Creation Matters

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Darwinism Is an Ancient Religious Idea

by Jerry Bergman, PhD

A common, but erroneous, conclusion is that the basic idea of biological evolution was conceived by Charles Darwin as a secular, non-theistic solution to the problem of origins (Bowden, 1982, p. 1). It is also frequently implied by Darwinists that the theory of biological macroevolution is a modern idea that could have developed *only* in our advanced scientific age. Conversely, critics often claim that the creation worldview is a product of our less informed ancestors, and that such a belief system is now a disproven religious relic.

Actually, organic evolution is a very ancient idea that was first taught at least as early as the seventh century B.C., perhaps much earlier. As Morris (1997, p. 364) concluded "evolution is not in any way a modern 'scientific' discovery, but rather a modern revival of the primeval anti-God world religion."

Mayans and Native Americans

The Mayan culture, which began about 600 B.C., developed a streamlined evolutionary view that taught that the rain-god created humans by both adding to, and in other ways modifying, his previous creations. This rain-god first made rivers, then fish, next serpents, and lastly, humans.

Another example of other cultures that embraced evolution can be seen in the American Indian totem clans who believed themselves to be the descendants of a "common ancestor"; i.e., that humans evolved from various animals. For example (Anonymous, 1898, p. 467):

> [the Turtle clan of the Iroquois were]…descended from a fat turtle, which, burdened by the weight of its shell in walking ... gradually developed into a man. The Cray-Fish clan of the Choctaws were originally cray-fish and lived underground, coming up occasionally through the mud to the surface. Once a party of Choctaws smoked them out, and, treating them kindly . . . taught them to walk on two legs, made them cut off their toe nails and pluck the hair from their bodies, after which they adopted them into the tribe. But the rest of their kindred, the cray-fish,

... continued on p. 3

The Revolution of Creationism

by David E. Shormann, PhD

A recent article in *GSA Today*, titled "The Evolution of Creationism,"[1] is just one more of a multitude of biased and deceptive articles mocking and misinterpreting what God's word and His works say about earth history. Claiming to be the lead "Science Article" for the November 2012 issue, this should be your first clue that author David R. Montgomery and GSA's editors are unwisely mingling scientific things with historic things.

Natural history research is not scientific research

Anyone, creationist or otherwise, who attempts to interpret unobserved past events is doing history research. Montgomery's article is no "Science Article," as the Table of Contents of the *GSA Today* publication proclaims.[2] Rather, it is a history article, and a dogmatic one at that. It is pointless to write a "science article" against creationism, which is an interpretation of the past, and then bash creationism as "unscientific." Creationists, but even more so, university professors like Dr. Montgomery, need to better discern between natural history endeavors and scientific ones.

The abstract to Dr. Montgomery's article claims 21st Century creationists have "abandoned faith in reason and cast off a long-standing theological tradition that rocks don't lie." Words cannot describe the amazing untruth of this statement. The truth, however, is that the author includes a paltry list of references, with the most recent one by a creationist author being from 1961! So Dr. Montgomery is either deliberately ignoring, or is honestly ignorant of, the revolution of creationism since Whitcomb and Morris' 1961 book, *The Genesis Flood*.[3]

God's word calls Christians to "reason together" (Isaiah 1:18), so our goal is to consider both faith and reason. What many Christians have not "abandoned faith in" is Scripture as both a true and reasonable historical account, and this is evident in Christian churches, private schools, and home schools across America and around the world. Neither have we abandoned faith in man's ability to unlock mysteries of past events.

Everybody has an interpretive framework

Earth history is always interpreted within a framework. In Dr. Montgomery's article, he claims that it is only creationists who "evaluate facts by how well they fit their theories." This statement does nothing to improve discernment between scientific and historic endeavors, and adds confusion regarding the word "theory." Plate tectonics, for example, is a theory that can be tested.

... continued on p. 2

Revolution

...continued from page 1

Is there evidence that crustal plates exist and that they are moving at observable rates? Yes. Is it reasonable to assume that the present rates are about the same as rates in the past? Yes. But is it also reasonable to assume that present rates are not anywhere near the same as they were in the past? Yes! Could we also reasonably assume that something entirely different occurred in the past, like vertical tectonics, and that the current plate movements are just a "settling in" of past movements? Yes, we can do that, too!

So now we have one scientific theory, plate tectonics, but multiple assumptions regarding how it may or may not have worked in the past. Dr. Montgomery's article mentioned plate tectonics, but he only described one use of it for interpreting the past, viz., the present is the key to the past. Why didn't he discuss other possibilities, like the creationist model of Catastrophic Plate Tectonics, or the evidence for massive vertical crustal movements? Perhaps he was not aware of these other possibilities, or perhaps because they don't fit his interpretive framework.

The truth is, all natural historians evaluate facts by how well they fit their interpretive framework. A young-earth creationist who sees a new paper on radiometric age dates for a fossil, which proclaims millions of years, may react by proposing that the age-dating methodology has incorporated invalid (or unconfirmed) assumptions. Likewise, evolutionists who believe the true age is millions of years will reject a radiometric age if it doesn't fit well within their framework.

