



Creation Matters

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Fibonacci Numbers

Little is known about the Italian mathematician Leonardo Fibonacci, also called Leonardo of Pisa (A.D. 1170–1240). His 1202 book, *Liber Abaci*, helped replace Roman Numerals with the decimal number system used worldwide today. Fibonacci’s writing also described the well-known sequence of numbers illustrated in Table 1, which is generated by adding the two previous numbers, with the first two numbers being either 1 and 1, or 0 and 1 (see Table 1).

These “Fibonacci numbers” originally described the growing population of breeding rabbits. However, the numbers also appear with unusual frequency in plants and trees (Table 2; see also p. 12 of this issue for a sunflower example). One might suggest that Fibonacci numbers show the Cre-

ator’s mathematical fingerprints across the world.

The Fibonacci number sequence has many interesting properties. The ratio of any two adjacent, larger Fibonacci numbers, such as 1597/987, approaches the *golden mean*, or 1.618. This ratio is also called the *divine proportion*. Objects with a length-to-width ratio of about 1 to 1.6 are said to be especially pleasing to the eye. Examples range from credit cards to breakfast cereal boxes.

Perhaps it is no accident that the piano has an eight-note octave with five black and eight white keys, all Fibonacci numbers. A financial author friend of mine, Derrik Hobbs, has even applied Fibonacci numbers to trends in the stock market (Hobbs, 2003). He writes,

...Fibonacci ratios represent the purest form of measurement of mass human behavior...For trading purposes, Fibonacci is a mathematical structure of the growth and decay of psychological interest in a stock, futures contract, or commodity.

Fibonacci numbers appear to be imbedded everywhere in the fabric of the arts and nature. Mathematics is the language of cre-

TABLE 2. Examples of the Fibonacci Sequence in Nature

Item	Fibonacci Number
Ponderosa Pine	Clusters of 3 needles
Ivy	3 leaves
Virginia creeper	5 leaves
Pineapple, Pine cone	Surface spirals number 8 and 13 in two directions
Daisy	Blossom spirals number 21 or 34
Sunflower	Seed spirals variously number 21, 34, 55, 89, or 144

ation and this special sequence of numbers is just one example. The Fibonacci Society is an association dedicated to the study of Fibonacci numbers.

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Hobbs, D. 2003. *Fibonacci for the Active Trader*. TradingMarkets.com Publishing Group, Los Angeles.

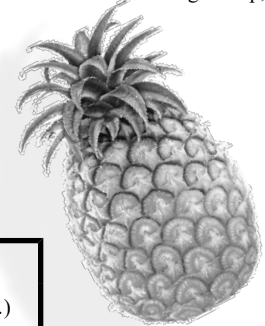


TABLE 1. Generation of the Fibonacci Sequence

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, ... (1+1=2; 1+2=3; 2+3=5; 3+5=8; 5+8=13; 8+13=21; 13+21=34; 21+34=55; 34+55=89; 55+89=144; 89+144=233 ...)
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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 What is wisdom and how does one get it?

According to English dictionaries, wisdom can be defined as the quality of being wise; the ability to discern and apply good judgment; and having knowledge and experience appropriate to a task. The Hebrew word for wisdom, *hokmah*, (חִכְמָה), appears just over 140 times in the Bible and is used in each of these senses (Goodrick and Kohlenberger, 1999). Yet the Bible points out a crucial aspect of wisdom that is ignored by the average English dictionary — the source of wisdom.

God is the source

The Bible makes it clear that God is wise. He created us, and the features and creatures of the world around us, by his wisdom (Psalm 104:24–25; Proverbs 3:19–20; Jeremiah 10:12; 51:15). There is a measure to which God gives wisdom to people even when they do not acknowledge Him (Job 35:10–11).

For example, if God did not provide the wisdom for humans to productively manage the soil to plant and harvest crops (Isaiah 28:24–29), it could jeopardize our survival and ability to fill the earth as God had commanded (Genesis 1:28; 9:1). So in His kindness and mercy, God provides a level of wisdom even to those who have no clue whence it comes.

The Bible also describes a special wisdom which is given to certain individuals who acknowledge and serve God (1 Kings 4:29–31). The first use of the word in the Bible involves skilled craftsmen who had the wisdom to make the elaborate, priestly garments and components of the tabernacle (Exodus 28:3). The NIV translates the word as “skill” in some cases (e.g., Exodus 31:3, 6). Wisdom was also given to leaders, such as Joseph, Joshua, Solomon, Daniel and his friends, and Ezra (Psalm 105:17–22; Deuteronomy 34:9; 1 Kings 3:28; 4:29; 5:12; 2 Chronicles 1:10–12; Daniel 1:20; Ezra 7:25) so they could serve God in the role He gave them.

Wisdom and understanding

The word wisdom is often associated with other words, particularly the word “understanding.” Numerous times throughout Scripture, wisdom and understanding appear together, often in the balanced repetition found in poetic sections (e.g., Job 12:12; 28:12; Proverbs 9:10; Isaiah 11:2; Jeremiah 10:12; 51:15; Daniel 1:20; Colossians 1:9). Together, they are used to describe God, and those who follow Him. It is interesting that the wisdom given to Solomon extended beyond what he needed to wisely rule the people of Israel; he also had the ability to understand, describe, and teach about the natural world (1 Kings 4:33).

In a poetic passage with remarkable imagery, Job describes humans mining precious gems far beneath the ground where no one, not even the birds of prey or proud beasts, have gone (Job 28). Then he asks “But where can wisdom be found? Where

For the LORD gives wisdom, and from his mouth come knowledge and understanding.

