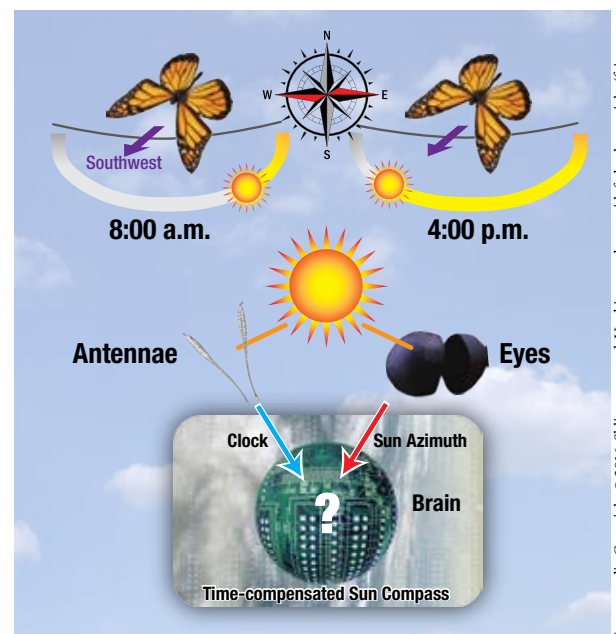


Figure 1. Proposed model of flight orientation control system for migrating monarch butterflies. Visual and circadian sensory input are integrated in a time-compensated sun compass used to maintain southwesterly flight.

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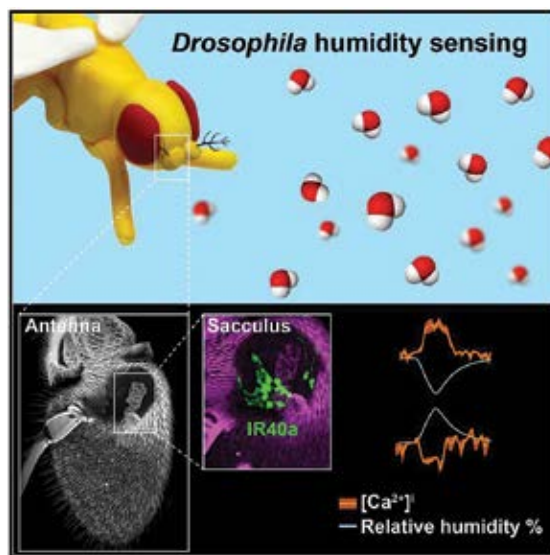
sun's rate of motion is constant. Therefore, the engineers would likely design the butterfly with an internal clock integrated with a type of algorithm to recalibrate flight per the sun's movement so it could stay on course. Research has, in fact, discovered that monarchs do have time-compensation clocks housed in their antennae. Recent investigators have made progress in producing a model to decipher how the monarchs' nervous system might integrate neuronal oscillation sensory inputs from their eyes tracking the sun's horizontal position and their circadian clocks to direct flight (Figure 1).<sup>3</sup>

Every insect seems to contain a storehouse of technological marvels that can outperform the best elements of human-designed tracking systems—including the common vinegar fly *Drosophila*. Since these insects are small and have low heat content, they risk death from dehydration if they cannot quickly locate a habitat with the water vapor concentration matching their needs. The outdoor humidity preference for *Drosophila* is species-specific. “Desert” flies prefer about a 20% relative humidity environment, while “rainforest” flies favor a humidity of around 85%.

Most insects seem to possess humidity detectors that enable them to navigate to favorable humidity ranges. Anders Enjin and his colleagues were the first to describe genes and neurons necessary for hygrosensation in *Drosophila*.<sup>4</sup> At a scale far smaller than the best human-engineered humidity sensors, the fly's microscopic and incredibly precise humidity sensor is composed of three individual neurons that project into distinct glomeruli in the posterior antennal lobe (Figure 2). This intricately calibrated humidity-detecting system flies in the face of evolutionary externalistic expectation.

### Sensors Detect Threats and Initiate Body Changes

Numerous studies document how some organisms can detect the presence of predators, respond during embryonic development—or even as adults—with specific



**Figure 2.** Microscopic humidity sensor in the sacculus, an antennal substructure, of *Drosophila* species enabling them to migrate to distinct humidity ranges of their native habitat.

