

Creation Matters



Volume 22 Number 4
July / August 2017

A publication of the Creation Research Society

CALL FOR RESEARCH PROPOSALS IN FLOOD GEOLOGY

The Creation Research Society is issuing a call for research proposals in Flood Geology. Grants will be awarded in amounts of up to approximately \$5,000 until all designated funds are exhausted. The proposal application and budget forms can be downloaded from the CRS website (www.creationresearch.org), or can be requested from the Society at crsvarc@crsvarc.com. The CRS expects all funded individuals to submit their results in formal manuscripts to the *CRSQ* within one year of completion of the projects.

The following topics will be given highest priority:

- A. Flood hydrology, which could include the potential sources of Flood water, the effects of water on sedimentation, and other hydrogeological and/or hydrothermal effects.
- B. Depositional studies of massive fossil beds, rapid cementation, and rapid fossilization (including taphonomy studies) at rates not observed in the present.
- C. Post-Flood catastrophism, which could include effects of the Ice Age, studies of landslides and geologic instability, and erosion during and immediately after Flood drainage.
- D. Climate change during the Flood, and models of atmospheric changes that may have occurred from the pre-Flood world to the post-Flood world.
- E. Asteroid/meteorite activity as part of the events associated with the Flood and any possible connection to the cause of the Flood.
- F. Studies of Flood tectonics and structural geology, including crustal and mantle research, and causes of basement uplift, subsidence, and thin-skinned tectonism.

**This call for research proposals will expire on
December 31, 2017.**



Math Matters

by
Don DeYoung, PhD

Thoughts on Half-life

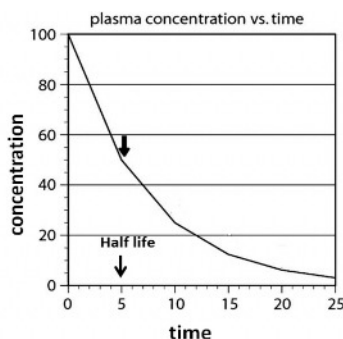
Half-life, a key concept for radioactive materials, was first discussed by Ernest Rutherford (1871–1937) in 1907. It can be defined as the time interval during which half of a large number of radioactive atoms, called radioisotopes, disintegrates or decays. Thus, for 1000 atoms and a half-life time represented by an arrow, the remaining amount at the end of each interval decreases as $1000 \rightarrow 500 \rightarrow 250 \rightarrow 125 \rightarrow 62-63$... Note that one cannot have a partial atom; half-life is a statistical concept which applies to a large number of atoms.

Half-life values occur for any group of objects (e.g., atoms) which have an equal probability of undergoing spontaneous change. In such cases, the number changing per unit time, dN/dt , is proportional to the total number of remaining objects, N . That is, the more objects you have, the more that will change in an interval of time. A particular radioisotope has identical atoms, as far as we know, yet some last much longer than others. Radioisotope half-lives vary widely, from nanoseconds to billions of years de-

pending on the stability of the nucleus. As an example, the isotope Carbon-14 decays to stable Nitrogen-14 with a half-life of 5,730 years.

The change just described is called geometric or exponential in nature. It is not limited to exponential decay, but also includes growth. As an example, an initial principle amount of dollars deposited with an annual compound interest rate of 7.2 percent will double in ten years. This is called the “Rule of 72,” an exponential growth topic for another time.

As a further example of half-life, consider a large building with many thousands of light bulbs. If one keeps track of their failure without replacing the burned out bulbs, a half-life number will result for the lifetime of bulbs, perhaps 2–3 years. As with radioisotopes, some bulbs simply last longer than others. Medical drugs also have metabolic half-lives during which time their concentrations in our bodies, and thus their usefulness or activity, decline by one half. The half-life interval is one of the factors



used to determine the effective dosing interval for a drug.

Half-lives and doubling times occur all around us, from radioactive materials to the increase in world population. The half-life concept is a mathematics tool, given to us by the Creator, which helps us understand our world and its changing components.

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Creation Matters

ISSN 1094-6632
Volume 22, Number 4
July / August 2017

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Chambers Published First Modern Book on Evolution

by Jerry Bergman, PhD

Robert Chambers (July 1802 – March 1871) was a leading Scottish geologist, evolutionary pioneer, author, and journal editor. He was very influential in mid-19th century scientific and political circles, mostly as the anonymous author of *Vestiges of the Natural History of Creation*, a book published in 1844 that aggressively argued for evolution. This book was “more controversial than any other philosophical or scientific work of its time” (Secord, 2000, p. 1). The authorship of *Vestiges* was openly acknowledged only in 1884, in the 12th edition which was published thirteen years after Chambers’ death. Chambers was the cofounder of what became the largest publishing house in Britain (Secord, 2000, p. 21).

Robert Chambers and his brother William were both born with six fingers on each hand, and six toes on each foot. Their parents attempted to have this abnormality surgically corrected and, although William’s surgery was successful, Robert was left partially lame. One result was that, while his friends played sports outside, Robert stayed indoors and elected to read books to keep himself occupied (Chambers and Chambers, 2015).

