Creation Matters

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The Importance of Flood Geology

Why Geology Matters

by

Michael J. Oard, MS and John K. Reed, PhD

Editor's note: This is the first in a series of articles emphasizing the unique role that geology plays in establishing a creation model of origins. Our goal in presenting these articles is to encourage the study of geology, especially by those who are beginning their careers in creation science. This project is headed by Mike Oard, a meteorologist who has been studying creation geology for over 40 years. He will be assisted from time to time by John Reed, who has a Ph.D. in geology.

Creationists value physics, chemistry, and mathematics because they communicate divine design at all scales. Biology extends it (design) into the world of the living. Geology, however, has a much different purpose for creationists. It is not "home field," but it is the arena in which the conflict between Christianity and naturalism first took place. Secular scientists claim that their strongest evidence against the Bible comes from geology. Historically, skepticism of the Flood opened the floodgates for a thorough skepticism of the Bible. Finally, the timescale of uniformitarian history is the cornerstone of evolution. For all these reasons, geology is of key importance for creationists.

Strong positive evidence in biology

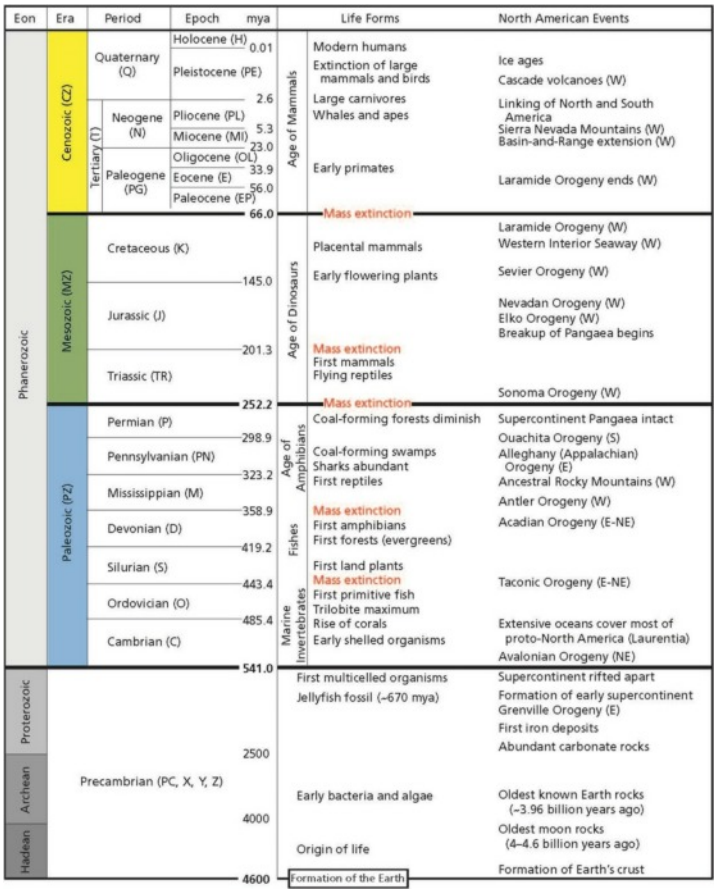
At present, the strongest evidence for creation comes from biology (Carter, 2015; Denton, 2016; Sanford, 2005; Sarfati, 2008, 2010). The vast complexity of nature, down to the simplest cell, reveals amazing design. *Not one step* in the evolutionary explanation of life can overcome the challenges of simple probability theory (Coppedge, 1973). Design requires a Designer with attributes of amazing power, mathematical skill, and artistic ability. That is why Romans 1:20 declares that evidence for the existence of God, from the world around us, is obvious:

> For his invisible attributes, namely, his eternal power and divine nature, have been clearly perceived, ever since the creation of the world, in the things that have been made. So they are without excuse (ESV).

Secularists claim geology

But secularists selectively ignore biological evidence against evolution, and cite "proofs" found in geology's deep time (the millions of years). They point to the geological column as demonstrating that man evolved from a simple Precambrian cell. Figure 1 shows the geological column and the change in organisms upward through geological time.

Creationists should be able to see that the evolutionists' arguments are circular because of unproven (and often incoherent) assumptions which have been inherent in geology for centuries. During the 1600s and 1700s, atheism was replacing the biblical worldview in Western culture. Science was seen as an alternative to the Bible and theology. But, because history reinforced the Bible, atheism needed an historical answer. It could not be directly scientific — science was a tool operating in the present. Yet atheism devised a way to extrapolate science into the past. This was done by the doctrine of uniformitarianism, and its as-close-to-static-as-possible view of time. If conditions were essentially the same over time, then science could be indirectly applied at any point in the past using forensic evidence.



NPS.gov National Park Service (Public domain)

FIGURE 1. *The geological time scale of evolution. From the National Park Service. https://nps.gov/subjects/geology/time-scale.htm*

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Math Matters
by
Don DeYoung, PhD

Stephen Hawking's Tombstone

An earlier *Creation Matters* article described several math and science epitaphs appearing on burial headstones (DeYoung, 2009). With the passing of Stephen Hawking at age 76 on March 14, 2018, we have a new entry. Hawking was a world-class cosmologist and also a popularizer of science, who overcame severe disability. Unfortunately, he displayed a growing resistance to his Maker as illustrated by this quote, "There is no heaven or afterlife…that is a fairy story for people afraid of the dark (Sample, 2011).

Hawking requested that a physics formula be etched on his grave in Westminster Abbey, London,

$$S = \pi Akc^3/2hG$$

This *Hawking Equation* encompasses the idea that black holes are not closed systems. Instead, they glow with emitted radiation and will eventually evaporate. This should be no surprise since black holes, protons, and every other object in the physical universe are subject to eventual decay via the Second Law of Thermodynamics. Hawking radiation has not yet been verified by observation.