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trait adjustments, and potentially pass a tendency for the adjusted form to offspring. For instance, two Norwegian scientists conducted experiments to identify elements of the underlying mechanism that causes a rapid and remarkable increase in the body depth and muscle mass of crucian carp, *Carassius carassius*, in the presence of northern pike, *Esox Lucius*, a predatory fish that eats carp (Figure 3).<sup>5</sup> Additional researchers have more recently quantified that these



**Figure 3.** (a) Crucian carp shallow-bodied shape from a predator-free pond and (b) self-adjusted deep-bodied shape in a pond after detecting chemicals secreted by predatory pike following ingestion of other carp. Scale bars, 10 mm.

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body size modifications improve the carp's escape response (a burst swimming movement and turning rate) and hinder pike from swallowing them.<sup>6</sup>

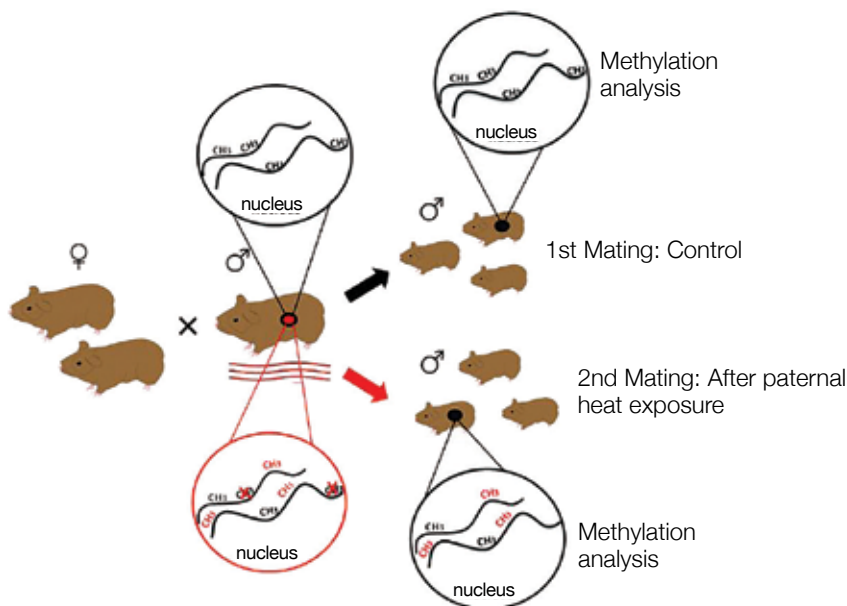
The Norwegian investigators demonstrated that crucian carp do not respond with growth changes after exposure to northern pike in and of themselves. Nor do they respond to pike that are fed Arctic char, *Salvelinus alpinus*. Morphological changes occur only after carp are exposed to pike that had been feeding on other crucian carp. They also responded when researchers added the prepared and homogenized skin tissue of crucian carp to their holding tanks. The study authors concluded “that chemical substances from the skin

of conspecific fish, expressing primer pheromone effects, are responsible for induction of the phenotypical changes.”<sup>5</sup>

Not surprisingly, both groups of researchers label the carps' self-adjustments as “predator-induced.” This characterization is consistent with evolutionists' externalistic approach to adaptability. But pike fish cannot directly induce the expression of carp genes. So, externalistic characterizations appeal to mystical events.

An approach using objective engineering causality would identify that if some carp had defective pheromone sensors due to mutations, they could be swimming in a lake full of pike feasting on other carp (thereby saturating the water with pheromones) and would not change body shape. Pheromones—i.e., external conditions—are either present or not. The change in body shape is a sensor-induced/triggered self-adjustment. Carp must have a sensor specific to the chemical found in processed carp skin, and internal programming to specify that chemical to be a stimulus, and logic algorithms to specify a targeted response before they can make the self-preserving body size modifications.





**Figure 4.** Self-regulated epigenetic changes on 13 of 19 genes known to be associated with physiological temperature regulation after paternal heat exposure. Male guinea pigs were mated to the same two female guinea pigs before and after exposure to increased temperature. Epigenetic modulations of DNA are indicated by red CH<sub>3</sub>-groups of liver biopsies taken from fathers, as well as from livers and testes of sons sired before and after heat exposure.

### Signals to Offspring for Self-Modification of Development

Research has accelerated to discover the effects of potentially increased global temperatures on species in their natural conditions. If engineers were to design organisms with a built-in resilience to dynamic temperatures, they would consider the ability to track and self-adjust to changes to be a principal consideration.