Proverbs 2:6 (NIV)

does understanding dwell?” (Job 28:12 NIV). Job points out that its value is worth far more than the highly prized gold or precious stones that men expend such effort to find and extract. However, wisdom and understanding can be far more elusive. Job concludes by stating that God knows where it is found, and has “said to man, ‘The fear of the Lord—that is wisdom, and to shun evil is understanding.’” (Job 28:28 NIV).

Beware of Counterfeits

Ever since Adam and Eve ate from the forbidden tree, people have misused the gifts God has given them in rebellion against God. The Bible speaks of a worldly wisdom that is at odds with God. People who do not wish to honor God as their Creator can perceive themselves as wise, even though they are foolish (Romans 1:20–32). This “wisdom” keeps people from recognizing the salvation that God provides, and so they continue on the path to destruction (1 Corinthians 1:17–21). Even those who belong to the church are warned against this kind

of wisdom (1 Corinthians 3:18–21; James 3:14–16). It manifests itself in selfishness and pride, which results in evil behavior.

The Bible repeatedly emphasizes that the fear of the Lord is inextricably linked to true wisdom (Job 28:28; Psalm 111:10; Proverbs 9:10; 15:33; Isaiah 33:6; Micah 6:9). If we fear the Lord, we will esteem His words more than our own opinions or the opinions of others. When we find that our thinking differs from what God says, we change our thinking. When our behavior deviates from what He commands, we change our behavior. As should be evident, this is the opposite of pride, where we think more highly of ourselves than we should. So true wisdom, at its core, is the opposite of worldly wisdom.

Indeed, if wisdom comes from God, we really have no grounds on which to boast of our wisdom (1 Corinthians 4:7). A passage in Jeremiah (9:23–24) brings this point out clearly; a wise man is not to boast in his wisdom, “but let him who boasts boast about this: that he understands and knows me, that I am the LORD, who exercises kindness, justice and righteousness on earth, for in these I delight,” (Jeremiah 9:24 NIV). The implication is that if we know the Lord who exercises kindness, justice, and righteousness (including the kindness to grant us wisdom, strength, and/or riches), then we too will be kind, just, and fair in how we deal with the people around us.

Do we have the Real Thing?

This brings us to how we can recognize wisdom in ourselves or others. True wisdom is not rooted in how many facts we know, or our ability to impress others with our knowledge. Instead, it is rooted in a deep, reverential fear of God that causes us to walk in obedience to Him. It manifests itself in how we treat others.

Wisdom causes us to be kind, considerate, and willing to listen to others (James 3:13, 17–18; Proverbs 9:8–9). It enables us to genuinely care about others and not be easily offended (Proverbs 19:11). It allows us to be patient, as we serve God’s agenda, rather than our own.

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Goodrick, E.W. and J.R. Kohlenberger III. 1999. *Zondervan NIV Exhaustive Concordance*, 2nd edition. Zondervan Publishing House, Grand Rapids, MI. #2683

Speaking of Science

from the Creation-Evolution Headlines

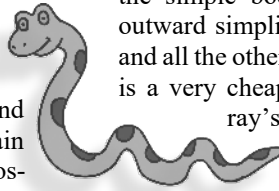
by David F. Coppedge

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

Trending in Biomimetics

Here are a few more examples illustrating why the imitation of nature is one of the hottest trends in science.

Make like a snake. Snakes typically crawl with a side-to-side wiggling motion. Can a snake crawl through a tunnel? "University of Cincinnati biologist Bruce Jayne studied the mechanics of snake movement to understand exactly how they can propel themselves forward like a train through a tunnel," reports *ScienceDaily*.¹ It was that curiosity that led to the headline, "**Snake research could advance robotics** to move through narrow tunnels after a disaster." Curiosity — Observation of design — Imitation of design. That seemed to be Jayne's reasoning process. What he found was a new superpower in nature that inspires imitation.



Snakes are known for their iconic S-shaped movements. But they have a **less noticeable skill that gives them a unique superpower**. Snakes can crawl in a straight line.

Straight-line or 'rectilinear' motion has been observed, but not studied in detail till now.

When the snake inches forward, the skin on its belly flexes far more than the skin over its ribcage and back. The belly scales act like treads on a tire, providing traction with the ground as the muscles pull the snake's internal skeleton forward in an undulating pattern that becomes fluid and seamless when they move quickly.

The snake's muscles are sequentially activated from the head toward the tail in a remarkably fluid and seamless way.

Readers can ignore the superfluous Darwin-ese [language] that asserts dogmatically, "Snakes evolved from burrowing ancestors." What follows is Lamarckian, anyway. Jayne's colleague Steven Newman claims that since straight-line movement is efficient for burrowing ancestors, it must have evolved. Funny that slithering in a straight line didn't happen with gophers or badgers.

What's more important is the inspiration for future intelligent design research: "Newman said robots that can harness a snake's rectilinear motion **could have profound applications**." Jayne and Newman both seem more fascinated by the observations of "amazing contortions" these animals can make. They have 4 modes of locomotion: serpentine, concertina, sidewinding, and rectilinear.

"**They move in so many fascinating ways**. Is that because they have such an **incredible diversity of motor patterns** that the **nervous system can generate**?" he said.

"Even though all snakes have the **same body plan**, there are fully **aquatic** snakes, snakes that move on **flat surfaces**, snakes that move in a **horizontal** plane, snakes

that **climb**. They go everywhere," he said. "And the reason they can go everywhere is they have so many different ways of controlling their muscles. That's pretty intriguing."