Stephen Hawking
(photographer: Doug Wheller, 2015. Wikimedia Commons, Stephen_Hawking_in_Cambridge.jpg)

In the formula, S represents the entropy of a black hole, and A is the surface area of its event horizon. Quantum particle fluctuations at this boundary allow Hawking radiation to escape and carry away energy. The Boltzmann constant k relates heat and energy, c is light speed, h is Planck's constant, and G is the gravitational constant.

Hawking's equation may well be a valid description of the entropy or disorder within a black hole. This leading scientist deeply explored mathematics, the language of creation, and yet gave no credit to the Creator of the universe. Here lies a paradox: Stephen Hawing (1942–2018) was an intellectual giant but apparently lacked the wisdom of knowing God. Only God discerns where a person stands; however, Psalm 14:1 is clear, "The fool says in his heart, 'There is no God.'"

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If you have not renewed your CRS membership, this will be your final issue of
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A Vestigial Organs Update: Tonsils and Appendix

by Jerry Bergman, PhD

Darwin concluded that the descent-with-modification theory (the phrase he used for evolution) explained

> …the existence of organs in a rudimentary, imperfect, and useless condition, or quite aborted, *far from presenting a strange difficulty, as they assuredly do on the old doctrine of creation, might even have been anticipated in accordance with* [evolution]. (Darwin, 1859, pp. 346–350, emphasis added; Darwin, 1871).

In 1911, a medical doctor wrote that the "Darwinian construction of 'rudimentary organs' is utterly untenable. There are no rudimentary organs, the function of the organs so called are gradually being discovered." He then added, the "two rudimentary organs which are still being abused are the tonsils and the appendix." (Schultz, 1911, p. 13). Such "abuse" continues to this day.

Tonsils

During a routine visit to the doctor when I was about age 5, he asked if I had had my tonsils out. My mother answered, "no." He then said we need to get them out soon. When I asked why, the doctor answered, "because they do not have a function and just cause trouble. The younger you are when you have them out, the better." I also remember asking why I even had tonsils if they have no function. The doctor said it was because we evolved from ape-like animals that used them, and we do not; thus, they are evolutionary leftovers. So, I had the surgery, and I have been interested in the topic of vestigial organs ever since.

Recently, the largest long-term study on the effect of tonsillectomies ever completed was published (Byars, Stearns, and Boomsma, 2018). Previous to this, most studies were short-term, such as 6 months, or at most, a few years. This new study followed the patients for close to 30 years post-surgery, and involved a total of 1.2 million subjects, including all children in Denmark born between 1979 and 1999. Of those, 17,460 underwent adenoidectomies, and 11,830 experienced tonsillectomies within the first 9 years of life. Their health records were compared to the 1,157,684 who had retained both their adenoids and tonsils. The results were devastating for the procedure, with the researchers concluding that these organs should be removed only in severe cases. The 30-year research indicated that the modest benefits of the operations mostly vanished by age 40 (Byars, Stearns, and Boomsma, 2018).

As many as one in five people who underwent a tonsillectomy suffered from serious diseases that they would otherwise never have acquired. This common childhood procedure more than tripled asthma risk, and doubled the rates of chronic bronchitis, emphysema, upper respiratory tract diseases, and conjunctivitis (Bodlin, 2018). It also increased the risk of allergies, influenza, pneumonia, and infectious diseases in general. The researchers suggested that with an even longer follow-up study, there could also have been an increased rate of certain cancers and heart diseases (Byars, Stearns, and Boomsma, 2017). One possible reason for these increased risks is that removing the tonsils during the first decade of life interferes with normal immune system development, thus reducing protection against future disease (Nave, Gebert, and Pabst, 2001).

Fortunately, the frequency of tonsillectomies has dropped from a high of around 200,000 annually in the 1950s, to under 50,000 today. This is in marked contrast to the trend a few years ago when merely a reoccurring sore throat, alone, prompted their removal. The evidence demonstrated that the performance of tonsillectomies while the patients are young is linked to respiratory disease (Ochs, 2018).

One factor that motivated the removal of the tonsils was, as Darwin argued in his writings on rudimentary organs, that they had no function, but were merely vestiges left over from our primate evolutionary past (Taylor, 2015). We now know that they are the first line of the body's immunological defense system; thus, the director of this recent study urged pediatricians to drastically limit the number of tonsillectomies performed, or at least delay the procedure for as long as possible.

Human appendix

The same trend has been seen in the removal of the human appendix. The appendix, once thought to have no function in humans, was often listed as one of the "strongest evidences" supporting evolution. Prophylactic appendectomy is even occasionally performed (Kersting et al., 2017) when abdominal surgery is undertaken. In light of the new evidence presented below, such recommendations should be reconsidered. A possible exception is in the case of extended-duration space flight (e.g., to Mars), where extensive on-board medical/surgical capabilities are not present (Ball et al., 2012).

One of the several functions of the appendix is to "reboot" the digestive system. Its location — just below the normal one-way flow of food and bacteria in the large intestine, in a sort of gut cul-de-sac — supports the theory that it acts as a "safe house" for beneficial bacteria (Bollinger et al., 2007). In this role, the appendix protects and fosters the growth of "good germs" required in the intestines, enabling the digestive bacteria to "reboot" after bouts of disease such as cholera, or following the use of antibiotics. Diarrhea resulting from a pathogen can flush out the good bacteria from the colon. The bacteria in the appendix are normally not affected by diarrhea or antibiotics, and can rapidly repopulate the colon with beneficial bacteria.

Editor's note: Dr. Bergman is coauthor of the classic book titled *Vestigial Organs Are Fully Functional*, which is currently on sale at the CRS online bookstore (http://www.crsbooks.com). He is writing a new, updated, and greatly expanded book on the same topic, which will be released soon.

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Matters of Fact

by

Jean K. Lightner, DVM, MS

Troglomorphism: Genetic or Epigenetic?