One recent study proceeded on the assumption that guinea pigs have a neurological mechanism to detect temperature changes, though it did not identify a specific sensor.<sup>7</sup> This team obtained five male, genetically diverse guinea pigs (*Cavia aperea*) from Argentina and Uruguay. As a control group, they used a generation of pups from each male mated with two females. Mating took place within natural average outdoor temperatures of 38–67°F (3.4–19.5°C).

Prior to the next mating, the males were kept in cages resting on heating plates that kept the floor at 86°F (30°C) for 60 days, which is about how long it takes for a stem cell to develop into a mature sperm cell (one

cycle of spermatogenesis). A subsequent generation of pups was obtained from the males mating with the same females that produced the control pups (Figure 4).

The researchers compared changes to molecular (epigenetic) markers placed on specific regions of DNA—but without changing the DNA sequence itself—in liver and testis tissue between the control and post-heat-treatment pups and the sires. The results disclosed epigenetic changes to 13 of 19 genes and in the promoter region of 12 additional genes known to be associated with physiological temperature regulation. The researchers concluded that “immediate and inherited paternal epigenetic response with a potential adaptation reaction that occurred in response to increased ambient temperature” may even be transmitted to the second generation.<sup>7</sup> This was the first experiment documenting an epigenetic response in mammals to temperature change, though the investigators noted that similar responses have been observed in plants, corals, fruit flies, chicken, and fish.

### Sensors Are the Triggers for Self-Adjusting Systems

The tight organism-environment relationship does not happen by chance. Not only can engineering principles explain this relationship, there is evidence they are the only non-mystical principles capable of explaining it. Why? In order for two autonomous entities to work together, even living ones, design analysis shows they each must be controlled by incredibly complicated innate systems working for that purpose.

Obviously, sensors play a key role in a design-based, organism-focused framework of adaptability like continuous environmental tracking—even if many researchers do not bother to look for them. The CET framework predicts that sensors are crucial for adaptable systems, and therefore exploration efforts should be made to identify them. Sensors are the triggers for the internal systems that empower organisms to be active, problem-solving entities. Instead of being passive objects molded by the environment, living creatures actively detect changed conditions, solve challenges, and fill new niches within their lifetime and pass the adapted traits to their offspring. And it all begins with sensors. ☞

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# Q: When Did Noah's Flood Happen?

## article highlights

- The Bible records historical events and dates throughout its pages.
- Bible scholars recently aligned these dates with other historical records to pinpoint Abram's birth.
- The Genesis record suggests the Bible may also allow us to pinpoint the Flood year.

**A** Unlike all other religious texts, the Bible supplies hundreds of time stamps for key events. They let us test the Bible against itself and the history recorded outside the Bible. However, not all the Bible's timed events add up easily since ancient authors used different counting practices at different times. For example, they may have begun counting the years of a king's reign while that king's father was still on the throne. Recent success in calculating a precise biblical timeline back to Abraham suggests that dating Bible events can reach back even further than that.

It took scholars a long time to solve enough time riddles so they could determine Abram's birth at 2166 B.C.<sup>1</sup> What took them so long? Too many assumed Scripture got various details wrong. That led to confusion. But a few hoped thorough study might reveal that the Bible has a coherent chronology—a timeline that keeps perfect harmony with every time-related verse. They finally worked out the Bible's exact timeline back to Abraham.

Scholars next wanted to merge the Bible's chronology with today's calendar system. To do this, they needed to find a firmly dated biblical event. Babylon's terrible takedown of Jerusalem marked the end of Judah's kings. This one event ties the timelines together. Different scholars separately deduced summer 587 B.C. for the fall of Jerusalem.<sup>2</sup> Stone inscriptions of kings' reigns on monuments like the Babylonian Chronicles exactly fit that date.

Bible scholar Andrew Steinmann's book *From Abraham to Paul* gives the dates below, among many others.<sup>3</sup> B.C. dates count backward from year 1, so larger numbers signal older events.

| B.C. Date | Event                               | Reference                    |
|-----------|-------------------------------------|------------------------------|
| 2         | Birth of the Lord Jesus             | Luke 2:7                     |
| 479       | Esther's 12-month preparation       | Esther 2:12                  |
| 538       | Cyrus decrees temple reconstruction | 2 Chronicles 36:22; Daniel 9 |
| 587       | Fall of Jerusalem                   | 2 Kings 25:8; Ezekiel 30:20  |
| 740       | Isaiah's calling                    | Isaiah 6:1                   |
| 932       | Solomon's first year as king        | 1 Kings 11:42                |
| 1446      | The Exodus                          | 1 Kings 6:1                  |
| 1899      | Joseph sold into slavery            | Genesis 37:2                 |
| 2166      | Birth of Abram                      | Genesis 11:26                |

Cautious scholars are still working to settle a few final time tangles, but their success so far suggests that the Bible's verifiable time stamps reach back even further than Abraham.<sup>4</sup> The lifespans in Genesis 11 span from Abram back to the Flood. When we add the years listed in Genesis 11 to Abram's birth year 2166 B.C., we get about 2472 B.C. for the Flood year. Add the 1,656 years from Genesis 5 to that and we get nearly 4128 B.C. for Earth's birthday, based on the Masoretic text of the Old Testament.