Make like a stingray. More inspiration for robotics comes from an unlikely source: the stingray. *Phys.org* reports happenings in UCLA labs:²

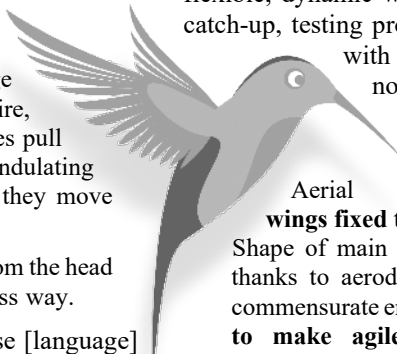
UCLA bioengineering professor Ali Khademhosseini has led the development of a tissue-based soft robot that **mimics the biomechanics of a stingray**. The new technology could lead to **advances in bio-inspired robotics, regenerative medicine and medical diagnostics**.

What caught Professor Ali Khademhosseini's attention was the simple body design of these graceful swimmers. But the outward simplicity is deceptive; underneath are muscles, nerves, and all the other requirements for life. Khademhosseini's soft robot is a very cheap imitation that cheats by borrowing some of the ray's own cells:

The 10-millimeter long robot is made up of four layers: tissue composed of live heart cells, two distinct types of specialized biomaterials for structural support, and flexible electrodes. Imitating nature, the robotic stingray is even able to "flap" its fins when the electrodes contract the heart cells on the biomaterial scaffold.

Even so, he says, "The development of such bioinspired systems could enable future robotics that contain both biological tissues and electronic systems."

Make like a bird. Fixed-wing aircraft are crude compared to the flexible, dynamic wings of a bird. Korean engineers are playing catch-up, testing prototypes of aerial vehicles that can fly freely with independently-controlled wings. Before announcing their latest development, they first criticize today's planes and helicopters in *ScienceDaily*'s coverage:³



Aerial vehicles in a typical category have **main wings fixed** to the body (fuselage) in an integrated form. Shape of main wings, namely airfoil, produces lift force, thanks to aerodynamic interaction with air, and achieves commensurate energy efficiency. **Yet, it is difficult for them to make agile movements due to the large turn radius**. Banking the aerial vehicle that accounts for eventual turn comes from the adjustment of small ailerons mounted on the trailing edge of the wings.

Aerial vehicles in another typical category gain thrust power by **rotating multiple propellers**. They can make agile movements by changing speed of motors rotating the propellers. For instance, pitch (movement up and down along vertical axis) down for moving forward with quadcopters is executed by increased speed of two rear rotors and unchanged or decreased speed of two front rotors. Rotor represents revolving part of motor. **However, they are even less energy-efficient, owing to the absence of lift force created by wings**.

Could you get both benefits in one craft? Yes, by making like a bird. Although discussion of the new "Nsphere drone" with independently-controlled wings doesn't mention birds, the connection is obvious. This new drone achieves new levels of "energy efficiency, swiftness and speed" beyond current aircraft designs

(think falcons). You might see something like it delivering your future Amazon.com packages, they say. Not carrier pigeons?

Make a muscle. *National Geographic* reports⁴ on progress in making “artificial muscles” that act more like real muscles, and are becoming cheaper to manufacture. “Turning to nature, the University of Colorado Boulder scientists set out to engineer a lifelike muscle that was cheap, flexible, and strong.” Their product takes inspiration from the hummingbird, the elephant, and the octopus. While they want to make soft robots that are more lifelike, the test products have nowhere near the complexity of living muscle. They can just move under the intelligent direction of engineers.

Give biomimetics the seal of approval. In a final case, *Phys.org* reports that Korean scientists have used 3-D printing to imitate the whiskers of pinnipeds, a group of semi-aquatic mammals that includes seals and sea lions. Sea lions have “unique whiskers that help them catch even the fastest fish” (*The Conversation*). These whiskers—the longest of any animal—inspired the scientists to use them to make an underwater vortex sensor that uses “soft robotics” technology.

“This paper is a wonderful example of bioinspired soft robotics. The authors have used observations of a natural system to build a materials-based sensor that can be used on underwater robots for better positional control, navigation, and object detection,” says Editor-in-Chief Barry A. Trimmer, PhD, who directs the Neuromechanics and Biomimetic Devices Laboratory at Tufts University (Medford, MA).

The new sensor gathers analog data from the artificial whiskers, then digitizes it for a microcontroller.

Support biomimetics. It’s improving the world in countless ways. Let’s rid the world once and for all of scientifically useless Darwinian storytelling, with all its evil baggage. The science of the future is here by imitating nature’s superlative designs.

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DNA Is the Future of Data Storage

Do you like futuristic thinking? Think ahead to when mankind’s memory may revert to something ancient: DNA.

Today’s server farms will become as obsolete as core memory at the rate data are growing in the information age. Jeremy de Groot thinks that the libraries of the future will be made of DNA. The old old will be the new new.

In his piece on *The Conversation*, this lecturer at the University of Manchester explains the problem and considers the options.¹

As a species, we are producing information at a massive rate. The “reading” of the mass of data has led to new predictive models for social interaction. Businesses and governments are scrambling to make use of this data as **human beings seem ever more readable, manageable and – possibly – controllable** through the comprehension and manipulation of information.

But just how might all this information be stored? At present, we have **physical libraries, and physical archives, and bookshelves**. The internet itself is “stored” on **hard-disk servers around the world, using enormous amounts of power** to keep them cool. Online infrastructure is **expensive, energy hungry, and vulnerable**; its longevity is also limited – see Die Hard 4.0 for a dramatisation of this.