Creation research articles are more diverse

In the 21st Century, there are peer-reviewed creationist research journals like the *Creation Research Society Quarterly*, *Answers Research Journal*, and *Journal of Creation*. A quick look at the references of just about any research paper in these journals will reveal a diverse mix of both creationist and non-creationist writings.

If Dr. Montgomery practiced the same diversity of ideas that the GSA claims to uphold,[4] he would have known immediately that today's proponents of creation also believe that "the rocks don't lie." The truth is that nobody, creationist or otherwise, believes the rocks are lying. That's absurd. Every rock has a story, but knowing the true story with 100% certainty is impossible. So we end up with different interpretations, because there are different frameworks within which we interpret the past.

Another false claim made in Dr. Montgomery's article is that creationists see "geology as a threat to their faith." Of course, geology should not be a threat to anyone's faith. The only threat is from dogmatic scientists and educators like Dr. Montgomery, who ignore the evidence presented by creationists, and then act like creationists have "abandoned reason." This is bad medicine for impressionable young Christians who go off to universities where men and women like Dr. Montgomery teach, trusting their professors' words over God's word and abandoning faith in Christ as savior. And that should be a warning to Christian parents to pick your children's college carefully, and train them to be prepared to always give an answer for the hope that is in them (I Peter 3:15).

The gospel offends and threatens

Dr. Montgomery and other like-minded individuals see creationism, and more importantly, Christianity, as a threat to their own beliefs, so they suppress and ignore the truth (Romans 1:18). For them, it is not about having a healthy skepticism regarding the interpretation of past events. It is more about having the power to control information and then deliver it to a large number of people who trust their authority. Unfor-

Erratum

Membership Matters
Volume 17, No. 5, p. 11

In the list of secular libraries subscribing to the *CRS Quarterly*, Walla Walla University should not have been included. WWU is a Seventh Day Adventist university. I apologize for the error.

— Editor

Contents

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tunately, in Dr. Montgomery's article at least, it seems GSA is abusing their power by controlling information, while stifling diversity of thought, contrary to their public commitment to a "climate where differing ideas … are fostered."[4]

Interestingly, dogmatic control of information occurred in the 1900's when J. Harlan Bretz, a man who never claimed to be a creationist, published research on the Channeled Scablands of Eastern Washington. He believed the scablands were formed by catastrophic, post-glacial floods, yet it took 40 years for his ideas to gain wide acceptance. Why did it take so long? Well, mainly because geologists at the time feared that a catastrophic interpretation just might provide evidence for another catastrophic event, Noah's Flood.[5]

Today, most geologists are slightly more accepting of catastrophism than were their 20th–century counterparts, so the differences between creationists and others regarding Earth's features really boils down to this: Are today's crustal features a result of mostly high-energy, short-term events, or mostly low-energy, long-term events? There is evidence for both, but the former interpretation fits better within a biblical framework of earth history.

Creationism is not going away

There is evidence the earth is old, and evidence the earth is young. Always has been, always will be. The differences arise not because "science has proven" one position over the other, but because of the nature of the problem at hand, which is that we simply cannot replicate unobservable past events, a situation which renders the topic unscientific. The young earth/old earth, creation/evolution controversy is not going away because ultimately, this is not a scientific debate, but a debate about how to interpret both scriptural and physical evidence of earth history.

Because man is imperfect, our historic interpretations of unobservable events are imperfect. But as a Christian, a scientist, and a natural historian, I believe that both the creation and Providence proclaim the earth is thousands, not billions of years old, and that it was created from nothing in 6 days.

Let's pray that those who treat history like history will increase, and that those who promote dogmatic and bigoted responses to these different interpretations will decrease, being transformed by the renewing of their minds in Christ (Romans 12:2).

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Ancient Idea

...continued from page 1

> are still living underground. The Osages are descended from a male snail and a female beaver.

The relationship of totemism to evolution was described by Panati (Panati, 1987, p. 3) as stemming

> …from a belief rooted in ancient totemism, the claim, predating Darwinism by thousands of years, that humankind descended from animals. Differing from Darwinism, however, totemism held that every tribe of people evolved from a separate species of animal. A tribe worshiped and refrained from killing its ancestral animal and employed parts of that animal as amulets, called totems.

Hinduism and reincarnation

The Hindus taught a similar idea in the *Madhra Sampradaya*. In this sacred text the soul starts out its existence in a lower form of life, and is "transmitted to amphibians, reptiles, mammals, semi-man, and finally ends up in a superman" or nirvana state. Furthermore, they believed that, like humans, all animals have souls; therefore, they believe all animals are sacred, and none are to be harmed. In addition, since early times Hinduism has taught (Seshadri, 1995, p. 1)

> …that the "lower" creatures are not fundamentally different from the humans; their kinship with the humans was a given; thus this great artificial divide between humans and animals which is a fundamental axiom of the Semitic religions, which deny that animals have souls, and which encourage men to lord it over the animals, and therefore find it unacceptable that humans could have evolved from them, this whole syndrome does not exist in Hinduism. Hindus find it quite reasonable and natural that science has discovered what they had always believed - there is no such absurd divide; all life is a continuum. Thus Darwin would have found a welcoming audience among the Hindus.