We qualify these dates with words like "about" because of small unknowns. For example, we don't know whether or not the Genesis 11 begetting years include time in the womb.<sup>5</sup> But uncertainties keep shrinking. Confidence grows in the Bible's time stamps. Serious scholars are now closer than ever to using just the Bible to pinpoint ages of ancient events like the Flood.<sup>6</sup>

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6. The Flood at ~2472 B.C. + 2018 A.D. = ~4,500 years ago.

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# Something Fishy about Global Warming Claims

After the Flood, God promised Noah that Earth would have predictable patterns of climates and seasons: “While the earth remains, seed-time and harvest, cold and heat, winter and summer, and day and night shall not cease.”<sup>1</sup> This promise is trustworthy because God is trustworthy, and He controls Earth’s climates and seasons.

But recently God’s promise has been distrusted, doubted, and denied by many who assert that human activities are so out of control we should fear the loss of previously stable climate patterns. In effect, these alarmists ignore God’s promise and His sovereign control, as if humans can determine the destiny of Earth’s climate.

But what if government reports support notions of man-made global warming and an upcoming climate crisis? Would that prove God has lost His stabilizing grip on Earth’s environmental parameters? Consider the Alaska pollock, the cod-like whitefish some say is now the number one money finfish in America’s food industry. Huge pollock populations once filled certain areas of the Bering Sea and North Pacific, but the southern edge of their range is shrinking. Some suggest the pollocks are migrating north due to climate change.<sup>2</sup> Is this the case?

Marine biologists and biogeography ecologists study regional changes in oceanic fish populations.<sup>2,3</sup>

We expect fish stocks to naturally fluctuate with changes in climate [such as when Baltic herring relocated about A.D. 1300 as the Medieval Warm Period transitioned into the Little Ice Age]. Usually, during periods of warming or cooling, fish stocks residing at the polar ends of the population’s range increase or decrease accordingly, while the reverse happens at the other end.<sup>2</sup>

If huge populations of Alaska pollock relocate north or south, that migration’s cause is a big deal—not just for the food industry but also because global warming ad-

## article highlights

- Man-made global warming—now called climate change—is often blamed for ecological problems like the population decline of Alaska pollock.
- A closer look at the data suggests a different answer: overfishing.
- God promised we would have seasonal weather as long as Earth exists. God’s promises are sure.

vocacy is a billion-dollar industry. Government-funded research projects often depend upon climate change theories.<sup>2</sup>

However, government databases are not immune to error. Scientific analyses cannot have stronger validity than their underlying data. Misinformation can multiply when filtered through multiple users. Database errors accrue and snowball, infecting and proliferating into multi-generational “viral” outcomes, due in part to “veneer review” and statistics-distorting cherry-picking.<sup>2,4</sup> When billions of dollars hang in the balance, both scientific research (i.e., observing and collecting data) and scientific analysis (i.e., sorting and interpreting data) are vulnerable to compromise and corruption.<sup>2,4</sup>

Government databases on the fishing industry rely on at-sea reporting that includes inspector monitoring of fishing quotas.<sup>2</sup> However, the information the inspectors collect can be unreliable.

We discovered that our estimates [of the total catch tonnage] were about double the catches reported to us. All signs pointed to tampering of the scales.... The catcher boats now delivered [at different places] and at all hours. Previously they had delivered to one main site on the [mothership] deck and only during daylight hours.<sup>5</sup>

Dishonest commercial fishermen habitually underreport catches, deceptively circumventing inspector audits. Commercial fishing motherships often obstruct or evade



Pollock are sorted on board the NOAA ship Miller Freeman during a 2007 assessment.

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monitors, sometimes reporting only half the catches received.<sup>1,3</sup> Consequently, government databases misreport the real situation.

