



Talking Faith & Fossils

Creation Weekend 2021's on-line conference with paleontologist Dr. Marcus Ross was so dynamic and interesting that it seemed as if we had heard him in person. I found myself thinking about his return trip to Virginia. But, of course, he never left Virginia. Nevertheless, with the wonders of technology, Dr. Ross was able to present two excellent and very different topics. Since his field of expertise is fossils, his whole first presentation dealt with fossils, specifically some scary marine reptiles called mosasaurs. The second talk dealt with the objectives of creationists in their pursuit of science.

by
Margaret
Helder

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Spiders A Marvelously Designed Friend of Humans

The ubiquitous spiders are the unsung friends of humans. Although spiders are widely feared, very few species are dangerous to people. Spiders bite humans only in self-defense, and unless you are allergic to the venom, few spider bites cause stinging worse than a mosquito

a herbivore, the rest are carnivores. An estimated up-to-800-million tons of insect prey are annually consumed by the spider community, reducing the need for dangerous pesticides (Nyffeler and Birkhofer, 2017).

In my medical school Scanning Electron Microscopy (SEM) class, one of the creatures I examined was a spider. Its design absolutely amazed me. Spiders are the largest order of arachnids with 48,000 species that display a truly amazing variety. The smallest, the Patu digua, are smaller than a grain of sand. The largest and heaviest spiders, the tarantulas, have a body up to 90 mm (3.5 in) long and leg spans up to 250 mm (9.8 in). Their colors vary from the white *Argiope* to the black widow spider, and most every color in between including green to camouflage themselves. Many are multicolored. There are fishing spiders that catch insects near water, jumping spiders that jump to catch their prey, and hundreds of other kinds.

Mating

Mating season finds male spiders fighting until one gives up and the winner gets the female, which lives over twice as long as the male, up to 30



Michael Willinger from Pexels



Swarup Bhovrnk from Pexels

bite or even a bee-sting (Vetter, 2008). Spiders feed on our most-common indoor pests, including roaches, mosquitoes, flies, and moths. Only one type is

years! Males find females by picking up pheromones she uses to coat her web. After mating, the female lays her eggs on a newly spun silk sheet. Some spiders can lay as many as 2,000 eggs. When they hatch the spiderlings may chew their way out of the egg sac, which at times requires the mother's help. Their offspring look like miniature adults most of which soon wander off to fend for themselves. Depending on the breed, some mothers feed their young with a form of milk. Others may carry their offspring around for a few days to allow them to

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Always use
the offered help!

The Bible tells us that Moses was instructed in all the wisdom of the Egyptians. He used this training when he was called upon, later in life, to lead the Children of Israel through the desert and to write an account of their history. Obviously, Moses did not adopt the pagan philosophy in which his training in Egypt was couched. He evaluated what he heard.

In similar fashion, young Christians are encouraged to pursue modern learning, according to the talents with which they have been given. Like Moses too, they are expected to evaluate the modern explanations. In the light of the complexity of many modern disciplines however, it is obvious that students need help. They need trusted advisors to help them sort through the onslaught of information.

To this end, Creation Science Association's Margaret Helder has developed a novel tool to assist students embarking on new courses in biology. Since much of the material taught in these courses is based on studies conducted since the year 2000, there are many new terms and concepts involved. All of them are defined in terms of evolutionary assumptions. The definitions available, on-line, all come from an evolutionary agenda. But the data themselves actually support creation!

Dr. Helder has therefore written definitions and discussions of the significance of about 150 biological terms. Each student is encouraged to find out what each

term means to biology and to creation in particular.

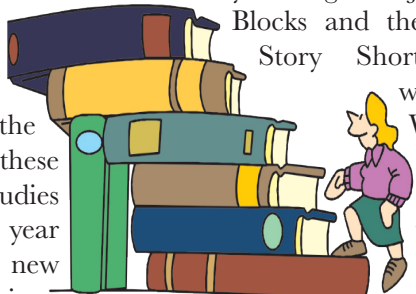
This document will be posted on-line with a search-engine and print button. Alternatively, one could obtain an overview of the issues by reading the chapters straight through. Chapter one deals with issues of origins in general, chapter two with cell biology, and chapter three with biology of whole organisms.