Editor's note: You may submit your question to Dr. Jean Lightner at jean@creationresearch.org. It will not be possible to provide an answer for each question, but she will choose those which have a broad appeal and lend themselves to relatively short answers.

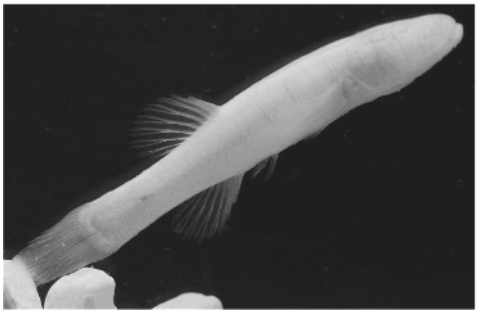
Q How do you account for the loss of sight and pigmentation in cave animals?

A It appears that both genetic and epigenetic modifications can play a role in animals' adapting to life in a cave. There is commonly a suite of changes in troglomorphic animals, those that have adapted to living in the constant darkness of caves. This may include not only loss of eyes and pigmentation, but may involve changes in skull shape, alteration in metabolism, and augmentation of other sensory organs (Stahl and Gross, 2017).

Darwin's hypothesis

Darwin is best known for popularizing evolution by natural selection. For many of his observations, he could tell a seemingly plausible story of how the prevalence of a trait could have resulted from natural selection. However, when it came to the loss of eyes in cave dwelling creatures, he believed that it resulted from disuse. This is because he saw no reason that eyes should be disadvantageous in the dark and, thus, no reason why natural selection would act on this trait. He, therefore, resorted to a more Lamarckian explanation.

The neutral hypothesis, or the idea that disruptive mutations have accumulated in the absence of selection, has long been the favored hypothesis for the loss of eyes and pigment in cave animals. However, a number of recent genetic, developmental, and physiological studies in cavefish suggest that these changes are adaptive. Thus, ironically, scientists today are more likely to use the Darwinian explanation of natural selection to account for these changes (Krishnan and Rohner, 2017; Borowsky, 2018).



*The Hoosier cavefish (*Amblyopsis hoosieri*) from Indiana (USA), which was described in 2014, exhibits a troglomorphic phenotype, including the loss of eyes and pigment. Photograph by M.L. Niemiller. 29 May 2014. wikimedia commons.file:Amblyopsis_hoosieri_29330.jpg (license CCA 3.0)*

Of course, it is overly simplistic to assume that either natural selection or random events (i.e., accidental mutation plus genetic drift) can sufficiently account for the differences between surface-dwelling and cave-dwelling morphs. Observational studies are helping us to decipher some of the underlying factors that contribute to the repeated development of the troglomorphic morphology in various species of animals.

A natural replicated experiment

Cavefish are an excellent model for studying troglomorphic adaptation. Over 200 species of obligatory cavefish, those that spend entire lives in caves, have been described. The vast majority are believed to have evolved independently from surface ancestors. This makes cavefish like a replicated natural experiment. Through various comparisons we have begun to understand the basis for the phenotypic changes (Borowsky, 2017; Stahl and Gross, 2017).

Numerous studies have involved the Mexican Tetra, *Astyanax mexicanus*. This species is widely distributed in surface waters, and has troglomorphic morphs inhabiting at least 29 caves. The cave populations are believed to have been derived from at least five different colonization events. Individuals from all cave and surface populations can be crossed, which can aid in identifying differences unique to the cave morphs.

When blind, depigmented cavefish from different populations are crossed, their offspring often resemble surface-dwelling fish more than they do their parents. This highlights the fact that different pathways may lead to the same phenotype, and a normal allele from one of the cave populations can compensate for an altered allele in the other to restore some of the ancestral phenotype. It also suggests that, often, different genes can be used (convergent evolution), rather than always making use of the same gene (parallel evolution) to achieve a particular phenotype (Borowsky, 2017). Of course, this type of evolution does nothing to support molecules-to-man evolution. Instead, it relies on pre-existing (created) complexity and merely alters certain components in an adaptive way.

Depigmentation

Through examining a few examples related to pigmentation, we begin to realize just how complex and varied adaptation can be. Loss of pigment can be through a reduction of dark pigment cells (melanophores), a change in the structure of the pigment (melanin), and/or a complete loss of melanin.

In the blind cavefish *Astyanax*, mutation in a single gene results in a loss or modification of melanin, while 10 or more genes influence a reduction of melanophores. So, sometimes there can be a single mutation with a large effect, but at other times a number of mutations can contribute to the altered phenotype.

Albinism is fairly common in cavefish. In many cases, the gene involved is *oca2* (oculocutaneous albinism type 2), which is the same gene most commonly involved in human albinism. The only known function of this large gene (> 20 exons) is as an upstream regulator of melanin synthesis. Three independently derived populations of *Astyanax* were found to carry mutations in this gene, yet the specific mutations were different. While loss of function in this gene does not directly harm the organism, it has been debated whether it is adaptive. Recently, some evidence suggests that ablation of melanin synthesis may increase the availability to tyrosine, allowing this building block to be used adaptively in a different pathway for catecholamine production (Bilandžija et al., 2013).

Eye loss

Developmental studies have shown that eye development begins normally in cavefish, but soon the process is arrested and, subsequently, the early components of the eye degenerate. It appears that this initial development is necessary, as early eye formation is linked to development of the forebrain. The sonic hedgehog (*Shh*) gene is one important player in altering the course of eye development. Upregulation of *Shh* has been detected in cavefish, and has been shown to produce a similar phenotype when induced in surface fish. However, there is not likely to be a mutation in or near this gene, as it has not been detected in the quantitative trait loci (QTL) studies which identify altered genes associated with a phenotype (Krishnan and Rohner, 2017).