During the 1830s, Robert Chambers took a deep interest in the rapidly expanding field of geology. In 1844, his achievements in this area were acknowledged when he was elected a fellow of the Geological Society of London. William later recalled that his brother’s “mind had become occupied with speculative theories which brought him into communication with ...[leading] thinkers on physiology and mental philosophy.” While living in Edinburgh in the 1830s, in an effort to explain the functioning of the brain by purely natural means, Chambers became an enthusiastic phrenologist. He was looking for a naturalistic explanation, not only of the mind, but also for the origin of life. This motivation influenced the writing and publication of his now-famous book.

His book was influenced by both his geological studies and an interest in speculative theories. *Vestiges of the Natural History of Creation* was written when he was dealing with depression. It was dedicated to his wife, Anne Kirkwood. Although literary anonymity was not uncommon at the time, especially in periodical journalism, science anonymity was rare because science writers typically desired to receive credit for their work so as to claim priority for their original ideas and discoveries. The reason for Chambers’ anonymity was likely because his book was arguing for a

non-theistic developmental view of the cosmos. The book proposed a thorough-going evolutionary narrative that speculated that all of the planets originated in a blazing fire-mist (Secord, 2000, p. 1), and that the solar system evolved from

...a swirling cloud of gas out of which the sun and the planets congealed—the so-called nebular hypothesis. Life arose spontaneously on the earth and evolved steadily into the diversity we see today. Humankind was simply the endpoint of these purely natural processes (Giberson, 2016, p. 122).

The *Vestiges* book was written to disprove the prevailing natural theology view of William Paley. It claimed that all of

...the wonders of nature arose naturally and not through the “wisdom of God.” God, for the anonymous author of *Vestiges*, did nothing more than endow the material world with a progressive spirit of the sort animating Victorian social reformers—who, not coincidentally, loved the book (Giberson, 2016, pp. 122–123).

It argued that everything had developed from earlier, simpler forms, including the solar system, the Earth, fish, plants, amphibians, reptiles, birds, mammals, and ultimately man, and even rocks, and corals. *Vestiges* became an international bestseller and had a powerful influence on the public, and even on many scientists. Chambers’ book was actually “wildly popular and outsold Darwin’s *Origin of Species* into the twentieth century” (Giberson, 2016, p. 122). It also led the way for Charles Darwin’s 1859 publication, the *Origin of Species*. It was so influential that Alfred Wallace, the co-discoverer with Darwin of the major mechanism for the modern theory of evolution, acknowledged that it “inspired his work, calling it an ‘ingenious hypothesis’ awaiting support from more facts and the additional light which more research may throw upon the problem.” The author of the most authoritative account on the *Vestiges* event wrote that “in many ways, Darwin had been scooped” because *Vestiges* advocated a naturalistic origin for all living species (Secord, 2000, p. 429).

Opposition

The contemporary condemnation of the book by many highly qualified scientists was scathing (Giberson, 2016). For example, the occupant of the Geology Chair at Cambridge University, Adam Sedgwick (1785–1873),

opined in an eighty-five-page tome condemning the book, that he could find “no value” in this “foul book” (Giberson, 2016, p. 123).

“All other scientific men,” he claimed derisively, “are indignant” about it. “If the book be true,” he stated, speaking for most educated Americans in the emerging conversation about evolution, “the labors of sober induction are in vain; religion is a lie; human law is a mass of folly, and a base injustice; morality is moonshine” (Giberson, 2016, p. 123).

This review, published in the July 1845 edition of the *Edinburgh Review*, included numerous, very effective point-by-point refutations, most of which are still valid today. Sedgwick even documented the fact that the anonymous author of the book was openly anti-Christian, and was

...attempting to seduce his readers, writing with the “serpent coils of a false philosophy,” asking them to “stretch out their hands and pluck forbidden fruit.” This wily serpent, hiding behind the protective cloak of anonymity, “would have his readers believe their Bible is a fable when it teaches them that they were made in the image of God—that they are the children of apes and breeders of monsters—that he has annulled all distinction between physical and moral.” Few scientists were as colorful in their condemnations as Sedgwick, but virtually all of them shared his dim view of the science in *Vestiges* (Giberson, 2016, p. 123).

The critical review of *Vestiges* helped to confirm the theological views of American Christians who were, with good reason, very skeptical of the creative power of mindless processes. Nonetheless, Chambers had an enormous influence on many scientists, including Charles Darwin.

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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.

Solar Eclipses: Design or Coincidence?

This is a rebuttal to *Live Science's* article, "Why Total Solar Eclipses Are Total Coincidences," so that readers can make up their own minds.¹

Many Americans are planning their summer vacations around the total solar eclipse on August 21, the first one for Americans, visible from coast to coast, in 99 years. The line of totality crosses from Oregon to South Carolina, providing millions of Americans their first chance to see one of the grandest spectacles in nature. What is the significance of total eclipses that have fascinated humans for thousands of years?