One EMP could make all this data inaccessible and useless. Futurists are coming up with wild ideas for keeping our collective social memories intact: storing it on the moon or Mars, for instance. There is also a great need to reduce the size of data. Perhaps it could be stored on crystals or other forms of nanotechnology.

There is an attractive option that could theoretically survive thousands of years if kept in a cool, dark place: DNA. Nucleic Acid Memory (NAM) is being seriously considered for really-long-term storage that would be futureproof.

DNA is **durable and increasingly easy to produce and read**. It will keep for **thousands of years** in the right storage conditions. DNA might be stored anywhere that is dark, dry, cold, and arguably **would not take up a great deal of room**.

Much of this technology is in its infancy, but developments in nanotechnology and DNA sequencing suggest that we will be seeing the applied results of experimentation and development **within years**.

Others have estimated that the entire internet could be stored in a shoebox. With all these benefits inspiring engineers, look for computers with DNA as their IO option. And help pass laws to keep your private information away from the controllers.

God had it right from the beginning. You can store 10¹⁸ bits in a cubic millimeter of DNA. That’s enough data to write on a stack of DVDs 6 miles high. God even thought of an extra technology humans would do well to emulate: molecular proofreading. Follow the leader: our Creator.

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... continued on p. 9

Biomaterial from Dinosaur Fossils: Implications and Challenges, Part 1

by Kevin Andersen, PhD

In 2005 a group of researchers, led by Dr. Mary Schweitzer, reported the discovery of pliable, stretchable tissue from a *Tyrannosaurus rex* fossil (Schweitzer et al., 2005). Within this tissue they observed osteocytes, which are common cells found inside the matrix of bone. Even more surprising, they detected fragments of collagen (a common animal protein). Additional support for this discovery soon followed (Asara et al., 2007; Schweitzer et al., 2007).

However, the presence of tissue and protein fragments remaining in dinosaur fossils poses a direct biochemical challenge to the standard geologic dating paradigm. If dinosaur fossils are at least 65 million years old, how has any biological material survived? How could these bones not yet be fully fossilized even after millions of years? These questions raise significant issues about contemporary fossil dating methods.

Not surprisingly, these initial tissue discoveries were met with strong skepticism in the scientific community. Some critics suggested that the biomaterial was from a bird carcass that had become mixed with the fossil (Bern et al., 2009), or that the sample or equipment had been contaminated before or during handling in the laboratory (Bern et al., 2009). Others suggested that what was really being detected was a microbial biofilm (Kaye, et al., 2008). While there was little evidence for any of these claims (Anderson, 2015; Schweitzer et al., 2013; Schweitzer et al., 2016), they reveal an eagerness to dismiss the material as anything other than actual dinosaur tissue (Anderson, 2017; Thomas, 2015).

Continued doubt

Recently, a group of researchers still challenged the discovery of dinosaur collagen (Buckley et al., 2017). They stated that these claims primarily rely upon detection of a

single short peptide sequence that has been assumed to be unique to dinosaur. They argue that ostrich collagen also contains this sequence, suggesting previous reports may have mistaken contaminating ostrich collagen for original dinosaur protein.

However, this criticism was soon countered by the detection of additional collagen fragments from fossils of a duckbill dinosaur (Schroeter et al., 2017). Ostrich collagen contamination could not account for all the sequences of these additional fragments. Plus, current technology has allowed spectrometric detection of collagen within a

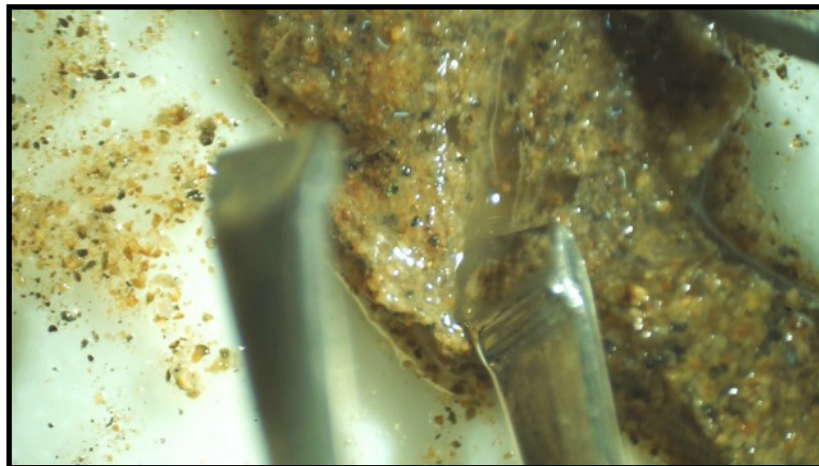


FIGURE 1. Image of a portion of pliable tissue removed from a *Thescelosaurus* vertebra. Note the tweezers stretching the tissue. (Image courtesy of the Glendive Dinosaur and Fossil Museum and the Creation Research Society.)

supposed 195-million-year-old reptile fossil without the need for any potentially contaminating extraction procedures (Lee et al., 2017). These recent studies further confirm that the collagen is from the fossil and not the result of contamination.