There have been eye development genes identified which are associated with the blind cave morph. However, none of these regions have been shown to harbor inactivating mutations. A recent study showed hypermethylation of a number of key eye genes of blind cavefish. Further investigation of several genes verified that they were down regulated in blind cave morphs (Gore et al., 2018). At this point it is unclear whether changes in methylation pattern are strictly a response to the environment, or possibly influenced by genetic changes elsewhere in the genome.

Implications

Adaptations in obligate cave-dwelling animals are complex and involve a number of mechanisms. Sometimes a mutation in one gene will have a significant effect on a trait, while other times changes in many genes are involved. There is often more than one pathway to modify a trait, and some changes appear to be epigenetic rather than strictly genetic. However, since multiple changes are involved, it does not appear that a troglomorphic phenotype could be reversible to any significant extent.

The complex processes by which animals have repeatedly adapted to live in caves brings out several important points. God marvelously designed his creatures with the ability to adapt, enabling them to reproduce and fill the earth as He intended (Genesis 1:22; 8:15–19; Isaiah 45:18). Further, the ability to adapt requires pre-existing complexity that can be modified in ways to benefit the organism in its new environment—not the type of thing one can achieve through purely naturalistic processes.

Finally, the more we learn about adaptation, the more we catch a glimpse of God's awesome works and greatness. We see His foresight and compassion more clearly, and are able to declare His praise in the midst of our skeptical culture (Psalm 145:1–10).

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Speaking of Science

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explaining how chance made complex systems 'arise' or 'develop' or 'emerge'? Just choose your favorite euphemism. Once you attribute the origin of something to sheer dumb luck, there's not much more to say.

What's good for the goose is good for the gander. If "God did it" is too simplistic for an evolutionist, "It evolved" is too simplistic for a creationist. Don't let the Darwinians pretend to have a superior explanation for the origin of complex systems. When they discuss the origin of a complex phenomenon and take the lazy way out, press them for details, using their own theory. What gene mutated? What did it do? When did it happen? How did the gene spread through the population? How frequently do beneficial mutations happen relative to neutral and harmful mutations? Are there enough beneficials to overcome the downward spiral of genetic entropy? Did the mutation have any deleterious pleiotropic effects? Were coordinated mutations required? How long would that take? Have you calculated the probability? Is there enough time in the universe for that to occur? Do 747's evolve from tornadoes in junkyards? Pile it on till they cry uncle and admit, "I have no idea. I just take Darwin on faith."

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The CRS Board of Directors Hold Their 55th Annual Meeting

Attendees

Back row: Gene Chaffin, Rob Carter, Russ Humphreys, Mike Oard, Jean Lightner, Danny Faulkner, Tim Clarey, Glen Wolfrom, Gary Locklair

Front row: Jerry Bergman, Diane Anderson*, Kevin Anderson*, Robert Hill, Don DeYoung, Ron Samec

Not shown: John Reed, Mark Horstemeyer

*Diane and Kevin Anderson are employees of the Society. Kevin is Director of the Research Center.

CRS Fellows

Dr. Russell Humphreys (left photo) and Dr. Gary Locklair (right) were elected as Fellows of the Creation Research Society. A person may be designated as a Fellow on the basis of his or her outstanding scholarship and service to the Society. An individual must receive a favorable vote of at least two-thirds of the members of the Board of Directors. For these gentlemen, the votes were unanimous. Congratulations, Russ and Gary!!

Service Awards

Left photo: Gary Locklair, 20 yr.; Gene Chaffin, 30 yr.; Glen Wolfrom, 35 yr.

Right photo: Kevin and Diane Anderson, 15 yr. (with Don DeYoung)

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In addition, geologists have interpreted rocks and fossils as products of a uniformitarian world, and turned obvious evidence for the Flood on its head, all the while claiming the high ground of "science." It was claimed that "evidence" showed that there was no global Flood, and that geological features required millions of years to form, as the dictum "the present is the key to the past" echoed from academic halls into the public square. Links between assumptions and conclusions were obscured, and it became the "scientific" view to see all rocks and fossils as formed by present processes, such as erosion, volcanism, and sedimentation. It mattered little that sweeping deductions were made when very little was known — in fact, many early naturalists argued that basalt was a sedimentary rock (Mortenson, 2004)!

Early geologists used three geological features in particular to persuade their peers of the reality of uniformitarianism and deep time: 1) volcanic deposits, 2) valleys, and 3) thick sedimentary rocks. In his history of the development of geology, Martin Rudwick (2005, pp. 119–121) stated how early geologists used volcanic deposits to stretch time:

> Volcanoes provided some of the best evidence for such natural rates, and the most intensely discussed. … The implication was clear. If the volcano [Etna in Italy] had been built up by a succession of eruptions similar to those recorded through the centuries of human history, its total age must be vast beyond comprehension.

Rudwick (2005, p. 122) also explained how river valleys were used in the same manner: "River valleys were a second feature that was likewise invoked as evidence to suggest that the traditional short timescale [from the Bible] was inadequate." Finally, Rudwick (2005, p. 123) mentioned perhaps the strongest evidence against Noah's Flood in geology: "Much more persuasive was a third class of evidence: the huge pile of Secondary strata [most sedimentary rocks] that were being described in certain parts of Europe."

What is essential to note is the circularity of assuming uniformitarianism, and then "proving" that the resulting low-energy processes demonstrate vast ages. Evidence was just window dressing. With regard to volcanics, valleys, and strata, all of these early evidences are better explained by biblical history and its Flood, as we will show in the next article of this series.

Geology is the foundation of evolution

Despite uniformitarianism's being attributed to Hutton and Lyell, the concept and its role in distorting Western worldviews predated both (Rudwick, 2005). As atheists built a worldview without God, it became clear that they needed an explanation for the variety of life. Evolution was an old idea that could be adapted to this new reality. So, when the need for a scientific biohistory became evident, Darwin was able to piggyback onto Lyell's uniformitarian methodology:

> …it was Lyell's eloquent work that molded Darwin's outlook most profoundly. … Darwin returned from the voyage of the *Beagle* a keen geologist and a convinced Lyellian (Rudwick, 2008, pp. 487, 498).