In other words, modern evolutionary science now teaches an idea that, at its core, is based on Hinduism and other ancient religious beliefs. Some have opined for these reasons that reincarnation is "based on evolution" and is "completely compatible with Darwinism" (Head and Cranston, 1967, pp. 391, 400). As a result, Prasad (1994, p. 1) claims that it is a

> … known fact that Darwinism has shaken the pillars of the western religions and the western civilization. That it raises heated debate among the people in the west, even today is an indication as to the sensitivity of this issue. There is no doubt that Darwinism is the TRUTH. Why don't people just accept it and get along with life. Darwinism is still a hypothesis and not an accepted fact according to the people of the west. On the other hand, I haven't met a single Hindu or a single Indian for that matter who says it is wrong. Neither my parents (who are religious Hindus) nor my elders have ever told me that Darwinism is wrong. They accept it and have not even made a slight move in the direction of dissuading their children from believing it. This goes for the

> whole culture. And the culture is predominantly Hindu. I am not sure about the rest of the Asian countries or cultures, but it is true that Darwinism hasn't shaken any faith in India or of its people who are predominantly Hindu.

Buddhism was an attempt to reform Hinduism, and has retained the basic evolution views of the religion from which it broke away. Buddhism also teaches that the universe is uncreated, without beginning or end, and exists as an endless set of cycles.

Evidence also exists that the Greek philosophers gleaned their evolution-of-life ideas from the Hindu belief in reincarnation, viz., that souls were transformed from one animal to another until they reached the level of perfection they called *nirvana* (Osborn, 1929).

Both the Greeks and Hindus likely obtained their evolution-of-life ideas from even more ancient peoples. Baker and Nichol (1926, p. 13) concluded that from "the Middle Ages on, we have a record of one speculation after another on the part of various philosophically-minded individuals...." about the origin of life by various Darwinistic means.

Greeks

An early Greek who postulated a theory of evolution was Lucretius (c.95–c.55 B.C). He believed that the earth was "mortal," existing and operating without the need for divine intervention, and that it was therefore necessary to explain the cause for *all* natural phenomena—the night-day cycle, the movements of the Sun, Moon and stars, and the existence of plants and animals—solely in naturalistic terms (Campbell, 2004). To account for the existence of the living world, many ancient scholars, such as Lucretius, accepted the idea of spontaneous generation. Lucretius' account of the origin of life, and of species, is the longest and most detailed, extant account dating back to the ancient world. It is a mechanistic theory that negates the need for any divine design anywhere, and is a forerunner of Darwin's theory of evolution (Campbell, 2004).

Atheism was also an important part of some early evolution worldviews. Cornford (1957, p. 21) noted that the Ionian evolution theory of origins "made the formation of the world no longer a supernatural, but a natural event. Thanks to the Ionians, and to no one else, this has become the universal premise of all modern science." Certain ancient theistic religious ideas also helped pave the way for Darwinism. A notable example is "The Great Chain of Being" doctrine which taught that all life was hierarchically and immutably created by God, or evolved as a result of the natural laws that God set in motion (Lovejoy, 1960). Deism, especially, easily lent itself to Darwinism.

One of the first naturalistic evolutionary theories was proposed by Thales (640–546 B.C.) of Miletus, a city in the province of Ionia on the coast near Greece. Thales was also evidently the first person to advance the idea that life originated in water (Birdsell, 1972, p. 22). Birdsell added that Thales'view of biological evolution "was not too far from modern truth" of evolution (1972, p. 22). Carl Sagan (1980, p. 177) concluded that Thales advocated the belief that "the world was not made by the gods, but instead was the work of material forces interacting in Nature," an idea Sagan believed has been vindicated by science today.

Life originated in water

One of Thales' most famous students, Anaximander (611–547 B.C.), developed these ideas even further. Anaximander taught that life originated in the sea or in a moist environment, and once life reached land, it somehow evolved and adapted (Bowden, 1982, p. 5). He even concluded that humans evolved from fish or fishlike forms (Thompson, 1981, p. 29). These fish eventually turned into men, discarded their scaly skin, and moved to dry land where they have lived ever since. Anaximander also taught that everything came from the "apeiron," a Greek word meaning unlimited, infinite or indefinite past, and eventually returned to the apeiron, re-evolving in an endless recycling process reminiscent of reincarnation. Furthermore, his evolution theory was totally naturalistic, and did not rely on a deity (Abel, 1973, p. 27).

The Greek philosopher Empedocles (493–435 B.C.), often called the father of evolutionary naturalism, argued that chance alone "was responsible for the entire process" of evolution of simple matter into modern humankind (Thompson, 1981, p. 31). Empedocles concluded that spontaneous generation could fully explain the origin of life and, consequently, there was no need for God or gods. The earth itself is both our creator and our God. He also taught that all types of living organism gradually evolved as a result of the process of trial-and-error recombinations of animal parts (Osborn, 1929, p. 52).