So, when a teacher informs a class that "DNA sequences prove evolution" or that a "molecular clock" demonstrates the ancient origin of a certain group of organisms, the student can consult the *Headstart* document for these terms. The discussion will also point them to other related discussions and relevant sources. Thus, the student continues his/her studies better informed about the issues and appreciative of the wonders of the Creation. There is always something interesting that the textbooks don't tell you.

This new work also provides links to other major sources of information. For example, for those who find organic chemistry to their liking, there is a great 13-part video series by world class synthetic chemist James Tour who shows how bankrupt are chemical origin of life theories. Google Youtube James Tour Abiogenesis for links to these presentations on-line. For those who desire something shorter (10 minutes) and more fun, you might enjoy The Basic Building Blocks and the Origin of Life (Long Story Short). See youtube.com/watch?v=MFtnwriQRi8/ We also recommend the john1010project.com/first-life.html (11 minutes)

One thing that many students discover during their studies, is that it is always a good idea to make use of offered help from instructors. There is always something provided which gives one a *Headstart* on the topic. Enjoy! (Coming soon to CSAA's website.)

Headstart: High School Biology and Beyond: What the Inquiring Student Needs to Know



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Darwin's Tree of Life – mere culture and convenience

There is no doubt that we are drawn to organization that involves hierarchy. Carl Linnaeus (1707-1778) famously devised a scheme for plant classification according to their reproductive characteristics. He established the idea of grouping organisms into a hierarchy of progressively shared traits. In his *Systema naturae* (1735) Linnaeus decreed that this logical organization of living things should involve increasingly larger categories. Thus, all similar individuals would be members of a species, similar species could be lumped into a genus. Similar genera were clumped into a family, similar families into an order, similar orders into a class, similar classes into a phylum or division. These groups were supposed to be exclusive. An organism was supposed to be a member of only one group. In Linnaeus' view, this logical arrangement of organisms reflected God's character and wisdom.

But all that changed with Darwin. He suggested that a spontaneous process of development had occurred that resulted in diversification of organisms from a single life form into all the creatures we see today. Darwin's tree of life would have developed from descent with modification or evolution from a common ancestor.

As the era of molecular biology arrived, biologists had great hopes that trees based on chemical compounds would match those calculated from physical characteristics. However bad news soon followed. Some scientists even came to the conclusion that "Molecular phylogeneticists [specialists] will have failed to find the 'true tree' not because their methods are inadequate or because they have chosen the wrong genes, but because the history of life cannot be represented as a tree."¹

As a result of this situation, scientists have developed new explanations for the failure of different molecules inside a group of organisms, to suggest the same tree of life. They now suggest that some genes have been transferred from one set of organisms into other unrelated organisms. This popular explanation is now termed horizontal gene transfer or HGT.

Assumptions about horizontal gene transfer have greatly complicated any conclusions about descent with modification (evolution) and have drastically resulted in very different organisms being clumped together. Thus, new plots of

relationships often look very different from former popular drafts of the tree of life.

A recent essay entitled: "The Past, present and future tree of life" by Cedric Blais and John M. Archibald, demonstrates why the tree of life concept is in serious trouble²: "The issues are not merely empirical but also pragmatic, hinging on what scientists value, what they research and the tools they need. Data alone cannot resolve such a debate – a fact that provides an opportunity to rethink our objects of study and methods, and to experiment with new possibilities. We must not ask which is the truer picture of evolution – trees or networks – but rather what is it that we are trying to picture in the first place, and why."³

They suggest the issue is pragmatic, not a search for truth.

What conclusions do the scientists feel confident about? Some specialists think they may be able to distinguish a "statistical tree of life" which does not represent any specific past history. "The continued use of the tree of life for classification is thus as much a reflection of its practical convenience and historical and cultural inertia as it is a commitment to natural

classification."⁴ The authors are skeptical of the reality of the tree of life because "much of the evidence for ancient relationships is inconclusive at best."⁵ The tree of life may not be evident from the data, but in a pragmatic sense it "is still a source of insight into evolutionary history."⁶ Evidently there is no clear evidence for an evolutionary tree of life. But scientists like the idea anyway for its evolutionary implications!