At *Live Science*, Tom Metcalfe argues for the secular materialist view that total solar eclipses are purely coincidental. They may well be; nobody knows. However, there are aspects of the phenomenon that, considered within the context of other "coincidences" about our planet, deserve more careful reflection than outright dismissal as products of blind chance. Rather than just declare a position as fact and be done with it, as Metcalfe does, we give both sides. Go ahead; start by reading his article, then come back and read our rebuttal.

Metcalfe uses the word "coincidence" 9 times in his article, as if by repetition he will make his point. He also rests his case on the authority of experts he chooses to quote. Although not openly aimed at intelligent design advocates, Metcalfe's focus and repetition of the word "coincidence" seems targeted to nudge his readers away from any thoughts that our planet was designed for human life.

Metcalfe agrees that total solar eclipses are special in the sense of their emotional impact on humans. They are beautiful and awe-inspiring, he agrees. Quoting UK astronomer Mark Galloway, he makes this concession:

"It's a beautiful coincidence — life has been on Earth for about 400 million years, and we're living in this little window of time where this is happening, which is pretty amazing," Galloway told *Live Science*.

A look through the article shows five reasons for the coincidental view: (1) the match is not exact, wavering between annular and beyond-total coverage; (2) the match only existed for a brief time in the history of the earth; (3) the obliquity of the moon's orbit makes its shadow not touch the earth every time; (4) advances in science brought about by eclipse observations would have happened anyway, and eclipses are no longer important to science; (5) human psychology makes us think they are more significant

than they really are.

In the book² and film³ *The Privileged Planet*, astronomer Guillermo Gonzalez shares his experience watching his first total eclipse, and how it led him to question the view that it is purely coincidental (see the whole film on YouTube³). He decided to calculate all the shadows of all the planets and moons in the solar system to see if any other combination of bodies produces a perfect total eclipse. Beside Earth, he only found one: the moon Prometheus at Saturn. There are several problems with that eclipse, though: it would only last half a second, and Saturn has no solid platform from which to view it. The Cassini spacecraft found that Prometheus is potato-shaped, not circular, so not even it has perfect eclipses. Gonzalez commented about this "amazing coincidence: the one place that has observers is the one place that has the best eclipses."

That fact alone is not enough to rule out the coincidence view, but it started Gonzalez and his friend Jay Richards down a sequence of inquiries about Earth that showed it to be ideally located for making scientific discoveries. It orbits the right star, has the right atmosphere, is located in the right position in the galaxy, and much more. Some of these factors are detailed in the film, and more in the book. Evaluating the significance of eclipses, therefore, needs to be considered not in isolation, but in context of twenty or more other coincidences about our planet that vastly decrease the probability of their all occurring simultaneously on one planet. The combination of factors could well be unique in the universe, even with the vast number of stars astronomers count.

Added to the work of Gonzalez and Richards, the findings of Dr. Michael Denton should be considered in his videos *Privileged Species*⁴ and *Fire-Maker*.⁵ Denton lists additional coincidences that seem designed not just for simple life, but for human life. In combination, these factors make the "sheer coincidence" view highly suspect. Metcalfe should at least take these evidences seriously and not simply dismiss them by assertion.

What about Metcalfe's objections to design? Even if the match may not be perfect, it is often very exact. The fact that it is so precise as to allow us to see the chromosphere and Bailey's Beads is quite astonishing for a coincidence, even if it doesn't occur that precisely every time. As for its brief appearance in the history of the Earth, the point is that that time is now, in what Galloway admitted is a "little window of time... which is pretty amazing." As for the obliquity of the moon's orbit, the same rebuttal holds: the fact that exact total eclipses occur at all is the issue. How many lotteries does one have to win before conceding there's more going on than luck? The advances in science, furthermore, have been significant (such as the discovery of helium and confirmation of Einstein's theory of relativity), and continue to be significant to this day. Eclipses have also played a major role in helping historians date key events in ancient history. And for human psychology, well, great: we have the intelligence and emotions to enjoy these rare phenomena, and they only happen here. That's the point. They're not happening on Enceladus or Io where nobody lives.

In sum, it is not possible to disprove the coincidence view by considering solar eclipses in isolation, but when considered in



context with all the other “coincidences” that converge to make human life possible on this one planet, the intelligent position should be taken seriously. We think Metcalfe could have done a much better job for his readers by considering these arguments and not dismissing the design view by fiat. We take Darwin’s position (ironically): “A fair result can be obtained only by fully stating and balancing the facts and arguments on both sides of each question.” We challenge *Live Science* to do that.

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Dead Molecules Found Around Star!

Let’s tell the news the way it should be told: astronomers have found the building blocks of death in outer space.

Despite funding from NASA in the millions of dollars, the concocted science called ‘astrobiology’ (there’s no ‘bio’ in it) has not a single example of life beyond Earth. What excites astrobiologists is planets that *might* be habitable, and molecules that *might* contribute to life. The latest example may be found in *Astrobiology Magazine*’s headline,¹ “**Prebiotic Molecules Discovered on Accretion Disk of Baby Star.**” To keep the dream alive, they never say post-biotic or a-biotic, which would be depressing. Instead, they tempt with suggestive phrases like “building blocks of life” stated with emotion. This time, materialists in Taiwan take a turn titillating NASA’s *raison d’être*:

These **molecules** play a **crucial role in producing the rich organic chemistry** needed for life. The **discovery suggests** that the **building blocks of life** are produced in such disks at the very beginning of star formation and that they are **available** to be incorporated into planets that form in the disk subsequently. **It could help us understand how life came to be on Earth.**

“It is **so exciting** to discover complex organic molecules on an accretion disk around a baby star,” says Chin-Fei Lee at ASIAA.