Only the fittest survive

Empedocles also believed that natural selection was the primary mechanism of evolution: the fittest were more likely to survive to pass their traits on to offspring, and likewise the less fit were more likely to be eliminated and, consequently, would not pass on their traits. He also taught that the first organisms were "formless masses" lacking sexes, and only later did the sexes separate (Osborn, 1929, p. 100). To summarize, Empedocles' pre-Darwin survival-of-the-fittest theory taught that life evolved by pruning the less fit life forms via the merciless destruction of the weaker animals and plants. Another Greek philosopher, Democritus (c.470–c.380 B.C.), taught that at one time only atoms and space existed from which all life eventually evolved.

Heraclitus of Ephesus (c.535–c.475 B.C.), another Greek philosopher, wrote a book titled *On Nature* in which he took Anaximander's ideas one step further: matter constantly changes and thus life, which was made of matter, was also constantly changing. All life is the result of earlier, less evolved life, and all life is constantly evolving into new and different life forms (Abel, 1973, p. 30). Called "the apostle of change," Heraclitus even taught that one form of matter, such as water, could give rise to another form of matter, such as soil. Born at Ephesus in Asia minor, he was called the "weeping" philosopher because of his pessimistic worldview. For example, he taught that everything material originated from fire, and that everything will end in fire.

Unfortunately, his work only survives in fragments, making the drawing of conclusions about his ideas difficult. Osborn concluded that Heraclitus' primary contribution to biological evolution was his conclusion that "nature" perpetually changes and is not static, as many ancients had assumed (1929, p. 51). A basic modern darwinian idea is that *change* rather than a fixed order of living things is the natural order (Osborn, 1929, p. 100).

Nor is the use of the fossil record as evidence for evolution a recent development. The first person "known to have explicitly recognized fossils as memorials of geological change and the succession of life" was evidently Xenophanes (c.570–c.480 B.C.) of Colophon (Glass, et al., 1959, p. 6). Some speculate that Thales and Anaximander (both who lived in the 6th century B.C.) also may have concluded that the fossil evidence supported both biologi-

cal and geological evolution (Glass, et al., 1959, p. 6).

Xenophanes believed that plants and animals had sprung to life from the mud and rocks as the seawater, which he taught was at one time everywhere, slowly receded (Abel, 1973, p. 34). He did much research on the changes that occurred through time on the earth and on the fossils. Abel concluded that the work of Xenophanes was so important that it put abiogenesis on a solid empirical foundation (Abel, 1973, p. 34).

Ascent with modification

Aristotle (384–322 B.C.) taught that humans are life forms that happen to be the highest point of one long, continuous "ascent with modification" of life. Aristotle made a detailed study of all life known to the Greeks in his day, and concluded from his study that all life was linked by some evolutionary process (Bowden, 1982, p. 5). Aristotle may more accurately be called a theistic evolutionist because he did not believe that life could come about purely by natural law and chance (Armstrong, 1965, pp. 9–10).

Although many early Greek manuscripts have been lost, the texts that have survived provide enough details to determine with some accuracy what the ancient Greeks believed about origins. The evidence that has survived motivated Osborn to conclude that "Darwin owes more even to the Greeks than we have ever recognized" (Osborn, 1929, p. 4).

Creation-evolution controversy is also ancient

Not only is evolutionary naturalism an old idea, but the creation-evolution conflict is ancient as well. Macior (1990, p. viii) noted that in the

> …eighteenth-century European "Age of Reason," an attempt at a complete separation of faith and reason, coupled with a belief in the self-sufficiency of reason to explain all causality, precipitated what Andrew White later called the "warfare of science with theology." Yet, even in Aristotle's time the ideas of Democritus and the Atomists and the reflections of Empedocles on gradual adaptation and change in organisms must have stimulated conflict between religion and natural science.

Darwin's work was only the "palace coup," among "the elite, the final act in a long drama, with the real fight to establish a lawful, evolutionary worldview among the 'people' taking place a generation earlier" (Desmond, 1992, p. 1). In the words of Richards (2001, p. 456),

> … virtually every reputable British scientist rejected the evolutionary hypothesis when [the book titled] *Vestiges* [*of the Natural History of Creation* in 1844 by Robert Chambers] advanced it, whereas in the wake of the *Origin* virtually every naturalist accepted it.

This, though, does not negate the fact that Darwin's major thesis was not original with him. He evidently did not properly acknowledge those who actually originated the idea of evolution, or at least had developed the concept prior to Darwin's publish-

Math Matters

by
Don DeYoung, Ph.D.

Chaos Theory

Chaos theory describes unpredictable changes which occur in complex systems. Examples include the weather, electrical circuits, and the stock market. Chaos theory also applies to planetary orbits over long time periods.