Perhaps it is time that Darwin's "tree of life" is recognized for what it is, an idea that was based on wishful thinking. That is not good enough for a supposed scientific explanation for the relationships of all life forms. Many Christians, on the other hand, see the logical relationships of organism characteristics as reflecting the sovereign purposes of God. The reason we can separate life forms into hierarchical organization is because God demonstrates his wisdom and logical character by designing life this way.

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1. W. Ford Doolittle. 1999. *Science* 284: p. 2124-2128. See p. 2124.
2. Cedric Blais and John M. Archibald. 2021. *Current Biology* 31, R314-R321, April 12.
3. p. R314. Emphasis mine.
4. p. R318. Emphasis mine.
5. p. R319.
6. p. R319.

by
Moxie



Spiders

A Marvelously Designed Friend of Humans

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mature before they venture out on their own.

The So-Called Primitive Spider is Actually Very Advanced

Spiders have no ears but its body is covered with hairs that can sense touch and even vibrations to the degree that they can sense a flying insect traveling in the air above them. Or it can taste by walking on various surfaces and allowing their feet to determine what is below. Its senses are so fine-tuned that it can pick up vibrations of an insect trapped in its web. It then knows it may need to wrap the prey in silk to preserve it until it is hungry. Spiders eat one or two large insects a week, more or less, depending on how much food is available and how hungry they are. If more food is available, they often eat more, if less, they adjust accordingly. Their smell and taste memory are so accurate that they can recognize their own silk which is to them easily distinguishable from that of other spiders (Brunetta and Craig, 2010).

Spider Eyes

One example of very advanced systems belonging to a so-called primitive creature is spider eyes. Most spiders have eight eyes, four pairs on the head's top-front, arranged in patterns to enable them to concurrently see in several directions (Hamilton, 1986). Most arthropods can only detect the light's direction by using a shadow cast on the walls of its eye cup. Arachnids are the only group of arthropods in which the main sight organs are cam-

era-type eyes like humans, rather than simple compound eyes like most insects.

Each spider's eye has a single lens like those of humans which are capable of forming images (Land, 1985). Their secondary eyes detect light *reflected* from the *tapetum lucidum* (a layer of cells behind the retina), which reflects visible light back to the retina, giving them superior night vision. Their *tapetum lucidum* also strongly plane-polarizes reflected light like polarizing sunglasses. The *tapetum lucidum* is what causes cats' eyes to glow

brightly when light is shone on them.

The Feared Tarantula

One of the most infamous spiders is the tarantula, a large "hairy" spider, common in horror films, but which is actually a shy creature whose bites are relatively harmless unless you are allergic to their venom (Williams and Goette, 1997, pp. 3-4). They are kept as pets, and usually only bite if they are threatened. They are very solitary animals and, like goldfish, are creatures to watch, not play with like a dog (Foelix, 1982, pp. 45-46). About the only exception is during mating when they can be very aggressive (Williams and Goette, 1997).

Evolution of Spinnerets

The most well-known aspects of spiders are the incredible webs that most of them, but not all, spin. Spider silk is produced in their silk glands that open from spigots located on their spinnerets on their posterior (Donovan, 1994). Spinnerets secrete a liquid that is exuded, which then hardens on contact with the cool air. Many varieties of silk exist—the female garden-cross spider alone can produce at least seven different types of silk (Vollrath, 1992). Spider silk is as strong as steel, yet it can stretch as much as twice its length (Bishop, 2007, p. 20). It also serves as food if the spider is hungry enough.

The proteinaceous silk is effectively preserved in the fossil record—threads of spider silk Darwin-date back to mid-Tertiary, and one spider web is claimed to date from the Eocene (Coddington, 1992). The fossil record traces spinnerets that Darwin-date all the way back to the Devonian and Carboniferous (Donovan, 1994, p. 211). A single web can use as much as 100 feet of silk thread, making it more likely to be preserved.