Typical heap of happy hope hype for astrobiology. So what was found this time?

- **Methanol** (CH₃OH): This is wood alcohol, the simplest alcohol, just methane with one hydrogen replaced by hydroxide. It causes blindness and death in people who drink it.
- **Deuterated methanol** (CH₂DOH): Same thing, but with one hydrogen replaced by deuterium (heavy hydrogen, containing an extra neutron). Don’t drink this stuff, either. No living cells use it, so why is it called prebiotic?

- **Methanethiol** (CH₃SH): Similar to methanol except with sulfur instead of oxygen, this is “a colorless, flammable gas with an extremely strong and repulsive smell.” Metabolism of certain foods produces this molecule in small amounts but it gets expelled in flatulence and feces. Also known as methyl mercaptan, it is very toxic at high concentrations, affecting the central nervous system. In fact, humans can begin to smell it at one part per billion. A leak of the stuff killed four employees at a DuPont plant in Texas in 2014.
- **Formamide** (NH₂CHO): *Wikipedia* says, “Formamide is moderately irritating to the eyes, skin and mucous membranes. Inhalation of large amounts of formamide vapor may require medical attention. It is also a teratogen [carcinogen]. Formamide has been shown to exhibit hemotoxicity [liver poisoning] in animals and is considered hazardous by prolonged exposure through inhalation, oral intake and dermal absorption. Formamide should never be handled without proper safety attire including gloves and goggles.”²

One wonders why scientists don’t call these the “building blocks of death.” Astrobiologists hang their hope on the fact that intelligently-designed experiments in the lab can use these ingredients to build up more complex molecules that life does use, including amino acids and sugars. “These molecules have been **proposed** to be the precursors for producing biomolecules such as amino acids and sugars,” they say, without pointing out that along with the hopeful molecules, a multitude of toxins are also produced. As for the useful molecules, they never quite say how blind chance can get them all in the left-handed form.

Most people probably wouldn’t get excited about molecules that cause bad breath, passing smelly gas, blindness, and death, so astrobiologists need to do a little marketing as part of their job.

The team’s observations open up an **exciting possibility** of detecting complex organic molecules in disks around other baby stars through high-resolution and high-sensitivity imaging with ALMA, which provides strong constraints on theories of prebiotic chemistry in star and planet formation. In addition, the observations open up the **possibility** of detecting more complex organic molecules and biomolecules **that could shed light on the origin of life.**

But why stop at one level of complexity? Atoms are building blocks of life, too. The headline could have read, “Hydrogen Discovered at Baby Star” with stories of how hydrogen atoms become incorporated into water used by cells. Quarks are building blocks of life. Think of the headlines that could be told with quarks — “From quark to quack: how ducks emerged from starstuff.”

Contrariwise, one can get too high on the scale of complexity. Astrobiologists are not likely to say, “Proteins Discovered at Baby Star” or “Genes Found in Outer Space” — but why not? If life is so easy to make, and so ubiquitous, these complex molecules should arise naturally all the time. Realistic chemists know that complex molecules with those levels of specified complexity are ruled out by probability and by natural laws of chemistry, particularly if they are homochiral (single-handed) and possess func-

... continued on p. 8

Matters of Fact

by

Jean K. Lightner, DVM, MS

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 Does the transition from egg-laying to live birth in certain lizards provide compelling evidence for evolution?

A No. On the surface it might seem so, but a deeper look shows it is compelling evidence against (molecules-to-man) evolution.

Bringing forth the next generation

There are three species of lizards where some populations lay eggs, while other populations give birth to live young: the yellow-bellied three-toed skink (*Saiphos equalis*), the common (or viviparous) lizard (*Zooteca vivipara*), and Bougainville's skink (*Lerista bougainvillii*) (Van Dyke et al., 2014).

A transition from egg laying (oviparity) to live birth (viviparity) is no trivial matter, requiring dramatic changes in reproductive morphology and physiology. This includes the proper development of fetal membranes (amnion, chorion, allantois, and yolk sac) to enable gas and nutrient exchange between the mother and offspring. There also must be adhesion mechanisms which are adequate to retain the embryo in the mother's body, as well as embryonic-maternal communication (Van Dyke et al., 2014).

There have been over 1,000 studies documenting the anatomical, physiological (biochemical, endocrine), behavioral, and developmental specializations that are associated with viviparity. While a few people have suggested that live birth came first in squamates (lizards and reptiles), most believe that egg laying preceded the appearance of live birth. One argument supporting the latter view is that the mechanisms involved in egg-laying are fairly homogenous, but there is notable variation in the specializations involved in viviparity (Blackburn, 2015; see also Van Dyke et al., 2014 for differences related to gene expression).