The lack of accurate prediction of system behavior results from two factors, the first being sensitivity to initial conditions which often are not known. A second factor is the impact of numerous variables or environmental factors, far too many to evaluate or include in mathematical models. The systems themselves obey precise mathematical and physical laws, but their complexity lies beyond comprehensive computer analysis.

One example of chaos involves the flow of fluid through a pipe, whether liquid or gaseous. The fluid flow may be smooth or *laminar,* in which case the velocities and positions of particles are orderly and predictable. With increased

pressure and flow velocity, however, the fluid motion within the pipe may become turbulent or chaotic with the formation of vortices and eddy currents. At such times the future path of a particle of fluid cannot be exactly determined. This turbulent or chaotic flow is an important unsolved problem since it can occur in pipelines, water turbines in dams, rocket engines, and even within our veins and arteries (DeYoung, 1992, p. 21).

An everyday result of chaos theory is that weather prediction remains far from exact. Improved computer models help our understanding of weather up to several days in advance. However, chaos rules out a correct, precise prediction of local weather conditions for several weeks or days in advance. No matter how good the weather data, an inherent limit to accurate prediction arises.

As an extreme example, somewhat overstated, the flapping of a butterfly's wings in the Amazon rain forest may set in motion a chain of events which later results in a tornado in America's Midwest. This is called the butterfly effect, more grandly known as the law of unintended consequences. The idea is that nearly infinitesimal beginnings can later have a magnified impact on the system. As a result, long-range weather prediction remains uncertain. Only the Creator knows future events exactly, including weather details, since He allows the flutter of the butterfly's wings.

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ing of the *Origin* (Stott, 2012).

Modern scientific research, though, has found that most often the "weaker" individuals in a species are not "selected" into extinction. Evidence now points to the conclusion that nearly all extinctions are the result of chance and/or human mismanagement (Raup, 1991). Natural selection cannot create, but can only prune the less-perfect organisms, serving primarily to slow down the rate of biological degeneration (Bergman, 1993).

Modern Darwinists often note the religious basis of evolutionary naturalism (Sagan, 1980). Some scientists conclude not only that humans are "merely... African apes," but that since evolution is our creator, evolution *is* our God. Nobel laureate and developer of the Salk vaccine Jonas Salk, was once asked if, when he uses the word evolution, he means God. Salk replied, "If I were to define God I would say God is evolution. Evolution to me is what God is to others. It's a force that exists, that repels us, that impels us, that causes me to do what I do. It causes you to do what you do" (quoted in Moyers, 1990, pp. 241–242). An entire book titled *God is Evolution; Evolution is God* argues in support of this thesis (Northe, 1993).

Conclusion

Organic evolution is part of the past and present worldview of many religions and cultures, and is not a modern, or even an exclusively scientific idea, as is often claimed in an attempt to give Darwinism credibility. This fact was expressed well by one evolutionist (Beebe, 1965, p. 97) when he wrote that the "idea of miraculous change, which is supposed to be an exclusive prerogative of fairy-tales, is a common phenomenon of evolution."

The origins of Darwinism can be found in ancient religions, and in Greek and other ancient pagan philosophers. Acceptance of the modern evolutionistic worldview did not occur because modern science has replaced old superstitions about biological origins. It may be more accurate to state that modern evolution philosophy has more to do with the resurrection of certain ancient religious beliefs than the results of scientific research.

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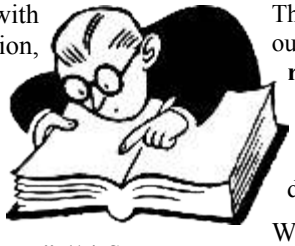
Speaking of Science

Editor's note: Unless otherwise noted, S.O.S. (Speaking of Science) items in this issue are kindly provided by David Coppedge. Opinions expressed herein are his own. Additional commentaries and reviews of news items by David, complete with hyperlinks to cited references, can be seen at: http://crev.info/. Unless otherwise noted, emphasis is added in all quotes.

"Evolution's Misleading Language" Rebuked



It's not just creationists who are fed up with evolutionists' propensity to personify evolution, contrary to their own beliefs.

In a letter to Science on Nov. 9, Alfred Nigel Burdett rebuked "Evolution's Misleading Language."[1] He didn't have farther to look than *Science* magazine itself for an example:

> In the News of the Week story "All that glitters" (14 September, p. 1277), Beverley Glover of the University of Cambridge describes the iridescent fruit of the African perennial herb *Pollia condensata* by saying, "The fruit's dazzling display **may have evolved to capitalize** on birds' attraction to sparkly objects, **or to trick them into eating something that looks like a blueberry** without going to the trouble of actually making juicy flesh." At a time when **remarkably few people seem to understand the basic mechanism of evolution**, it seems **inappropriate** for *Science* to **publish such comments without clarifying them** to **ensure that no one is misled.**

This type of deceptive language, which "**combines teleology with anthropomorphism**," is inappropriate because Darwinism does not allow for final causes or purposes in nature; an organism cannot "evolve to do" something. Yet instances in evolutionary articles and papers are rampant, Burdett indicated. Both the *Science* news story[2] and the *PNAS* article it referenced[3] were guilty, he said, "indicative of how widely and unfortunately such **inaccurate and misleading language** is now used in the scientific literature."[1]

1. Burdett, A.N. 2012. Evolution's misleading language. *Science* 338(6108):741–742.
2. Glover, B. 2012. All that glitters. *Science* 337(6100):1276–1278.
3. Vignolinia, S., P.J. Rudall, A.V. Rowland, et al. 2012. Pointillist structural color in *Pollia* fruit. *PNAS* 109(39):15712–15715.