The earliest known spiders had a "nearly complete spinneret whose structure is very advanced" (Preston-Mafham, 1991, p. 13). The evolution of the spider silk glands and spinnerets necessary for making webs are explained by assuming that 180 million years ago spider silk was simply "excretory material deposited behind as the spider ran" (Kaston, 1966, p. 27). From this stage the silk evolved into a dragline, next into a trip wire and, finally, it formed a spider web. Another theory of spider-web evolution is that ancestral spiders used alpha keratin (a

component of spider threads) to cover their eggs (Vollrath, 1992). Problems with both of these just-so stories include explaining how the spider survived until the spinneret and silk material formula was fully evolved, and the fact that the spinneret silk-producing organ is both irreducibly complex and an organ system separate from the anus.

Once the silk glands evolved, the brain program to produce a web must have simultaneously evolved—the silk is useless to capture food until the spider has the ability to construct a functional web, which requires a complex brain program to direct its construction (Williams, 1992, pp. 88-89). Furthermore, so-called "primitive" webs are not structurally simpler or less complex than so-called "advanced" webs" (Williams, 1988, p. 123).

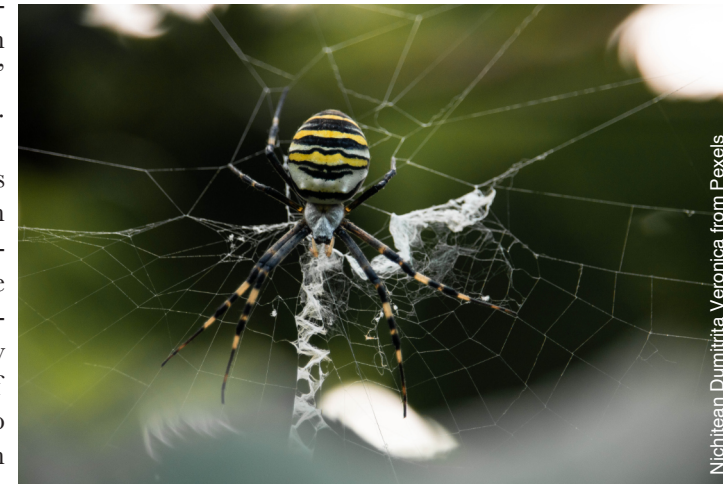
The known evidence is that the earliest known spinnerets were fully developed, and no evidence exists of spinneret evolution—the theory that they evolved from a pair of legs, a common just-so story is not supported in the fossil record (Vollrath, 1992, p. 72). Arachnida found in amber appear very modern in all respects, even including fully-developed web threads (Poinar and Poinar, 1999, pp. 75-76).

Spiders are Evolution's Worst Nightmare

Spiders are one of the best examples known that disprove evolution. And this is based on enormous evidence, including the almost 1,000 species that have been described from fossils (Dunlop, et al., 2008). Their tough arachnid exoskeleton aids in both preservation and identification. As a result, many spiders have been extremely well-preserved in the fossil record, especially in amber, and most

are readily identifiable (Selden, and Shear, 2008). Amber has effectively preserved even those arthropods that lack tough exoskeletons.

Fossil spiders are claimed to date back to the Tertiary, and some as far back as the Upper Cretaceous or earlier, have been identified from the close to 60 different families found in only one amber type (Penny, 2002; Penney, 2001, pp. 987-1009; 2002, p. 709; Schawaller, 1983; Poinar, 2000). Evolutionists date spiders back to the time when Devonian monsters swam in the seas about 400 million Darwin-years ago. More than 200 spider species have been identified in Miocene amber from the Dominican Republic alone (Penney, 2001, p. 987).



Nichitean Dumitrita Veronica from Pexels

Summary

Spiders are extraordinarily complex and well-designed for their role in helping to control the insect population. One amazing trick is, as young spiders, they can produce a long web streamer of silk which the wind catches, carrying them for a few yards or more, and sometimes as far as one hundred miles!

The large number of very ancient spiders uncovered do not document evolution, but rather stasis, meaning no change has been documented since spiders were originally created (Weygoldt, 1996). The evidence is clear, the first spider was a fully formed spider that had all of its complex equipment

required to live built-in its body from the very beginning.