Although Darwin's only degree was in theology, he discovered uniformitarianism in the early 1830s on his voyage aboard the *Beagle,* when reading Lyell's *Principles of Geology*. It revolutionized his thinking and inspired him to study geology. This relationship between Darwin and Lyell would permeate the future of biology, solidly linking evolutionary biology to uniformitarian geology.

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FIGURE 2. *The parallel roads of Glen Roy, Scottish highlands, outlined by a recent snowfall, 10 March 2009, © Richard Crowest. commons.wikimedia.org/wiki/File:Parallel_Roads.JPG*

Darwin practiced this scientific history first in geology, publishing his first geologic paper on the "parallel roads" of Glen Roy (Rudwick, 2008, pp. 493–499). These are three remarkably horizontal erosion features or terraces etched high onto the sides of the Glen Roy valley in the Scottish Highlands (Figure 2). They were called "roads" because they were thought to be man-made by early inhabitants. Darwin had observed elevated marine terraces in Chile, uplifted by earthquakes. He applied uniformitarianism to "explain" that these terraces indicated that Scotland had once been submerged and had been raised over long ages by at least 400 meters. His commitment to his uniformitarian conclusion was so great that he indulged in the very unscientific method of explaining away contrary evidence, such as the lack of marine shells, and shorelines that ended abruptly. He published this information just before geologists understood that the elevated terraces were formed from ponded lakes during glaciation. Darwin's first foray into geology was simply wrong.

Yet the power of uniformitarian logic, which enabled a scientific history, remained with him. He turned his attention to biology, explaining the origin of the living world using the lens of slow, gradual changes occurring over long periods of time. In that manner, geology paved the way for Darwin and for what is widely believed in western culture today, viz., evolution:

> In any event the historicization of the earth, in what became the science of geology, was soon extended to other parts of the natural world, above all in Darwin's conception of the historical character of living organisms [evolution] (Rudwick, 2005, p. 7).

Science is not neutral…neither is history

Anti-Christian intellectuals have long conflated the *limited objectivity* of science with *philosophical neutrality*. This was a "heads-I-win-tails-you-lose" strategy that unfortunately worked for secularism for a long time. For example, Lyell's three-volume book, *Principles of Geology*, on which Darwin relied, was a clever polemic against the Flood, meant to undercut the Bible. Later in life, Lyell would admit it (Mortenson, 2006, p. 17–18). In other words, Lyell was a lawyer with an agenda. He used all his powers of persuasion to demolish Noah's Flood as the agency responsible

for the rocks and fossils (Mortenson, 2004). He did so, not by superior arguments, but by a "scientific" perspective on history that provided the excuse people wanted, to abandon God's revelation. In retrospect, Lyell is an object lesson in the power of the psychology of Romans 1.

It is even obvious to some non-Christians. Famous evolutionist Steven J. Gould wrote that, as with Hutton, much mythology surrounds Lyell: "Lyell was not the white knight of truth and fieldwork, but a purveyor of a fascinating and particular theory rooted in the steady state of time's cycle" (Gould, 1987, p. 115).

Unfortunately, Christian scholars proved undiscerning, having become accustomed to Christian intellectuals who had correctly used science. They were not ready for a wolf in sheep's clothing, and tended to believe those who called themselves "scientists."

> Those who were religious believers assumed that Nature, "the book of God's works," could not ultimately contradict Scripture, "the book of God's world," so if the natural evidence seemed sound and persuasive, they simply inferred that the short timescale [from the Bible], in its application *to the age of the world*, must be based on mistaken assumptions (Rudwick, 2005, p. 116, emphasis his).

Is it any wonder that many Christians today exhibit the same errors?

Another geological challenge: hundreds of slow processes?

Since the 18th century, hundreds of geological processes, interpreted as requiring millions of years, have accumulated in the public mind. Everything, from the formation of coal to the accumulation of sedimentary rocks, is thought to require vast amounts of time. Both creationists and secular geologists have documented contrary evidence of slow processes, but the inertia of uniformitarianism inoculates most people to their significance, reinforcing deep time and a bias against Scripture.

The "evidences" of uniformitarianism and deep time can be difficult to dislodge, because doing so often requires extensive fieldwork. At this point, only a few creation scientists have the time, money, or training to do it. In spite of these constraints, we have come far in only 60 years. As more workers wade in, more credible answers to the geological challenges which secular scientists have presented will be uncovered.

It is a worldview issue

The importance of geology is wrapped up in the importance of history. Secularists have wrested it (history) from Christianity using geology. Christians must reclaim it. Part of this will be the philosophical task of clarifying the difference between geology, as an explanatory science of present phenomena, and geology as a speculative historical narrative. Uniformitarianism is not a cure-all — it cannot even be precisely defined (Reed, 2010; Reed and Oard, 2017)!

No observation of events in the past is possible in the secular worldview, and forensic evidence provides limited and equivocal data, since the same evidence is used to explain a global flood and its contrary view of deep time. Either explanation depends upon one's *beliefs* about the past.

And yet, evolution saturates the culture. Because this is universally taught as fact from kindergarten to college, a majority of Christian young people come to accept it, and in search of consistency, reject Christianity (Ham et al., 2009). This is one of the reasons why geology is important to creationism.

When we see geology through the "glasses" of the Flood, answers fall into place and many mysteries are solved. The Flood was the initial target of secularism in the 18th century. Perhaps that is all the reason we need to push a biblical alternative to today's natural history.