Should further research, farther north, be looked at to see if climate change is really causing the pollock population to migrate northward? Could it be the cause-and-effect reality is embarrassingly simple and overlooked<sup>6</sup> as evolutionists rush to blame global warming for yet another ecosystem alteration? In the case of pollock, several stocks at either end of their range in the north Pacific Ocean have decreased recently, leading to suspicion of overfishing as the primary cause for the population decreases.<sup>2</sup>

This is but one example of how careful fact-finding refutes global warming alarmism, corroborating God’s promise in Genesis 8:22. Despite what popular science purports to show, we can rely on God’s Word. ☞

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# Sufficiency, Abundance, and Apologetics in Action

Throughout his extensive missionary journeys, the apostle Paul never asked for money from the people to whom he preached. By day Paul would toil at his trade as a tentmaker (Acts 18:3), and by night he would minister to the people wherever he was. In Thessalonica, he labored “night and day, that we might not be a burden to any of you” even as he “preached to you the gospel of God” (1 Thessalonians 2:9). In Ephesus, Paul “coveted no one’s silver or gold” and personally “provided for [his own] necessities” to show them “by laboring like this, that you must support the weak” (Acts 20:33-35). Even so, he stressed Christ’s teaching that “the laborer is worthy of his wages” (1 Timothy 5:18; Luke 10:7) and that “the Lord has commanded that those who preach the gospel should [make a living] from the gospel” (1 Corinthians 9:14).

But of himself he simply said, “I have used none of these things, nor have I written these things that it should be done so to me” (1 Corinthians 9:15). We can understand then why Paul was so deeply moved when the impoverished believers in Philippi “sent aid once and again for [his] necessities” (Philippians 4:16). They did this without being asked, and apparently they were the only ones who did, for “no church shared with me concerning giving and receiving but you only” (Philippians 4:15). Paul recognized their sacrificial gifts came about because “they first gave themselves to the Lord” (2 Corinthians 8:5). Consequently, Paul could promise them, “My God shall supply all your need according to His riches in glory

## article highlights

- Paul commended the Philippian believers’ sacrificial giving to support his ministry.
- On Mars Hill, Paul used his listeners’ false religious beliefs to introduce the gospel.
- In a similar way, the ICR Discovery Center will use scientific evidence to confront the modern false religion of evolutionary science.



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by Christ Jesus” (Philippians 4:19). That is, every need, not just their material needs.

The Philippians had learned a marvelous truth that every Christian needs to know. As Paul told the Ephesian elders, “Remember the words of the Lord Jesus, that He said, ‘It is more blessed to give than to receive’” (Acts 20:35). Moreover, each of us should not give “grudgingly or of necessity [i.e., reluctantly or out of obligation]; for God loves a cheerful giver. And God is able to make all grace abound toward you, that you, always having all sufficiency in all things, may have an abundance for every good work” (2 Corinthians 9:7-8).

Many Christians today, especially those in the Western world, have “sufficiency

in all things” thanks to God’s grace. And we should happily respond in “abundance for every good work” to those needs and projects the Lord places on our hearts. Certain needs are more urgent, of course, and it is wise to be sensitive to projects that can make a significant impact for God’s work. The ICR Discovery Center for Science and Earth History is just such a project—a unique 21st-century version of Paul’s Mars Hill address (Acts 17:22-34) that will reach hundreds of thousands each year.

Paul’s address is a classic example of apologetics in action. By first recognizing where his audience was coming from, he used their false religious beliefs to introduce them to the One “who made the world and everything in it” (Acts 17:24) and to proclaim the gospel of Christ in a logical fashion. In many respects, science is the religion of our day. So, just as Paul masterfully used the philosophers’ religious idolatry as a starting point to present the gospel, the ICR Discovery Center will present scientific evidence to enable visitors to discover the truth of Scripture. ICR is currently working on cutting-edge exhibits that reveal scientific evidence and biblical truth in engaging and convincing ways, and we need financial help from God’s people to finish. If you want to be part of a truly significant project for the cause of Christ, please prayerfully consider helping ICR with a generous gift today. ✉

Mr. Morris is Director of Donor Relations at the Institute for Creation Research.



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Oh my! This blew my mind...I love it! As always, your posts bring clarity and a testimony to what's true. Crazy to think about everything from microorganisms to planetary objects (and everything in between) having to have an evolutionary period that just isn't there. **Honestly, I never thought of evolution beyond living organisms—eye-opening.**

— M. O.