There are over 100 squamate lineages where there appears to have been a transition

from oviparity to viviparity. Comparative analysis suggests that nearly all of these were associated with the invasion of cooler climates. The oviparous three-lined skink (*Bassiana duperreyi*) inhabits cooler areas of southeastern Australia. Researchers collected eggs from this species and incubated them at different temperatures that mimicked 1) natural nests, 2) maternal body temperature, and 3) eggs retained for two weeks and then laid (a life-cycle trait of some squamates). It was found that the thermal conditions applied to the eggs affected activity level, boldness, developmental rate, morphology, and locomotor ability of the skinks that hatched (Hong et al., 2017).

Evidence for evolution?

A few years ago it was claimed that lizards moving from laying eggs to live births were an example of evolution in action (Handwerk, 2010). Of course, if one defines evolution in terms of just change, then this, by definition, would qualify. However, the implication is that this change supports the evolutionary belief that all life descended from a "simple" common ancestor. This is not supported by the evidence.

When evolutionists attempt to explain the shift, they repeatedly appeal to exaptation and/or selection (Kalinka, 2015; Hong et al., 2017). Exaptation describes the co-opting of a previous trait for a new purpose. However, there is no explanation for *how* such a process may work. Naturalistic mechanisms (random mutation, natural selection, genetic drift) are not intelligent forces. How do the multifaceted anatomical and physiological specializations associated with viviparity occur, in a coordinated fashion, exactly at the right time and place?

Natural selection is not helpful either. It cannot create anything new; it can only select from what already exists. It is not uncommon for researchers to be able to document the advantages of a new adaptive trait. This might mean that natural selection played a role once the trait was present, but it contributes nothing to an understanding of how or why the trait came into existence.

If explaining the transition from oviparity to viviparity isn't bad enough, evolutionists need to account for its occurrence over 100 times in squamates alone. It would seem

that the transition is designed to take place under certain environmental circumstances, if it can occur that regularly.

The Bible provides a logical explanation

The fact that animals can change over time does nothing to distinguish biblical creation from evolution. The Bible records that God created life according to their kinds, intending them to reproduce and fill the earth (Genesis 1; Isaiah 45:18). Therefore, it is logical that God created them with the ability to adapt to new environmental conditions which they would encounter. They can adapt both physiologically and genetically (Lightner, 2017).

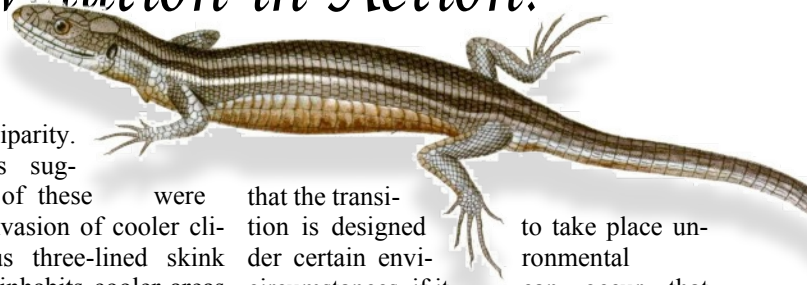
The biblical model is one of limited common ancestry; i.e. there is a limit to the changes that are possible. For example, one kind of creature cannot change into a fundamentally different kind of creature (e.g., a lizard into a bird). However, adaptation to new environments is expected, and is the result of the design God placed in them at their creation. The transition from oviparity to viviparity appears to fall into this category.

Do creationists need to account for this transition's happening over 100 times? That depends on whether the lineages inferred by the evolutionists are really lineages. The level of the created kind in squamates is usually estimated to be at about the family level (Hennigan, 2015). If there are differences in reproductive strategy within a family, then, yes, creationists need to account for it.

The two previously mentioned skink species, wherein the mode of reproduction differs between populations (*Saiphos equalis* and *Lerista bougainvillii*) are in the same family (Scincidae). Viviparity is also found in a number of other skink species in this family (Van Dyke et al., 2014). So creationists should be able to account for this.

It has been proposed that differences in reproductive strategy may have been part of the originally-created diversity (Doyle, 2011). This is certainly a reasonable hy-

Evolution in Action?



pothesis. However, several lines of evidence mitigate against this idea. First, this is a complex, adaptive trait that seems to be associated with the invasion of cooler climates. Thus, it seems more like an adaptation (similar to high altitude adaptations; cf. Lightner, 2017) which can appear as needed because the creature was marvelously designed.

Secondly, as mentioned previously, there is considerable variability in viviparity among skinks. This also is characteristic of adaptation to new environments and circumstances, where responses vary somewhat between individuals, and can vary depending on specifics of the circumstances. What remains to be elucidated is whether such adaptations are merely physiological, or if there are genetic changes involved as well.

Conclusion

Despite creative story telling, the evolutionary model cannot realistically account for

the adaptive traits necessary for an oviparous squamate to transition to viviparity. Adaptation does not occur by chance — it occurs by design, a wonderful testimony to the One who created life in the beginning.