What is more, studies have found tissue and cells in several dinosaur and other “prehistoric” reptile fossils (Armitage and Anderson, 2013; Schweitzer et al., 2009; Schweitzer et al., 2013; Surmik et al., 2016). In addition to collagen, fragments of other proteins, such as actin, tubulin, and myosin have also been found (San Antonio et al., 2011; Schweitzer et al., 2013). Detection of these additional proteins helps confirm the authenticity of the dinosaur tissue. The research efforts of the Creation Research So-

ciety’s iDINO project resulted in the discovery of large sheets of pliable tissue that were still retained in a *Triceratops* horn (Armitage and Anderson, 2013) and in a *Thescelosaurus* vertebra (Anderson, 2017). In fact, the presence of tissue and proteins is now recognized as a “common phenomenon” in dinosaur fossils (Bertazzo et al., 2015).

As further evidence, blood vessels were carefully isolated from the femur of a duckbill dinosaur (Cleland et al., 2015). These vessels retained many physical characteristics of living animal blood vessels—pliable, translucent, and reacting to immunological-based stains. The extracted vessels also contained fragments of an array of proteins which are consistent with those present in blood vessels (Cleland et al., 2015).

Interestingly, despite this large body of evidence, there continues to be a pattern of denial within the evolutionist community. Brian Switek did not even include dinosaur tissue in his 2014 *Smithsonian Magazine* list of unsolved dinosaur mysteries (Switek, 2014). As of 2015, Carnegie Museum of Natural History (Pittsburgh, PA) still claimed that there are “no original organic parts preserved” in fossils (Thomas, 2015). A *PLoS ONE* article chastises creationists for discussing dinosaur soft-tissue because claims of such tissue have supposedly been refuted (Nieminen et al., 2015). The popular atheist website, Rationalwiki, states that claims of dinosaur tissue have “since been shown to be mistaken” (Rationalwiki.com). Add to this list all the self-appointed defenders of evolution posting commentary around the internet, scoffing that only ignorant creationists would think that a dinosaur fossil could still contain tissue, cells, and proteins.

Presumably, such denials attempt to downplay the implications of the dinosaur tissue. Perhaps this should not be too sur-

prising. The presence of this tissue is certainly difficult to account for within the evolutionary timescale.

Immortal protein?

Biological molecules vary in their resistance to chemical degradation. Proteins are typically among the least resistant biomolecules (Briggs and Summons, 2014). Although in a laboratory setting, a select group of proteins, such as collagen, can be fairly stable, collagen nonetheless still degrades, albeit at a much slower rate than most other proteins.

No experimental evidence suggests that collagen will survive for over 60 million years, let alone over 200 million years (Anderson, 2017). In fact, experimental decay studies show an upper survival limit for bone collagen of about one million years, even under ideal conditions (Buckley et al., 2008; Buckley and Collins, 2011). This is certainly not trivial, as fossils are never located in ideal conditions. Yet, detection of collagen has been reported not only in an alleged 85-million-year-old dinosaur fossil (Schroeter et al., 2017), but also in bones of a supposed 247-million-year-old reptile (Surmik et al., 2016). Thus, the conflict with the standard assigned ages of dinosaur fossils is obvious.

Dr. Fazale Rana counters this biochemical evidence by questioning the validity of these degradation studies. He argues that because the researchers measured degradation rates at high temperatures, this introduced irregularities into the results (Rana, 2016). Since high temperatures will accelerate protein degradation, Rana concludes

that these studies cannot be applied to decay rates in cooler, subsurface environments.

Unfortunately, this reasoning offers a misunderstanding of thermal kinetic studies. High temperatures (e.g., 90°C) are often used in decay experiments to accelerate protein degradation. At lower temperatures the degradation will be considerably slower, potentially extending the length of the experiment by months or even years. As long as the protein decay rate fits a first- or second-order reaction curve (Collins et al., 1995; Millward and Bates, 1981), the Arr-

No experimental evidence suggests that collagen will survive for over 60 million years, let alone over 200 million years...

henius equation can be used to convert decay rates measured at different temperatures. Thus, studies at high temperatures can be used to predict the decay rates at lower temperatures. This is a common practice in protein biochemistry.

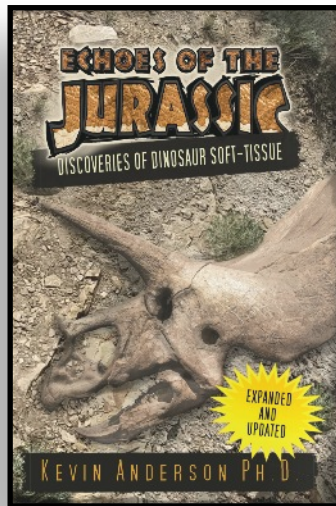
Dr. Rana (2016) suggests that high temperatures may unpredictably alter how collagen molecules will degrade, which prevents the Arrhenius equation from properly predicting decay rates at lower temperatures. However, this is simply speculation. For Rana to seriously challenge the accuracy of these studies, he must offer experimental evidence that high temperatures are an exception to the parameters of the equation; i.e., he must show that high temperature

measurements will not fit predicted reaction curves. He must demonstrate that decades of experiments verifying the temperature dependence for chemical reactions is wrong. In other words, he must offer far more than just conjecture.

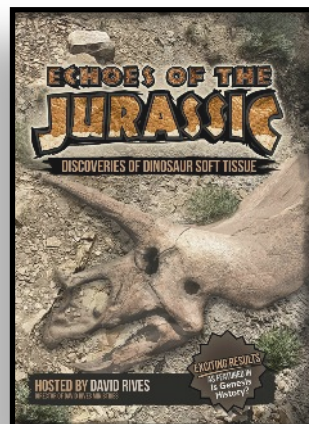
In response to my challenge, Dr. Rana claims that a 1972 study (McClain and Wiley, 1972) supports his position (Rana, 2017). He concludes that this study shows collagen's denaturation temperature is well below the high temperatures used in degradation experiments. He suggests that denaturation will initially unravel collagen's triple helix, which will then cause the protein's structure to change. Rana speculates that this high temperature structure degrades faster than will collagen's lower temperature structure. He concludes that the Arrhenius equation fails to adequately account for this situation (Rana, 2017).