Let us recommend a few books that will give you a good idea of what has been learned so far about geology from the creation science point of view. A children's book on Flood geology for grades 3 and above (good for adults also) is *Exploring Geology with Mr. Hibb* (Oard et al., 2012). Another good book on Flood geology for grades 6 and up is John Morris' *The Geology Book* (Morris, 2000). For those who desire to understand how the big picture of geology fits with the Flood, see *How Noah's Flood Shaped Our Earth* (Oard and Reed, 2017). All knowledge is important, but Christians must take captive every thought for our King.

Acknowledgements

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Speaking of Science

from the Creation-Evolution Headlines

by David F. Coppedge

*Editor's note: These S.O.S. (Speaking of Science) items have been selected from "**Creation-Evolution Headlines**" by David F. Coppedge at http://crev.info and are used by permission. Unless otherwise noted, emphasis is added in all quotes. Content may be edited for style and length.*

Upsets Surprise Evolutionists

These announcements show that fossils have ways of contradicting evolutionary expectations.

Animals Don't Always Evolve Big It might have seemed intuitive to Darwinians that new animals should start small and evolve to get bigger over time, but a fossil mammal found in Alberta is shaking up expectations.[1]

> The discovery of a new species of mammal in Alberta's fossil record **has shaken up some long-held beliefs** about other species in its lineage.
>
> The ancient *Catopsalis kakwa* (*C. kakwa*) was only about the size of a squirrel, and weighed between 400 and 600 grams. What it lacks in size, however, it makes up for in terms of its **implications for previous research proposing the evolution of larger body mass** in multituberculates, rodent-like mammals named for their teeth that have many cusps, or tubercles, arranged in rows.

According to evolutionists, these mammals persisted for a long time in the fossil record. Since it came late in their timeline, shouldn't it be bigger and badder? It isn't. It's one of the smallest ever found. Not only that, the ghost of Darwin is haunting the evolutionary story:

> "Because the trend in these multituberculates seems to be getting bigger and bigger, **this thing is so unexpected** in that it's quite small and temporally it's quite late in the game," [Dr. Craig] Scott explains.
>
> *C. kakwa's* size—and the fact that it was alive in the late early Paleocene—complicates the evolutionary history of Taeniolabidoidea, and **implies either a ghost lineage or an evolutionary reversal of characteristics**, going from large to small body size. **A ghost lineage is when there is an extensive part of the evolutionary record of an animal that is not currently recognized in the fossil record**; in this case, the fossil history of the **mysterious** small-sized Catopsalis **has not yet been found.**

Early Bird Out of Place, Out of Time A fossil turaco dated at 52 million Darwin Years old, has been found in the Americas.[2] That's astonishing, because modern turacos, known by their bright plumate, head crests and penchant for fruit, are found only in African savannahs and forests today.

> A **beautifully preserved fossil bird** from 52 million years ago is shaking up the family tree of the exotic birds.
>
> The fossil's **weird features** suggests it is the **earliest known living relative** not just of the turacos, but of cuckoos and bustards (large long-legged birds).
>
> And the fact the remains were **unearthed in North America** shows the **distribution of different birds around the globe would have been very different in the past.**

Red Tide in the Desert? When discovering marine life far inland, like seashells on the world's highest mountains, evolutionists appeal to stories of long ages where continents rose and fell, and seas advanced and retreated over the land. This announcement about a red tide in Australia, though, is a little bizarre.[3] Evolutionists found fossil dinoflagellates, the small organisms responsible for red tide, in Queensland near the town of Roma, 250 miles from the coast. They date the fossils as Jurassic. They didn't think the sea inundated this area till the Cretaceous, 40 million years later. This means they have to adjust the evolution rate to repair their just-so story.

> "However, this new microfossil evidence from the same region **suggests** there was **a short-lived precursor to this sea 40 million years earlier.**"
>
> Dr Wainman believes these microfossils **must have been brought inland** by an incursion of sea water **and then evolved quickly to adapt** to the freshwater or brackish conditions as the sea waters slowly receded.
>
> **"There is no other feasible explanation for how they managed to reach the interior of the Australian continent when the ancient coastline was thousands of kilometres away,"** Dr Wainman says.

Of course there is another feasible explanation: a global flood, as presented by creation geologists and paleontologists. That idea, though, is ruled out by fiat in the current evolutionary dynasty.

Monkey Shines onto Stone Age Colin Barras waves a magic wand of chance to explain why certain monkeys use rocks to smash nuts:[4]

> Another non-human primate has entered the Stone Age – the fourth type known to have done so. A population of white-faced capuchins living on a Panamanian island routinely use stones to smash open nuts and shellfish. Other nearby populations don't use stone tools, **which might suggest** that primates – **perhaps including our ancestors – stumble into the Stone Age by chance.**

This nutty explanation implies that human ancestors were too stupid for millions of years to figure out how to hold a rock in their hands to open a nut. The assumption of millions of years by evolutionists, though, applies to capuchin monkeys as well. Why now? If monkeys have been around longer than humans, why did some just figure out this simple behavior? Barras speculates that the lack of predators on the island makes it worthwhile for monkeys to experiment. No; that idea gets tossed immediately by Brendan Barrett of the Max Planck Institute, who immediately replaces it with another just-so story:

> **But that doesn't explain why** capuchins elsewhere on JicaroÓn, **which also experience those conditions, don't seem to use stone tools.**
>
> **Perhaps it takes a single hyper-intelligent individual to make the leap and begin** using stone tools, **with others then copying** the idea. **"Good innovations are pretty rare, but if they are adaptive they can take off,"** says Barrett.

According to neo-Darwinism theory, that lucky individual had to have had a mutation in its germ line that produced hyper-intelligence. One day, SuperBrain Capuchin realized that striking a nut with a rock made it easier to eat. Then its stupid monkey mates just copied its behavior. This explanation, though, is Lamarckian, because the stupid monkeys lacked the hyper-intelligence gene to be able to pass on the behavior, and should have reverted

out of the Stone Age shortly thereafter.