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Image is the viviparous or common lizard *Zootoca vivipara*; from public domain (see https://commons.wikimedia.org/wiki/File:Zootoca_vivipara.jpg)

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Seated: Jerry Bergman, Michael Oard, Don DeYoung, Glen Wolfrom, Diane Anderson*, Jean Lightner, Danny Faulkner

*Professional staff

tionality for life. And because they are so tenuous outside of cells, they are not likely to survive in space for long. UV radiation, collisions, and interactions with other reactive molecules — including oxygen — will see to that.

Space.com took this life thing to ridiculous extremes, serving up its building blocks of life in a “space hamburger” with “giant bun and patty, if you will.”³ Suggestion: don’t eat this thing.

Blind chemistry is depressing. To keep the money flowing for astrobiology, its proponents offer trips to Fantasyland, where the soothing lines of ‘When You Wish Upon a Star’ put taxpayers into a trance as NASA lifts their wallets.

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Antibiotic Resistance Didn't Evolve; It Was Borrowed

A key ‘proof’ of evolution in action falls as scientists discover that pathogens don’t invent resistance genes; they share them.

It was common in creation-evolution debates in the 1980s to use antibiotic resistance as proof of evolution. ‘Evolution is as common as the disease germ that is resistant to antibiotics today but wasn’t last year,’ the argument went. Who would have thought that the very organisms that produce antibiotics also produce resistance genes to fight them? And who would have thought that they can share that pre-existing genetic information with disease germs?

A paper this month in *Nature Communications*¹ shares findings about **“Dissemination of antibiotic resistance genes from antibiotic producers to pathogens.”** They show how the genomes of Actinobacteria, that live in soil, include resistance genes against the antibiotics they create. This makes sense, because they don’t want to die of their own poison. But then, they found that other bacteria from other phyla and other organisms, *even from different kingdoms*, can obtain those secrets from the Actinobacteria. This kind of “horizontal gene transfer” is not evolution, because the genetic information already existed. It’s more like passing around prefabricated exploit code between hackers or, better yet, antivirus software from service suppliers. The scientists found resistance genes in the pathogens that in some cases were 100% identical to those in Actinobacteria. But how did they get them?

A press release from the Technical University of Denmark² explains how the information sharing works:

At first, **it was difficult to imagine how pathogens can acquire genes from Actinobacteria, because they are so**

different and not at all related with each other. But by investigating the DNA sequence around the resistance genes, the team figured out how the resistance genes transfer occurred through **a new mechanism named “carry back,”** where the pathogen basically has a primitive form of “sex” with the Actinobacterium and takes up its resistance genes after it dies.

This gene transfer by carry back **could in principle happen where pathogens come into contact with Actinobacteria, like in an animal farm or in soil** polluted with untreated hospital waste. In this way, the pathogen can become resistant and endanger human lives in the next round of infection.

Since the germs without the resistance genes die off, the only ones left are those that got the genes beforehand. But they didn’t ‘evolve’ that resistance—they borrowed it (or stole it).

For several decades, some scientists believed that horizontal gene transfer was responsible, but they didn’t have proof. Creation debaters, similarly, tried to argue that the resistance traits already existed and were accentuated by application of antibiotics. There was no ‘smoking gun’ till now. The authors say in their concluding discussion,

Proteobacteria [which include some pathogens] are well known to be **able to transfer DNA to organisms from other phyla and even other kingdoms by conjugation.** A recent study suggested that conjugation from proteobacteria to actinobacteria **might happen frequently in soil.** Thus, the ‘carry-back’ mechanism might have mediated the HGTs [horizontal gene transfers] from actinobacteria to proteobacteria in soil **using conjugative plasmids as the carrier sequence.** In modern times, likely caused by **increased selection pressure due to the extensive use of antibiotics, mobile genetic elements including conjugative plasmids, integrons and transposons** tend to be clustered together with ARGs [antibiotic resistance genes], **forming mobile multidrug-resistant units.** These units showed **extraordinary capability of spreading among commensals, pathogens and even environmental bacteria in water and soil.**

Now that resistance is becoming clear as a method of information sharing rather than Darwinian evolution, new questions arise that might better be addressed by intelligent design theory: is there a reason for this kind of information sharing? Could it be a designed mechanism gone awry? What other processes of information sharing previously attributed to Darwinian evolution do we not know about yet? And how could the new paradigm lead to better strategies against the ‘superbugs’ that are becoming resistant to our last-resort antibiotics?

One thing is clear: indiscriminate use of antibiotics is causing a crisis, and new approaches must be considered. Another clear lesson is that Darwinian evolution is not as clever as thought.

In the cemetery of fallen Darwinian arguments, we can erect a new headstone: “Here lies antibiotic resistance as proof of evolution.” The cemetery is getting pretty crowded. Like we say, if you hear a Darwin debater offering indisputable proof of evolution, just wait awhile. It will fall. Creationists will be ready with their shovels to bury it alongside so many other indisputable proofs of the past: Haeckel’s embryos, Piltdown Man, vestigial organs,



sexual selection, the horse series, human evolution—all the classic icons of evolution. Some are long dead; others are in their last dying gasps.

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Myth of Objective Science Busted

Students and citizens are taught a very distorted view of what science is and how it actually works.