However, this 1972 study does not provide much experimental support for Rana's conclusions. The work does show that the denaturation temperature for some forms of collagen is lower than the temperatures typically used for degradation experiments. However, the study did not determine the actual rate of collagen degradation at any temperature.

Temperatures above collagen's denaturation point may or may not cause degradation to differ from mathematical predictions. There are no current, direct data to support Dr. Rana's conclusion. He simply assumes that the degradation rate at lower temperatures will be slower than that predicted by the equation—considerably slower.



Book
(updated and expanded)



DVD

Echoes of the Jurassic

Explore the evidence showing that the dinosaur tissue is authentic, and examine the arguments that attempt, unsuccessfully, to explain how tissue and proteins could be preserved for millions of years.

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Plus, different forms of collagen denature at different temperatures (Collins et al., 1995). The 1972 study, cited by Rana, used muscle and skin collagen for its analysis. Collagen found in dinosaur fossils is bone collagen (i.e., mineralized collagen), which is more stable at high temperatures and has a far higher denaturation temperature than does skin and muscle collagen (Collins et al., 1995). Therefore, it is unlikely that results from the 1972 study really apply to bone collagen; thus, neither do Dr. Rana's conclusions. On the other hand, bone collagen was used for degradation studies that show collagen survival is far less than 65 million years (Buckley and Collins, 2011; Wadsworth and Buckley, 2014). Collagen is hardly immortal.

Not just collagen

The intense focus on the degradative resistance of collagen has apparently caused many scientists to forget all the other proteins that have been detected in dinosaur fossils (Cleland et al., 2015). Several of these proteins (e.g., hemoglobin, myosin, actin, and tropomyosin) are not nearly as structurally "tough" as is collagen. There is no experimental evidence that fragments of any of these other proteins could survive for more than just a fraction of the time that collagen could survive.

Schweitzer and co-workers attempt to address the persistence of these other proteins by suggesting that certain interactions may help stabilize proteins after cell death (Schweitzer et al., 2013). For example, they speculate that actin may be stabilized by an interaction of actin with α -actinin and fimbrin. However, this idea is strictly conjecture. There is little experimental support that such an interaction would provide stability for millions of years. These researchers offer some studies of cell apoptosis as support for their hypothesis (Schweitzer et al., 2013), but such studies have not provided consistent results regarding actin's degradation (e.g., Kayalar et al., 1996, gives different results than does the work by Song et al., 1997). Plus, apoptosis is a specialized cell-activated process that does not necessarily involve the same autolytic destruction events that will occur postmortem.

In fact, degradation studies would suggest that several of these other proteins degrade fairly rapidly postmortem (Lametsch et al., 2002; Lametsch et al., 2003; Wang et al., 2011). Some of these proteins also have high turnover rates in the cell (McGrath et al., 1998; Seene and Alev, 1991; Theriot, 1997), further indicating they

are not highly resistant to degradation. Even if some researchers think there is a biochemical basis for the extensive survival of collagen fragments, this cannot be said about these other proteins.

Part 2 in this series will discuss various attempts by evolutionists to explain how tissues, proteins, etc. were preserved in dinosaur fossils. This discussion will include a specific critique of some of the more popular proposals for preservation. In addition, the consistency of these discoveries with biblical creation will be emphasized.

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Speaking of Science ...continued from page 5

Darwinian Explanations Are Religious

A theory that explains opposite things with equal ease is indistinguishable from magic.

Why don't turtles still have tail spikes? Researchers explain why tail weaponry is rare. (*ScienceDaily*).¹ If ankylosaurs have tail spikes, evolution did it. If turtles do NOT have tail spikes, evolution did it. There must be a market for this kind of just-so story. Maybe it gives the unthinking a sense of awe at the wisdom of wizards. “This study is an **elegant example** of how the fossil record can be used to **better understand the world** around us today,” the shaman says in self-congratulation. Ooo. Ahhh.



Progenitors of the living world. (*ScienceDaily*).² Behold, “the earth was without form and void” – before the emergence of life.” Mocking Genesis, a Wizard of OOL (origin of life) in Germany looks into his crystal flask and sees visions of molecules joining up. The ‘scenario’ looks ‘plausible’ to him.

Under what conditions could these building blocks have then been linked into long chains that could not only **encode information** but also **propagate** it by self-reproduction? Many **possible scenarios** have been proposed for the phase of **chemical evolution** that preceded the **emergence** of the first biological **cells**. Now, researchers led by LMU chemist Professor Thomas Carell have extended these models by demonstrating a **plausible route** for the prebiotic synthesis of the ‘nucleosides’ that constitute the **informational components** of RNA.

Well obviously, letters want to form words. And words want to form sentences. And sentences want to form books. Why? The force of ‘emergence’ endows them with will and creative genius. Believe!

Ingredients for Life Revealed in Meteorites That Fell to Earth. (*Berkeley Lab*).³ Asteroid pieces smash together and fall by a basketball court. Behold, they have organic matter! They have some amino acids, hydrocarbons, and even water! They must be trying to get life to emerge. “**Everything leads to the conclusion** that the origin of life is really **possible** elsewhere,”

announces Queenie Chan, the chief female wizard. It’s plausible, isn’t it? Believe!