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Talking Faith & Fossils

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In the Royal Tyrrell Museum’s spooky Bearpaw Sea exhibit, if you look up, you will see the skeletons of massive marine reptiles including mosasaurs. Dr. Ross actually came as a student to study Alberta mosasaurs at the Tyrrell Museum. He informed us however in his presentation that such fossils are found worldwide, especially in North America and Europe where fossil hunters have been particularly energetic.

Apparently, mosasaurs are true “lizards” in body design and classification (unlike dinosaurs which are not lizards but part of a different group called “archosaurs”). Marcus began his talk by showing us some of the range of diversity of these creatures. Scientists distinguish about 40 genera ranging in size from 3 to 17 m (10-54 ft). Some of them were opportunistic generalist predators while others were fast ambush predators or slow-moving shell crushers. Scientists can plug data sets of their features into computer programs that look for lines of descent (evolutionary tree). However, there are other computer programs that can group these genera into clusters of creatures with gaps (discontinuities) between them. Dr. Ross’ data analysis identified three clusters of mosasaurs

which could perhaps be equated with three created kinds. The animals in each group share certain features not found in the other groups.

Since mosasaurs are all extinct and known only from fossils, it seems fair to ask what might have happened to them. Apparently, the mosasaurs are all found in high rock levels which coincide with the disappearance of the dinosaurs. In the opinion of some creation scientists, this level also coincides with the peak of the worldwide flood waters or the beginning of their retreat. These rocks are given the name Maastrichtian because a particularly good example of these rocks is found at the city of Maastricht in the Netherlands. Not only are there mosasaurs found in Maastrichtian rocks at Maastricht (and elsewhere in the world), but a unique geologic marker bed just above these rocks is found at this city (and some other places such as Alberta).

As a graduate student, Marcus attended the First Mosasaur Meeting in Maastricht in May 2004. He even delivered a paper “Refining global mosasaur stratigraphy.” On this occasion, the experts toured caves carved in the chalk that had contained mosasaurs. They viewed first-hand the marker bed at the top of the Maastrichtian rocks, which was at the level of the roof in some caves. This marker bed is thought to have been deposited as a result of a catastrophic asteroid hit in the Yucatan Peninsula in Mexico.

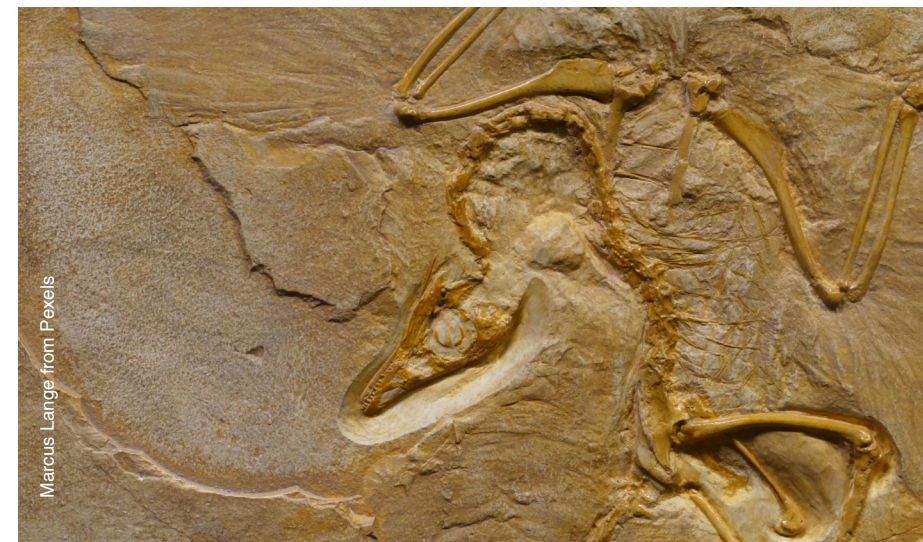
Marcus carried out analysis that demonstrated that the mosasaurs were not dying out until their final disappearance just below the marker bed. At any rate something caused the massive deposits of shelly plankton that entombed the last of the mosasaurs, some of them in postures of life such as digesting food in their gut. It is possible that the aftereffects of the Yucatan blast may have caused any remaining mosasaur populations to starve as a result of dust in the atmosphere and little sunlight to support food production. Further research on this topic is the kind of study that Christian paleontologists might want to pursue in the future.