Basic science is not an unbiased knowledge generator. Daniel Sarewitz pulls no punches in *Nature*¹: “**Kill the myth of the miracle machine,**” he shouts in his column that stabs one of science’s most treasured sacred cows: the value of “basic science.” The very, very few cases where undirected investigation has actually produced some worthwhile findings do not justify calls for non-targeted political funding, he argues, nor do the leftist attacks on funding cuts for basic research justify labels of a “war on science.” Science is not some kind of “miracle machine” where you turn a crank of scientific method and out pops knowledge. “Exceptional science is produced not by a miracle machine, but by institutions that **tie scientific curiosity to problem solving,**” he says. In fact, promoting the myth of the miracle machine can actually backfire.

Vast improvements in the scientific system could be had **if science agencies strengthened the ties that link research agendas to societal needs, and counteract the perverse incentives** that commit scientists to careers measured by publications and grant dollars rather than the creation of socially valuable knowledge.

Impact factor has been a counter-productive measure. Speaking of killing old myths, *Nature*² is also glad to read an obituary for the dubious measure of scientific value called “impact factor.” What was supposed to provide a “bibliometric” measure of scientific value actually did the opposite. “It should never have been used and has done great damage to science,” complains Richard J. Roberts. “Let us bury it once and for all.”

The impact factor is often used, improperly, to provide a mathematical measure of a scientist’s productivity, on the basis of where they published their results. It has **proved popular with bureaucrats,** and even with many researchers, because it **seems to offer an easy way to determine the value of a scientist’s output for someone who is either unable or too lazy to read that scientist’s papers and judge their true worth...**

Science is not supposed to be a money prize. The editors of *Nature*³ worry about perverse incentives at work in China, where the government rewards scientists too quickly with grants and bonuses for what they consider successful research. “Don’t pay prizes for published science,” they argue. “For one thing, it **creates a culture** in which scientists look at their research as a means to make quick cash.” It also “rewards science that is not yet proven.”

Like impact factor, metrics for what constitute successful research are often “greatly overblown.”

Scientists are not above data manipulation. We have asked previously, “If science is superior, why does it need fixing?” More evidence that scientists are like other fallible humans led *Nature*⁴ to complain about the problem of “image doctoring” in scientific papers – a problem that has mushroomed with the rise of digital manipulation tools like Photoshop. Publishers and editors do not always catch the digital trickery, and algorithms to detect image doctoring are not yet good enough. “By both human and technological means, research organizations, researchers and journals **need to do more to counter the image-manipulation challenge.**” But wait—weren’t we all taught the myth of the unbiased scientist seeking only truth for its own sake?

Models do not always catch important details. Mathematical models, frequently used in science, try to simplify reality by focusing on pertinent details. But which details are pertinent? Researchers decided to check a popular “quarter vehicle” model used by auto manufacturers to gauge ride dynamics. They added in other factors omitted by the model and compared the results. They found that omitted details do make a big difference. Their paper in *PLoS One*⁵ says,

The results clearly indicated that **these details do have effect** on simulated vehicle response, but to various extents. In particular, road input detail and suspension damping detail have the **most significance** and are worth being added to quarter vehicle model, as **the inclusion of these details changed the response quite fundamentally.** Overall, when it comes to lumped-mass vehicle modeling, it is reasonable to say that **model accuracy depends not just on the number of degrees of freedom employed, but also on the contributions from various modeling details.**

What other models in science, for the sake of convenience and simplicity, are failing to consider significant details that could fundamentally change the conclusions? The more complex the problem, such as with global climate, the more it seems the simplicity is the enemy of accuracy – especially when conclusions are not readily testable as they were in this case.

Bad definitions of science prevent scientists from finding truth. In a recent issue the editors of *Nature*⁶ tried to be nice to Catholics, only to be shouted down by a reader, who repeated the myth of scientism in a subsequent issue of *Nature*.⁷ According to Frank W. Nicholas, the editors forgot to be naturalistic enough:

Your Editorial suggests that Pope Francis’s meeting with patients and researchers is evidence of “a new openness [of religion] towards science,” in the spirit of his 2015 encyclical *Laudato si’* (*Nature* 545, 265–266; 2017). This is tempered by your view that the encyclical nevertheless illustrates “a

... continued on p. 10

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.

Estimating Dates: Assumptions and Inconsistencies

As scientists attempt to answer questions that are not amenable to direct observation, models are built. All models involve assumptions, and it is important to recognize them. In the Fall 2016 issue of the *Creation Research Society Quarterly* (CRSQ), Reed and Oard examine the history of Cyclostratigraphy, a secular method for dating rocks. Along the way they discuss the assumptions involved and the inconsistencies that have been encountered.

This historical analysis not only shows the problems with secular methods that assume deep time, but it is a good reminder of the limitations of models in general. This does not mean that models are not important; on the contrary, they are a critical component of scientific research. However, when working within a model it is always important to recognize what assumptions are being made, and to consider alternatives to how the evidence might be interpreted.

Reed, J.K. and M. J. Oard. 2016. *Cyclostratigraphy part II: History of the method.* CRSQ 53:103–109.