The story is also implausible because monkeys move around. During the assumed millions of years capuchins lived on JicaroÓn island, is it credible that the others never saw or learned this time-saving trick? Long ages work against this story, because surely millions of years is plenty of time for all monkeys everywhere to learn how to crack nuts with rocks. Without the required millions of years, the conundrum vanishes.

Darwin skeptics have no trouble believing that animals were endowed with intelligence necessary to learn, the migratory ability to explore new habitats, and the epigenetic programming to adapt within limits to shifting environments. Creationists add that God endowed them with these abilities not that long ago. Darwinians keep getting shook up by upsets because they deny intelligence as a cause, and insist on keeping their beloved millions of years.

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"It Evolved" Is Not an Explanation

A Darwinian can stare at evidence for intelligent design all day and conclude, without batting an eye, "evolution did it." A favorite attack by atheists is to accuse creationists of giving up on science, and just saying, "God did it." That attack cuts both ways. Saying "It evolved" gives up on science even more, as the following news items demonstrate.

Look at these examples.

Off/on switch for DNA repair protein [1] DNA repair is a complex operation involving numerous sophisticated proteins and processes that must work together. The assertion occurs in the very first sentence in this article:

> Damage to DNA is a daily occurrence but one that human cells **have evolved to manage.**

It's equivalent to saying that power line repairmen or fire departments appeared by random, blind processes. A repair operation needs to recognize a fault and have the tools and instructions to fix it. If an atheist were to be offended by the explanation, "God did it," would the answer "Chance did it" represent an improvement? We know that intelligence can create repair systems. Where has chance ever done that?

Competitive team sports shaped the physical and psychological skills of early humans [2] Another science dilly comes from the University of Oregon, where Darwinists tell a quite typical just-so story:

> Competitive team games in which men test their mettle against others are universal across the world, and **may have deep roots in our evolutionary past.** Among hunter-gatherers, these games enable men to hone their physical skills and stamina, assess the commitment of their team members, and see how each performs under pressure. All these activities suggest motivation to practise [sic] skills involved in lethal raiding, says Michelle Scalise Sugiyama of the University of Oregon in the US, lead author of a study in Springer's journal *Human Nature.*
>
> **Play behavior in humans and other animals is thought to have evolved** as a way to **develop, rehearse, and refine skills that are critical for survival or reproduction.** Chase games, for instance, build **stamina and speed**, which is **helpful** for evading predators. Similarly, **play fighting is believed to** develop skills used in actual fighting. Although many animals play fight, **only people do so in teams.** The study's findings suggest that team play fighting is not a recent invention of agricultural societies.

This may sound plausible until you think about it. All kinds of questions present themselves. Why did games enable men to hone their skills? What about women's sports? Why are people different from all other animals? Why didn't human ancestors just climb higher in the trees or go deeper in caves? Did the NFL and NBA evolve by natural selection? If that is the explanation, what gene mutated in a pre-sport ancestor? Are sportsmen the only ones who pass on their genes? Perceptive readers will notice the reporter's use of statements like "is thought to have evolved" and "is believed to develop skills."

Glia and axons: A match made in evolution [3] If you want to learn about a cell type that defies evolution, consider the neuron. Lined with rapid-firing ion channels that convey electrical currents down its dendrites and axons, then converts them to chemical neurotransmitters across synapses using complicated packaging processes – and does this lightning fast (consider how quickly your brain learns you stubbed your toe). The neuron is a marvel of complexity superior to human technology. Plus, it grows from an information code in the genome, and can make copies of itself. And yet this article audaciously gives all the credit to Darwin, saying,

> The larger size of axons in adult lamprey compared to the larval stage may enable **rapid signal transmission**, suggesting that **myelin may have evolved** to achieve similarly fast neuronal communication in the much smaller axons of jawed vertebrates.

Understand that the evolutionists here are not just suggesting that myelin evolved as an improvement on a created design; to them, the whole shebang evolved from bottom up, just the way the cnidarian "evolved" a nervous system. As Lewontin remarked, they must not let a Divine foot in the door.

How evolution builds the most efficient airfoils [4] Chris Packham shows his true colors as a Darwin storyteller. Many can look to birds as marvels of design. Given the demands of overcoming gravity with powered flight, and considering all the systems that must contribute to that function, powered flight would seem to many to represent an all-or-nothing challenge to Darwinism. Enter the unfeigned faith of the evolutionist:

> Over **millions of years**, the morphology of these animals **evolved for maximally efficient cruising**…
>
> …the animals **selected as the fittest have evolved** to a **narrow range of highly efficient parameters.**

In fact, he points out, fish and birds have arrived at nearly the best trade-off between competing constraints. However, we see optimization theory as a branch of intelligent design science in action. Packham just throws up his hands and assumes, "It evolved."

Creation and evolution appear to be at a standoff: "God did it" vs "It evolved." But consider: creation has a cause – intelligence – that is well known to be necessary and sufficient for organizing material into complex systems. What does evolution have? Chance. That is the denial of causality.

But is creation a "science stopper," as evolutionists often allege? That argument cuts both ways, too: "It evolved" is a lazy way out of scientific explanation. Actually, belief in creation has a long history of stimulating excellent science. Creation scientists may in fact believe in God as Creator as a final cause, but are often eager to learn ***how*** things work, and ***how*** God did it. Do evolutionists give the same diligence to

... continued on p. 5

Quarterly Research Matters

Summaries of Cutting-edge Research from the Creation Research Society Quarterly*

Creation research that engages the current scientific literature and builds the creation model is crucial; CRS exists to support and publish such research. Only through high quality research can we equip others with strong, sound apologetics arguments that show the robustness of the creation model over that of evolution.

Baraminology: How can we use the ever-growing molecular data for creation research?