Y's Guys Have a Marvel, not Junk

The Y chromosome is making a comeback. It's not junk, it's an "evolutionary marvel." *LiveScience*[1] had this to say:

> The Y chromosome may have gotten a bad rap. Despite the claim that this male sex chromosome is mostly junk, new research suggests it's actually a lean, mean, highly evolved machine for producing the fittest males possible.

A study presented at a genetics conference disputed two claims: (1) that the Y chromosome is junk, and (2) that variation in the male sex chromosome is due to a few "alpha males" passing on their genes. As for the latter, the study suggests more monogamy in human history than previously assumed; if anything, females were more promiscuous.

As for the junk myth, the article explained:

> The researchers' models showed that **evolution probably weeded out a lot of the variation** that happened randomly throughout history. But **evolution didn't just cull harmful gene changes: it also reduced the variation** in the one-third of the Y chromosome composed of highly repetitive strings of letters.
>
> Those strange regions don't code for proteins, which carry out a gene's instructions in the body, but Wilson Sayre's **results suggest they are probably doing something useful or evolution would have** [sic] **not have reduced** how much variation they contain. Some scientists have suggested those regions prevent the Y chromosome from degenerating, but their exact purpose remains a mystery.

Whatever mysteries remain, the new study counters earlier claims that men were on the way to extinction, genetically speaking.

Let's get this straight. When the Y chromosome was junk, evolution was keeping junk around. The new study claims that evolution produced a lean, mean, highly evolved machine. When the Y was degenerate, evolution didn't care to maintain it. The new study claims that evolution engineers the Y to create the fittest males possible. When there was variation, evolution varied it. When variation was low, evolution cleaned it up. Evolution wins! No matter how opposite the claims, evolution can't lose.

1. Ghose, T. (2012, November 12). Guys, your Y chromosome is an evolutionary marvel. *LiveScience*. Retrieved November 29, 2012, from www.livescience.com/24718-y-chromosome-not-junk.html

New Volley in the Grand Canyon Age Wars

Age estimates for the Grand Canyon by secular geologists range between 100,000 years and 70 million years. Who are you going to believe?

The latest applecart-upsetting estimate, published in *Science*[1] by Rebecca M. Flowers of the University of Colorado, and K. A. Farley of Caltech, puts it at 70 million years — 12 times older than what they called the "prevailing view" of 5–6 million years. Flowers and Farley based their estimate on helium content of apatite in the western Grand Canyon, an alleged proxy for temperature and exposure to air. They recognized, though, the "**puzzling array of data**" that make dating difficult.

While *ScienceDaily*[2] seemed excited to announce that Grand Canyon is "**old as the dinosaurs,**" the AAS news service *Science Now*[3] says the new estimate is not likely to settle the controversy: "**many researchers are skeptical**, noting that it's **not clear whether these findings radically change current scenarios** of how and when the iconic gorge was carved."

According to *Science Now*, Flowers realizes that the debate over the age of the canyon has raged for over 150 years: "**If history were as simple as the popular view,** the canyon's origins wouldn't continue to be a topic of hot debate," she said. Skeptics counter that the one measurement from apatite helium content "**hardly closes the debate** on the canyon's age." There's "a **lot of evidence**

for a young Grand Canyon," one said (thinking in terms of 6 million years or less). Another critic, who collected the same kind of data a couple of kilometers away and got far younger results, calls the 70-million-year date "**out in left field.**" The 2008 estimate of 17 million based on speleothems is also controversial.

Becky Oskin at *LiveScience* focused on the controversy, admitting that from the rim the canyon "looks young" (still meaning a few million years). She quoted geologist Richard Young:

> "It really looks like they're onto something, but **it's hard to make sense out of it**," said Young, a professor at the State University of New York in Geneseo. "It's really good work and it's really **interesting**, so **obviously there's something we're missing in the story.** I'm sure we're **going to be talking about it forever**," he said. [4]

ScienceDaily, though, echoing the U Colorado press release[5] featuring home girl Rebecca Flowers, made the new (old) date look as good as possible. Even so, the press release recognized the controversy, and hinted that Flowers might be partly right:

> Flowers said there is **significant controversy among scientists** over the age and evolution of the Grand Canyon. A **variety of data suggest** [sic] **that the Grand Canyon had a complicated history**, and the entire modern canyon **may not have been carved all at the same time.** Different canyon segments **may have evolved separately** before coalescing into what visitors see today.