Just wanted to let you know we bought the kids (3, 7, and 8) the ICR five-book [Guide to] series and the two kid's books [Space: God's Majestic Handiwork and Dinosaurs: God's Mysterious Creatures] for Christmas. The books are excellent! **Each page is packed with information, and the kids loved them almost as much as I did. You guys did a great job on them, and they should be on every school-age child's bookshelf.**

— R. T.

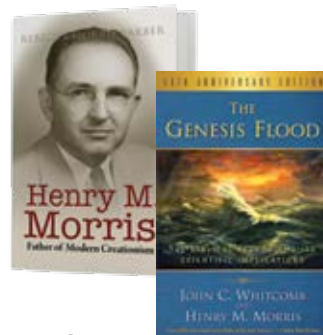


I just thought I'd tell you...that early in my Christian walk (1975) two men, **Duane Gish and Dr. Henry Morris, had a profound impact on my Christian testimony.** Their newly published findings on the fossil record, the case for a worldwide flood, evidence that destroys the theory of evolution, etc., encouraged my willingness to "scientifically" explain biblical principles their findings corroborated. Evidence for this argument is shown in the number of men and women in the scientific community that joined the ranks of the ICR staff.

— W. B.

I have read the biography of Henry Morris' life and found it fascinating and encouraging. I'm so thankful for this man's testimony, research, and legacy of faithfulness to the Lord. **After reading the book, I realized I had never read *The Genesis Flood*, so I have just finished that one too.** Thank you so much for your wonderful publications.

— L. R.



Loved Dr. Cupps' [January 2018 *Acts & Facts*] article on stellar nucleosynthesis—it's a dagger in the heart of macroevolution. I have been aware for a while that **the impossibility of producing elements heavier than iron through stellar fusion is an argument that demonstrates the truth of Genesis 1:1 and is impossible for evolutionists to refute.** I was not aware how endothermic that reaction is until Dr. Cupps clearly explained it. He did it in terms that someone with a very basic knowledge of physics and astronomy can easily understand, and he showed how attempts by evolutionists to explain the existence of the "heavy metals" fall flat! Genesis 1:1 is the only explanation for the creation of the universe! Glad he is a scientist at ICR, and I love his writings!

— L. I.



I love your *Acts & Facts* magazine. The articles are so informative and up-to-date. **I'm a teenager who has been struggling with my faith and what I believe in. Your magazine changed that.** About a year ago, I found that my dad had been getting your magazine for a while, and I found one and read it. Ever since then, I've been getting stronger in my faith, and now I'm thinking that I might like to become a creation paleontologist. Thank you very much, ICR! Please keep up the good work, and I hope to join the ranks of creation paleontologists someday!

— E. D.



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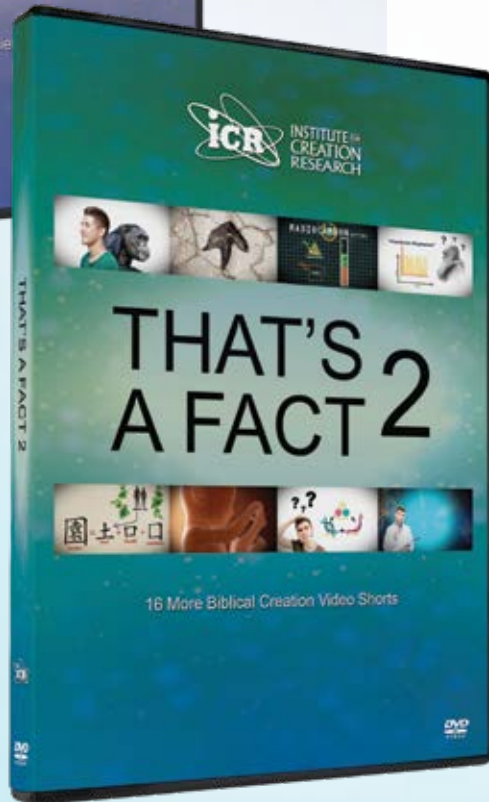
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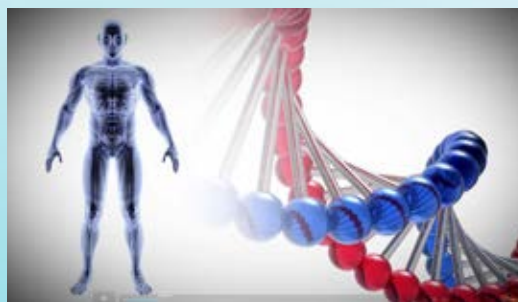
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