Marcus was flooded with questions after this presentation and he answered them with enthusiasm, displaying the depth of his knowledge. He also referred to a recent poster presentation on dinosaur trackways in Washington State, that he and a colleague had made to the

by
Margaret
Helder

Geological Society of America in 2019. See <https://gsa.confex.com/gsa/2019AM/webprogram/Paper338925.html>

Marcus’ second presentation, on infinite games and creation, turned out to be just as exciting as the morning session, but totally different. His objective was to answer the question how a young earth creationist can keep on doing science when most people (even many Christians) consider that this work lacks credibility. Our speaker however declared that the above question misses the reason that creationists study nature. Thus, he remarked: “Put simply, my goal as a young earth creationist and scientist is to discover the works of God’s created world, guided by his inspired Word.”



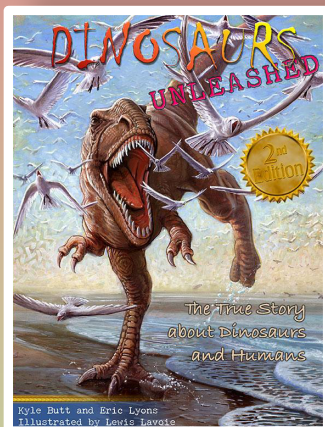
Dr. Ross couches his discussion of the objectives and methods of science (and life) on the metaphor of playing a game. There are two types of games, one kind involves competing with others with a view to defeating one’s opponents and winning the game. Such finite games are of limited duration. On the other hand, infinite games involve a player who pursues chosen objectives without reference to other players. The objective is not to defeat others but to play the game well. This process potentially continues indefinitely.

Scientists, including Christians, can play a finite game in their science, seeking to prove others wrong and themselves right. On the other hand, one could adopt an infinite game: “This journey is to discover God’s works via the materials, processes and history of nature while guided by his inspired Word.” In this context “Done properly, science exists to glorify God through excellence in the execution of one’s work. To play the game well means to continually improve and become a better player over time.”

Some might ask how the above process distinguishes the creationist scientist from others. The operative words are “discovery of God’s works through his creation and Word.” Dr. Ross points out that young earth creation’s specific claims of history are derived from a reading of Scripture that is natural, profound and theologically resonant. The account of the flood, for example, is an important organizing concept in the study of geology. In this context he provides examples from coal geology, bioturbation and particulate composition of sediments in the Grand Canyon, the results of which are overwhelmingly consistent with Scripture and the flood of Noah.

Thus, creation scientists are not unduly concerned with winning prestige and research funds (nice as these would be). Rather they seek to study nature in their various disciplines with diligence, integrity and faith. That is why they will continue to play in this infinite game of discovery. As Marcus posted at the end: *Soli deo gloria!* (Glory to God alone!) <https://henrycenter.tiu.edu/2019/06/finite-games-infinite-games-and-creation/>





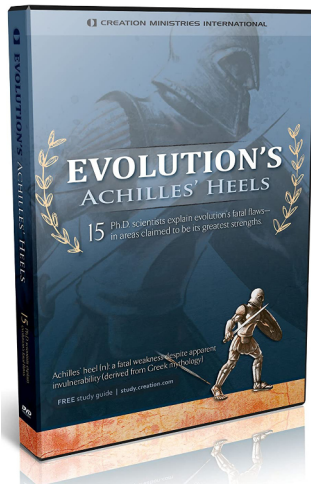
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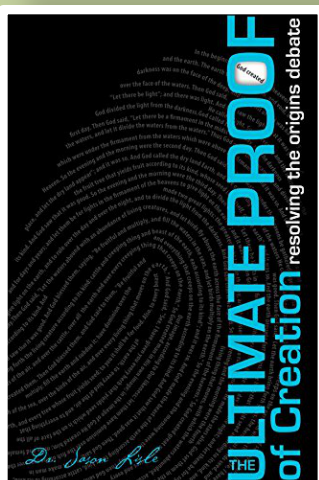
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