Even so, there's a huge time difference between 70 million and even 17 million years — a period during which mass extinctions and the rise of the Rocky Mountains are said to have occurred. "I expect that our interpretation that the Grand Canyon formed some 70 million years ago **is going to generate a fair amount of controversy**, and I **hope it will motivate more research** to help solve this problem," Flowers said, hinting that her study with Farley was almost intentionally put out as a challenge.

1. Flowers, R.M. and K.A. Farley. 2012. Apatite $^{4}He/^{3}He$ and (U-Th)/He evidence for an ancient Grand Canyon. *Science* DOI:10.1126/science.1229390
2. University of Colorado at Boulder (2012, November 29). Grand Canyon as old as the dinosaurs: Dates for carving of western Grand Canyon pushed back 60 million years. *ScienceDaily*. Retrieved December 1, 2012, from http://www.sciencedaily.com /releases/2012/11/121129143301.htm
3. Perkins, S. (2012, November 29). A grand old canyon. *Science NOW*. Retrieved December 1, 2012, from http://news.sciencemag.org/sciencenow/2012/11/a-grand-old-canyon.html?rss=1?utm_source=customfollowed&utm_medium=rss&utm_campaign=20121130
4. Oskin, B. (2012, November 29). New clues emerge in puzzle of Grand Canyon's age. *LiveScience*. Retrieved December 1, 2012, from www.livescience.com/25123-grand-canyon-old-age.html
5. Anonymous (2012, November 29). Grand Canyon as old as the dinosaurs, suggests new study led by CU-Boulder. *Colorado University News Release*. Retrieved December 1, 2012, from www.colorado.edu/news/releases/2012/11/29/grand-canyon-old-dinosaurs-suggests-new-study-led-cu-boulder

Possible Problems for Vast Ages

Two articles in the secular science literature point to possible upsets in long-age assumptions for the earth and mankind.

Most Human Mutations Are Recent

A press release from the University of Washington states, "**Harmful protein-coding mutations in people arose largely in the past 5,000 to 10,000 years.**" [1] The Exome Sequencing Project, a consortium of evolutionary geneticists, surveyed a million single-letter changes in the human "exome" (protein-coding genes) for 6,515 people. "Overall, the researchers predicted that about 81 percent of the single-nucleotide variants in their European samples, and 58 percent in their African samples, **arose in the past 5,000 years.**"

The researchers were able to fit this surprise into the "out-of-Africa" hypothesis by claiming that mutations became fixed more rapidly among Europeans after they migrated. "The Out of Africa bottleneck led to inefficient purging of the less-harmful mutations," one explained. Still, if 150 mutations are passed from parent to offspring on average, it would seem that rate of damage could not go on for many tens or hundreds of thousands of years. See also the *ScienceDaily*[2] article, which states,

> The researchers pointed out that the results illustrate **the profound effect recent human evolutionary history has had on the burden of damaging mutations** in contemporary populations.

The consortium agrees that their results indicate most harmful mutations in the human gene pool are "**of recent origin, evolutionarily speaking.**" Without supporting evidence, though, the researchers used standard Darwinian talking points to hope for a positive outcome, trusting that the large number of recent mutations "may have created a **new repository of advantageous genetic variants that adaptive evolution may act upon in future generations.**" Whatever the meaning, *ScienceDaily*[3] reported that the researchers stated,

> The recent dramatic increase in human population size, resulting in **a deluge of rare functionally important variation**, has **important implications for understanding and predicting current and future patterns of human disease and evolution.**

Tree Rings Point to a Recent Cosmic Ray Event

What on earth happened in 768 A.D.? Charlemagne was busy building his empire, unaware of what was happening over his head. The "Charlemagne Event" was not caused by him; rather, something beyond earth sent a shower of cosmic rays toward earth. *PhysOrg* asks some pointed questions:

> Until recently, the years 774 and 775 were best known for Charlemagne's victory over the Lombards. But earlier this year, a team of scientists in Japan discovered **a baffling spike in carbon-14 deposits within the rings of cedar trees that matched those same years.** Because **cosmic rays are tied to carbon-14 concentrations**, scientists around the world **have wondered about the cause**: a nearby supernova, a gamma ray burst in the Milky Way or an intense superflare emanating from the Sun?[4]

In the article, Adrian Melott (U of Kansas) presents his argument that the spike came from a coronal mass ejection (CME) from the sun. This CME could have been 10–20 times larger than the largest spike observed in recent times (1859), called the Carrington Event. Stars beyond our sun have been observed to have very large flares. Other cosmic sources might include a gamma ray burst or nearby supernova, though the latter would have been observable in the sky.

If an extra-large CME occurred during Charlemagne's battles, it might not have been noticed. It might have caused a slightly

higher risk of skin cancer. But today if an event that size occurred, it would disrupt the world's power grid and blow out transformers over a wide area. We'd only have a few minutes warning before our civilization would become seriously disrupted.