The more I read secular science reports, the more appalled I become at the easy-believism of the evolutionists. If something seems plausible to them, it’s good enough. It’s appalling how ignorant they are of the history of theology, the history of philosophy, and the philosophy of science. It’s as if Darwin just swept that all away and replaced it with a nice, cute, simple story that keeps them employed as shamans.

Since the evolutionists usurped all power over education, they fear no hard questions or criticisms from anyone who disagrees (after all, that would be [cue hissing sound] *religiousssss*). Journalists and students, hoodwinked by decades of this new scenario as the only story in town, acquiesce and swallow it whole, like quiet, compliant parishioners enjoying sermons faithful to the orthodox creed of the Cult of Emergence.

All the evolutionist wizards did was replace one religion with another—not a new one, but an old one—Pantheism.

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Animals Don't Respect Darwin

Living things owe no obligation to Darwin. They will break his laws with reckless abandon.

Is it a law of nature if there are more exceptions than rules? Evolutionists since Darwin took his bait and ran with it, inventing corollaries to his ‘law’ of natural selection and making predictions. Animals aren’t listening. They have laws of their own.

Study shows treeshrews break evolutionary ‘rules.’

(*Phys.org*).¹ The treeshrews of southeast Asia never heard of Bergmann’s rule, and don’t care to. Neither do they care about the evolutionary ‘island rule’ that predicts how animal sizes will evolve



on islands. Here's what these evolutionary rules predict:

The island rule predicts that populations of small mammals **evolve larger body size on islands** than on the mainland, **whereas island-bound large mammals evolve smaller body size** than their mainland counterparts. Bergmann's rule holds that **populations of a species in colder climates**—generally located at higher latitudes—**have larger body sizes** than populations in warmer climates, which are usually at lower latitudes.

So what did researchers find out about treeshrews? Looking at 260 specimens collected on offshore islands near the Malay Peninsula over 120 years, they found the animals breaking the law:

They found that **the island rule and Bergmann's rule**, which are rarely tested together, **do not apply to common treeshrews**.

The study revealed **no size difference** between mainland and island populations. It also revealed that **treeshrews invert Bergmann's rule**: individuals from lower latitudes tended to be larger than those located at higher latitudes.

And yet the researchers still believe that their work is critical for “understanding underlying mechanisms of evolutionary patterns.”

The locomotion of hominins in the Pleistocene was just as efficient as that of current humans. (*Science Daily*).² Who could forget the iconic “march of man” from the apes? An evolutionary prediction seems to jump out of the sequence: locomotion should be getting better as primates evolve. Not. They walked just fine, this study finds.

Traditionally, it was **thought** that the leaner skeletons of modern humans reflected **biomechanical advantages** which made locomotion a more efficient activity. The slimmer pelvis of our species entails greater difficulty for childbirth, but it reduces the force the abductor muscles of the hip have to exert to maintain the stability of the pelvis while walking.

Nevertheless, as Marco Vidal Cordasco, lead author of this article, entitled Energetic cost of walking in fossil hominins, explains: “That doesn't imply that the hominins with wider pelvises expend more energy walking. **In fact, the results obtained show that wider pelvises, at the height of the iliac crest, allow the energy cost of locomotion to be significantly lower.**”

Is the iconic march heading the wrong way? The lesson seems to be that we would be better off doing the hominin walk.

A classic Darwinian ecological hypothesis holds up — with a twist. (*Science Daily*).³ This headline needs translation from “Darwinese,” which tends to make Darwin look good. A better translation might be, “A twist on a classic Darwinian ecological hypothesis turns it sideways.” The leading paragraphs also need translation:

New University of Colorado Boulder-led research shows that **a long-held hypothesis** about the factors that govern species ranges **largely holds true**, but may be the result of a **previously underappreciated ecological mechanism**.

The **prediction**, first iterated by **Charles Darwin** in 1859, holds that **climate factors will limit species expansion** in more stressful environments (such as cold or dry regions), but that **interactions with other species, like competition and pollination, will limit a species range in less stressful**

environments, where the climate is more temperate.

It's a prediction fluid enough to be confirmed by anything, and that's what the researchers at the University of Colorado at Boulder found: “there is **a nuance to the commonly held model**,” which means that the model is flawed. The research leader says, “**Darwin and others have said** that what drives this pattern is [not] gradients in density or diversity of interacting species, **but instead** it seems to be effects of stress on growth, survival, reproduction and germination of the plant species.” If you look at the reported results, Darwin's prediction works, except when it doesn't. Quick! Distract the reader with talk of climate change!

Natural selection is flexible enough to absorb any blow to the Darwinian web of belief. No matter the anomaly, Darwinism always survives the blows. The Darwinians never lose faith. They just say that the latest research helps increase their “understanding” of evolutionary processes. We ought to ask whether they understand anything. Remember the fallacy of confirmation bias? That, too, works—except when it doesn't.

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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.

Lines of Evidence Supporting Biblical Predictions Concerning Extra-terrestrial Life

The idea that there may be life on other planets has been debated for centuries, and a brief history of this debate is recounted in the Spring 2017 issue of the *Creation Research Society Quarterly* (CRSQ) article by Danny Faulkner. Both Christians and evolutionists have tackled this question of extra-terrestrial life, with mixed conclusions.

Generally speaking, most evolutionists believe that life should exist elsewhere, and might even be common. After all, if life arose on earth, it should have arisen elsewhere by the same naturalistic processes. The biblical view is that life was created by God, and it could only exist on other planets if God chose to create it there. The Bible doesn't mention God's creating life elsewhere, and some theological problems with the idea are discussed.