Microbes and Creation

Archaea are microorganisms that are distinctive enough to warrant classification as a third domain of life, separate from bacteria as well as eukaryotes. Evolutionists are divided in their attempts to understand the origin of archaea within their model of universal common ancestry. In the Fall CRSQ, Yaugh (2016) examines this

group using a newly developed molecular biology baraminology tool.

When the gene contents of various archaeal species are compared, these organisms naturally cluster in groups according to their metabolic specialty (sulfur-reducing, salt-loving, heat-loving, methane-producing). Clustering suggests a different origin for the different groups. While the Bible does not specifically mention the creation of microbes, the evidence is consistent with God's creating different kinds of archaeal species for various specialized niches.

Yaugh, A. 2016. Baraminological analysis of a set of Archaea species based on genomic data. *CRSQ* 53:140–154.

*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.

Speaking of Science ...continued from page 9

chasm between religion and science that cannot be bridged”.

In my view, the encyclical's most fruitful comment on science and religion is that they have “**distinctive approaches to understanding reality**”.... **The essence of this distinctiveness is that the modern scientific approach never invokes God as an explanation for any phenomenon. This restatement of ‘methodological naturalism’ is not science being anti-God: it is science being science.** All scientists adhere to this approach, including scientists who believe in God. In the religious approach, by contrast, God is at the heart of phenomena.

It follows that the fundamental distinction between science and religion has nothing to do with the question of whether or not God exists.

These insights can inform the debate around what should and should not be taught in science classes on, for example, evolution. In shedding light on the nature of the “chasm” between science and religion, these insights can also inform the new openness to which you refer.

It seems lost on Nicholas that methodological naturalism of this sort is guaranteed to come to wrong conclusions if God does exist and was involved. For instance, if God did create life, all the efforts and funds to find a natural origin are doomed to failure. If evolution is false, then all the published papers about natural selection's creating man from molecules are also false. By excluding intelligent causes, would Nicholas insist on a natural explanation for Stonehenge? Would he insist on unguided natural causes as the only tools to explain his own righteous indignation? If so, his arguments would implode.

Nicholas bought into the NOMA myth of Stephen J. Gould without apparently being aware of its weaknesses. His letter illustrates the unchallenged assumption of a particular philosophy in scientific institutions — methodological naturalism — which, as intelligent design advocates have frequently argued, becomes indistinguishable in practice from philosophical naturalism. Causation is a long-standing debate where the extreme positions obfuscate the productive middle ground. Surely no theistic scientist is going to attribute the precipitation of chemicals in a flask to the direct intervention of God. But neither should an atheistic science rule out convincing evidence for intelligent causes just to maintain

his materialist philosophy. That could guarantee a false conclusion.

The list above reports only some of the most recent debunkings of the myth of scientism from secular sources themselves. Big Science is a political force that once in a while discovers interesting facts about nature, just like Big Education is a political force that once in a while teaches something valuable to a student, or like Big Labor is a political force that once in a while helps a worker. The real contributions usually come not from the top, but from the individuals who, through their own integrity and moral character, decide to help their fellow man.

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this will be
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*Creation Matters***
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eKINDS

Examination of Kinds In Natural Diversification and Speciation

The Creation Research Society is pleased to announce a new research initiative—eKINDS.

How did we get the wide variety of today's species from a small number of animals preserved on the Ark? How do new species form, and how does this fit within biblical creation? Can we trace the spread of the created kinds from the Ark to where they live today? These and similar questions will be addressed by the **eKINDS** initiative.

The Society is seeking donors willing to help fund this initiative. For more information on how you can help, please contact the Creation Research Society at (928) 636-1153 or crsvarc@crsvarc.com.



All by Design

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

The Bible speaks of a planned creation of living things according to kinds. While the sex of mammals is determined by sex chromosomes at the time of egg fertilization, the sex of alligators, like many reptiles, is determined by the temperature of the eggs after fertilization. It is key to the survival of the species to have enough males and females born from each clutch of eggs.

When a female alligator is ready to lay her eggs, she makes a large nest of mud and vegetation, several feet tall and 5–7 feet wide. After laying the eggs in the top center portion of the nest, she then covers the eggs with additional vegetation and stays close by to guard the nest during incubation. At incubation temperatures below 86°F, all the alligators will be female. Above 93°F, every egg gives rise to a male. At temperatures from 86–93°F, there will be a roughly equal mixture of both sexes. Here is the beauty and wisdom of it—the mud and vegetation in the nest not only protects the eggs from large temperature fluctuations, but the de-



An alligator nest at NASA's Kennedy Space Center in Florida. Public Domain.

caying vegetation harbors bacteria, which produce heat as a byproduct of the decay process, maintaining the temperature of the eggs 3–4°F warmer than that outside the nest.

Who provided the alligators with the knowledge about how to construct the nests? Trial and error would have long ago made alligators extinct, indicating that the practice was in place from the beginning.

Alligator Incubators

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Photo source:

https://commons.wikimedia.org/wiki/File:NASA_Kennedy_Wildlife_-_Alligator_Nest.jpg

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