Molecules such as DNA, RNA, and proteins are essential for life. The sequence of these molecules determines their activity, and they differ between organisms. With newer sequencing methods, the amount of molecular data has grown exponentially. This information can be useful to ascertain relationships between organisms, as long as such inferences are based on reasonable assumptions.

Baraminology is a creationist discipline that recognizes that life was created in distinct groups, called kinds (baramins; cf. Genesis 1). While some initial work has been done to estimate which groups of animals, today, are descended from the various kinds, much more work needs to be done. Rapidly accumulating molecular data have the potential to help address this issue.

In the Summer 2017 issue of the *Creation Research Society Quarterly* (*CRSQ*), Jean O'Micks describes a new creationist method being developed as part of the eKINDS project. This method groups organisms based on protein similarity. The methodology, along with its assumptions and limitations, are discussed. While further work will be necessary to hone the method, it appears to be a promising tool for future creation biology research.

O' Micks, J. 2017. Baraminology classification based on gene content similarity measurements. *Creation Research Society Quarterly* 54(1): 27–37.

Post-Flood migration: How did tortoises get from Ararat to the Americas?

A robust creation model should be able to account for the migration of animals from the Ark to various locations around the world where we see them today. Creationists have proposed that a land bridge existed through Beringia, during the Ice Age, that would allow migration into North America. The land bridge was the result of lower sea levels, which resulted from the ice accumulation on the continents.

Opponents of young earth creation have claimed that animals that are slow, delicate, and unable to withstand the cold would be unable to use such a land bridge, given its latitude. In the Summer 2017 issue of the *CRSQ*, Timothy McCollister tackles this topic as it relates to tortoises. As it turns out, Oard's Ice Age model would result in coastal isotherms, where the warm ocean waters would keep the coastal areas warmer than inland regions.

McCollister examines the thermal needs of tortoises, for both life and reproduction. He also estimates the length of time the coastal isotherms would have maintained this temperature. He further estimates how far the tortoises must have traveled daily to make it to the Americas. When all the details are considered, it is evident that even more temperature sensitive ectotherms, like tortoises, could plausibly have migrated to the New World via Beringia.

McCollister, T.L. 2017. Post-Flood migration of ectothermic tortoises to the Americas: A terrestrial route. *Creation Research Society Quarterly* 54(1): 38–47.

Continued creation research is made possible by the generous gifts (time, money, and prayers) of our many supporters.
Thanks to all who have contributed!

*Summaries compiled by J. Lightner.

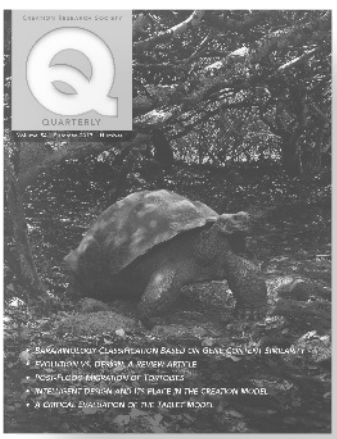
Intelligent design: What is it, and can it help us build the creation model?

Some creationists are enthusiastic about intelligent design (ID); others are critical of it. In the Summer 2017 issue of the *CRSQ*, Jon Bartlett helps us better understand what ID is (and is not) as well as how basic concepts derived from ID can be useful in building a biblical creation model. While ID is not a theory of origins, it certainly impacts theories of origins.

ID is a general theory about intelligent causes. It involves developing theoretical models to understand the nature of intelligent causes, and allows us to understand and analyze intelligent causes. ID can be applied to a variety of subjects, including business, technology, and biology. It helps us identify where design is present, even though, by itself, it cannot identify who the intelligent agent is.

Bartlett reviews several areas of ID, including Specified Complexity, Active Information, and Relative Irreducible Complexity, using helpful examples to make the concepts accessible to the readers. He discusses some of his work applying these concepts in biology, and points out several specific ways ID can be applied to further develop a biblical creation model.

Bartlett, J. 2017. Intelligent design and its place in the creation model. *Creation Research Society Quarterly* 54(1): 48–56.



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All by Design

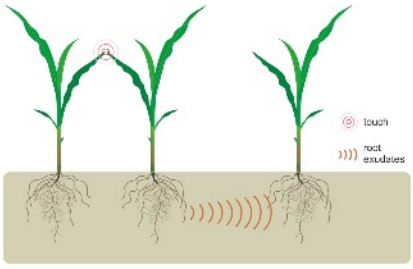
by Jonathan C. O'Quinn, D.P.M., M.S.

Move Over Clover

If one looks at the natural world with open-minded curiosity, it is possible to appreciate that Life is far more complex and wonderful than we might have imagined. Let us take yet another look at plant communication.

Researchers have discovered that plants have several ways of communicating messages to each other, as we have seen in recent articles in this series. A study reported in *PLoS ONE* demonstrated that plants have the ability to communicate with each other regarding spacing, and that they will modify their growth to provide more space to other plants when needed.

The scientists grew maize plants and simulated crowded conditions by touching some of them with a makeup brush. The hydroponic solution in which the touched plants were grown was used to monitor chemical signals which may have been released by their roots. Seeds planted in this solution responded by growing fewer roots and more leaves, a phenomenon that, in the wild, would lead to less crowding of roots and improved nutrient uptake by nearby plants. The same researchers found that if an untouched plant was exposed from different directions to both the growth solution from touched plants and fresh growth solution, its roots would grow away from the "touched" growth solution and toward fresh solution, in an apparent effort to avoid overcrowding.



"Graphical illustration of above ground interactions between neighboring plants by light touch and their effect on below ground communication." (From Elhakeem et al., 2018, used herein according to the CC BY license.)

Though the mechanisms are beyond the scope of this brief article, it is clear that above-ground stimuli lead plants to communicate messages below ground to other plants, helping them avoid competition for space and resources.

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