So, if evolutionists would generally predict that life exists elsewhere in the universe, and biblical creationists predict that it is unique to earth (Isaiah 45:18), is there any evidence that supports either of these predictions? Indeed there is, and that comprises the remainder of this interesting article.

In this issue Faulkner (2017) discusses three lines of evidence: the Fermi-Hart paradox, the Search for Extra-Terrestrial Intelligence (SETI) project, and extrasolar planets. He argues that all three point to the same conclusion.

Faulkner, D.R. 2017. Does extraterrestrial life exist? *CRSQ* 53:247–254.

Finding Extrasolar Planets

In a related article, Wayne Spencer (2017) discusses the search for extrasolar planets (exoplanets). This research has been largely fueled by evolutionary beliefs, including the idea that there must be intelligent life elsewhere in the universe. Yet the results of the research have challenged evolutionary ideas, especially theories about the origin of planets.

A number of methods to identify exoplanets have been developed, each with its own set of limitations and challenges. Despite these, several thousand exoplanets have been identified. One striking pattern is that many extrasolar planetary systems are so very different from our own. Planet sizes, distance from their stars, and orbits are vastly different from what is seen in our solar system. This is a major challenge to the secular view that there is nothing special about earth.

There have been changes in planet origin theories in an attempt to fit these data into the secular view, but these modifications have not resolved all of the problems. After an in-depth discussion of the evidence and problems with secular theories, Spencer (2017) concludes that the evidence is far more consistent with a biblical view that exoplanets were created on day 4 along with the other heavenly bodies.

Spencer, W. 2017. The challenges of extrasolar planets. *CRSQ* 53:272–285.

Tidal Forces and the Origin of Our Solar System

One phenomenon of interest when considering the origin of a solar system is the nature and effect of tidal forces. It is well known that gravitational force is a function of distance. When very large bodies are involved (e.g., a planet and its satellite), the gravitational force on the near side of the body is greater than that on the far side, and this produces a tidal force.

In this issue of the *CRSQ*, Craig Davis looks at direct and indirect tidal forces. Included in the discussion are the tidal acceleration effect, which pushes our moon further away from the earth; the tidal deceleration effect, which pulls the Martian satellite Phobos closer to Mars; and tidal locking, which tends to lock one face of a satellite to its planet.

In addition to discussing the effects of tidal forces, Davis goes a step further to discuss the problems they create in an old-solar-system model. Further, he points out that a young-solar-system model needs to assume that our moon (and similar satellites) was created tidally locked, and that orbits were close to being circular, as we see them today. This is because there has not been enough time for tidal forces to bring them into this configuration.

Davis, C. 2017. Tidal forces in the solar system. *CRSQ* 53:255–271.

*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.



All by Design

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

Fibonacci – A Sunflower Example

On page 2 of this issue, Dr. Don DeYoung discusses the series of numbers known as the Fibonacci sequence, and the “golden mean or ratio.” Citing several examples, he notes that the frequency with which the sequence can be seen in the world around us serves as a reminder that mathematics is indeed the language of creation (DeYoung and Wolfrom, 2017).

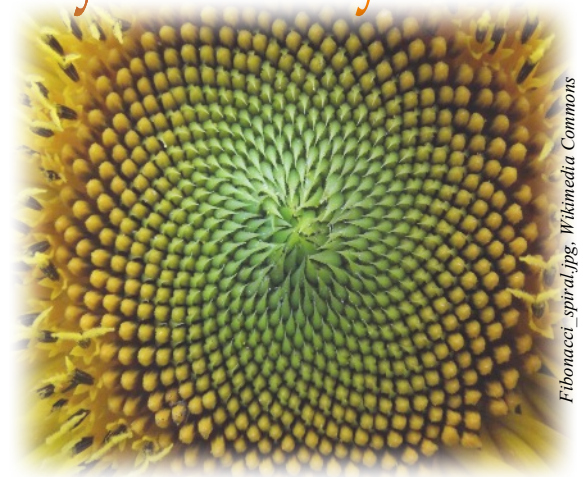
The next time you see a sunflower, pay particular attention to the pattern of the seeds. What you notice might amaze you. It turns out that, at least in most cases, the arrangement of seeds within a sunflower follows this precise mathematical model.

Sunflower seeds are not arranged randomly; they occur in very specific, concentric, double spirals that wind in opposite directions, starting at the center of the flower and curving out towards the petals. Each sunflower seed is oriented at 137.5 degrees (the smaller of the resulting angles when a circle is divided into two arcs whose ratio is the “golden mean”) from its adjacent

seeds. This precise configuration, and no other, allows the most optimal filling of available space with seeds. With seeds arranged thusly, two groups of spirals may be seen within the alignment of the seeds, spiraling in opposite directions (see photo*). Counting the numbers of both clockwise and counter-clockwise spirals, you will almost always find them to be characterized by a pair of numbers from the Fibonacci sequence, such as 34/55, or 55/89, and occasionally 89/144 with larger specimens.

As Dr. DeYoung explained, this same mathematical arrangement may be found most anywhere, from the hexagonal fruits in pineapples to the scales of female pine cones. The mathematical precision found in so many areas of nature suggests a deliberate, planned creation rather than randomness and chaos.

*In the photo, the number of counter-clockwise spirals is 34, and the number of clockwise spirals is 55.



Fibonacci_spiral.jpg, Wikimedia Commons

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