We offer these findings to stimulate further research by asking some questions. If a CME or other cosmic source could dramatically increase carbon-14 production in the atmosphere, what does that do to the calibration profile for radiocarbon dating? What could be the impact of a large shower of cosmic rays on the atomic clocks used for radiometric dating in general? Could a cosmic event stimulate accelerated nuclear decay, lowering the activation threshold to give a false reading of longer ages (e.g., more fission tracks) than actually occurred? If not, how would we know? Open-minded physicists may want to look into this.

Regarding the mutation rate, the finding appears to add more impetus to Dr. John Sanford's theory of genetic entropy, that the human race could not purge harmful or nearly-neutral mutations fast enough to avoid extinction in very many thousands of years, let alone tens of thousands.[5] The evolution-speak in the article seems concocted to rescue Darwin's long ages rather than face the clear implication that humans have not been evolving for hundreds of thousands of years. Even with lower population sizes, genetic entropy takes its toll. And if you think cosmic "bullets" to the genome provide a pool of variants that natural selection *may* act upon in future generations, good luck outrunning extinction while the bad mutations add up.

1. Gray, L. (2012, November 28). Harmful protein-coding mutations in people arose largely in the past 5,000 to 10,000 years. *University of Washington.* Retrieved December 8, 2012, from www.washington.edu/news/2012/11/28/harmful-protein-coding-mutations-in-people-arose-largely-in-the-past-5000-to-10000-years/
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◁ CM ▷

Matters of Fact... Can Mutations Add Information?

by Jonathan Bartlett

Editor's note: Mr. Jonathan Bartlett serves as guest respondent to this issue's featured question. 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 Can mutations add information to the genome?

A Creationists have often made the claim that mutations cannot add information to the genome. However, this claim, while true in spirit, is hard to defend as worded. The reason for this is that there are innumerable definitions of the term "information," depending on the context.

When discussing the transmission of data, the measurement of the "size" of information is based on how hard it is to reproduce the transmission accurately at the other end. In such situations, adding any kind of data to the transmission increases the amount of "information," even if it is gibberish. In fact, using this definition, gibberish actually contains more information because it is harder to transmit reliably!

What is meaning?

However, when most people talk about information, they are speaking about something deeper than how hard it is to transmit a message — they want to know if it contains meaning. It turns out, "meaning" is also tricky to define, and it is even harder to quantify! Some would even say it is impossible to quantify, but I am not so pessimistic. In any case, no one has ***yet*** determined a way of quantifying meaning. However, there are several ways to measure that which can be termed *prescriptive information* or *functional information*; viz., information about how to accomplish a task (Durston et al., 2007; Abel, 2011).

Another consideration that often arises is whether the rearrangement of information counts as adding information. For instance, several species of bacteria can vary their outer-surface proteins by recombining parts from other genes or pseudogenes (Zhang and Norris, 1998). Does this type of mutation add information? The recombined gene is definitely new — it genuinely did not exist before attaining its current composition. Therefore, it would be difficult to say that no new information was generated.

Pre-programmed configurations

However, it is clear that the mutations described above are *parameterized* rather than being open-ended. In other words, the cell's existing biology defined a set of likely-beneficial configurations. The exact combination of genetic configurations may be new, but the possible combinations are bound by the limits of the organism's intrinsic capabilities to generate mutations. Caporale (2006) calls this potential "the implicit genome," meaning that a given genome is not just the configuration of DNA at a given time, but it is also comprised of the potential configurations that the genome is pre-programmed to reach.

So what does this do to the frequently stated claim that mutations do not add information to the genome? I think that the fundamental idea behind the statement still stands — haphazard changes don't produce functional code. However, the exact wording needs to be improved.

The way that I usually state it is this: mutations can only be information-rich if they started out with a large amount of information. It takes information to appropriately channel mutations in the right direction (Bartlett, 2008; 2010). This requisite information can be manifested in several forms, but they are often comprised of a combination of specialized proteins which assist the recombining of DNA, and a set of "signal" sequences directing these proteins to the best places to cut-and-splice.

... continued on p. 10

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Information
...continued from page 9

It takes information to add information

For instance, when your body generates antibodies, it doesn't have all of the genes pre-coded. Instead, it has a large variety of gene parts. To generate an antibody, specialized splicing proteins (called RAG1 and RAG2) "cut out" the appropriate gene parts and reassemble them into a single antibody gene. The RAG proteins "know" where to splice the gene parts because the gene fragments have special DNA signals (termed "Recombination Signal Sequences") which allow the RAG proteins to target specific DNA sites for cutting and recombination (Market and Papavasilious, 2003).

So, for the antibody example presented above, mutations can "add" information, but it takes a cascade of existing information for this to happen; in fact, it requires substantially more existing information than the amount of new information which is being generated (Dembski, 2005). Comprising the starting information are all of the gene pieces, all of the signaling mechanisms, and the cut-and-paste genes. The resulting "new" information consists of just the combination of gene pieces.

While such systems can produce a large number of genes, they all appear to fall within the general parameters of the mutation-generating system. Therefore, while it is not possible to unequivocally say that mutations cannot add information to the genome, the basic idea behind that statement is accurate: functional information doesn't arise haphazardly — it happens by design (Bartlett, 2009).

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