

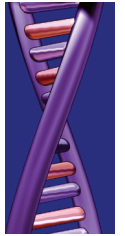
Alice in Wonderland World of Protein Folding

by
Margaret
Helder

Since the 1960s, biologists have understood that the shape of a protein is essential to its function. The molecular machines which are so important to the functioning of the living cell, are made up of precisely shaped proteins. And the shape is genetically controlled by the sequence of nucleotides in the DNA of the cell. What has concerned some sci-

entists recently however is that there are proteins with similar shapes but the controlling nucleotide sequences are very different. Could a DNA sequence change but the protein shape remain the same? This is the evolutionary explanation that some scientists are promoting.

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CREATION SCIENCE



CREATION SCIENCE
ASSOCIATION OF ALBERTA

Volume 49
Number 3
**December
2022**

Publication Mail Reg.
40013654
ISSN 0229-253X

Shining a light in the world!

Creation Weekend 2022 represented yet another experiment in our efforts to bring the presentations of featured speakers before a far-flung audience. Obviously live events are the ideal, when people can meet, share concerns, examine resources at first-

tion of Alberta elected to provide a hybrid event.

Earlier in the year, travel from the United States was very uncertain. Since our speaker, Patricia Engler, had just moved from Canada to Kentucky, she graciously agreed to make her presentations on-line. Our audience could view her on a large screen in the local church venue, Meadowlands Baptist Church, or on-line in their homes. The church had brand new audio/visual technology that worked extremely well and Answers in Genesis provided an IT specialist to make sure everything went smoothly at their end.

Everyone agreed that Patricia Engler, Youth Outreach Coordinator from Answers in Genesis, provided excellent presentations. Her arguments were understandable and inspiring, and her slides were similarly excellent. She effortlessly kept her audience engaged. At the church venue, the audience reacted as if she were present.

Growing up in a Christian family, Patricia, from a young age, exhibited concern for people plagued by modern social ills. How, she wondered, can Christians bring comfort and resolution to people impacted by alienation, violence, drugs and the like. At a home-schooling conference, the young Patricia heard Ken Ham of Answers in Genesis. He declared that society needs the gospel. For example, the rejection of Christian understanding of the created order has led to many problems that we see in society. Although she was a young teen at the time, Patricia immediately developed an interest in apologetics, which she defined as the logical defense of the Christian faith.

For more than the past two centuries, many people have focused their attacks on the gospel by attacking the foundations of the Christian worldview. Since arguments for evolution have long served as a major rationale for destroying the foundations of the gospel, Patricia realized that it would be helpful to familiarize herself with



hand, and engage the speaker in face-to-face conversation. But even on-line, the audience enjoys the speaker's message and still has the opportunity to ask questions. In these uncertain times therefore, Creation Science Associa-

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Did you know that Johannes Kepler's incredible achievements in science were influenced by his Christian faith? I learned this fact from a new book called Johannes Kepler: Exploring the Mysteries of God's Universe by Michael Stamp and Christy Hardy. This book is in the Heroes of Creation Series and it is produced by ICR (Institute for Creation Research). This title has lots of information about space discoveries made from 1560-1630, and shares about faith and God's creation.

This book is interesting for many different ages. I would suggest this book is especially good for anyone 9-12 years old. It has some more challenging words, but it also breaks things down and explains words or what something means with definitions throughout the book. Younger kids can read and enjoy this book too, but might need help from a parent or older sibling to understand the big or more difficult words and concepts. As well, older children can enjoy this book because it has lots of facts and cool topics such as optics findings that Kepler made that are important for us today, what Kepler discovered about ice crystals, Kepler's 3 laws of planetary motion and more!

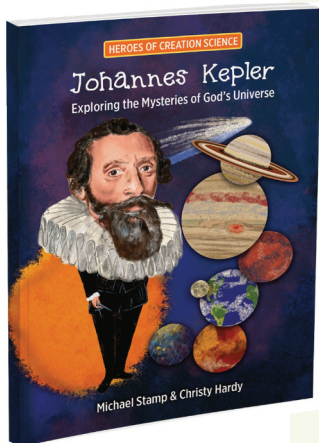
Johannes Kepler discovered many things about space. Reading this book, I learned a lot about what people used to

think compared to what they know now. Johannes Kepler is a big part of the history of learning about space. I especially enjoyed learning about the discovery of the telescope. Galileo, who discovered the telescope, lived at the same time as Kepler. Using Galileo's telescope, Kepler confirmed that blurs that had been seen near Jupiter were actually 4 moons.

This book doesn't only share some facts about space and the life of Johannes Kepler, it shares a faith perspective on space. Your children can read and learn without being confused by things the world believes. The book can help build your kids' faith as they see how God created the world and space perfectly. It was hard for scientists to believe God when people were constantly saying no, but Kepler stayed true to his faith and that's a great message.

I think you and your kids will like this book, especially if they love space or are confused on what is true or not. The book about Kepler is fun for many ages, teaches lots on space and helps to build good faith foundations.

To order this book or other books like it, go to www.create.ab.ca



Creation Science Dialogue is a quarterly publication of the Creation Science Association of Alberta (CSAA).

Its purpose is to discuss the creation model of origin in terms of scientific details.

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The problem is that even a relatively small protein can collapse into a huge number of possible shapes. It depends upon which folds come first, what the final shape is. Obviously also, it is much harder to figure out interactions in a large protein. Scientists have long sought to discover all the ways that strings of amino acids could potentially fold and they also want to know the ways in which they actually do fold. The Protein Structure Initiative was set up in 2000 to seek a complete understanding of elaborate protein folds. Some critics complained that in the first ten years, this laboratory studied mainly easier proteins of little biological significance. Thus of 5000 proteins for which folds had been mapped, only 128 were human proteins. Human proteins tend to be larger and more difficult to work with than proteins from some microbes.

Obviously, the use of supercomputing power is a must for studying protein structure. With all the complexities of three-dimensional shape in the finished protein and long chains of amino acids needing to be appropriately collapsed, it typically took a month of supercomputing time to solve one structure. Scientists at the time (about 2010) thought that we could achieve better results if we had supercomputers 1000 times faster than were then available! Fast forward to 2022.

Like many fields of science, AI (Artificial Intelligence) is causing great advances in the study of protein folding based on the genetic sequence. Up until now of course, figuring out protein folding and thus its structure, has been a formidable problem. But in July 2021, the London-based firm DeepMind, part of Alphabet (Google's parent company) made public an artificial intelligence tool called AlphaFold. This software can apparently predict the three-dimensional shape of many proteins from their genetic sequence with, for the most part, impressive accuracy. That same month in 2021, DeepMind announced that it had used the AlphaFold program to predict the structure of nearly every protein made by humans as well as proteins from several other organisms.

So far so good (and exciting!) But in any field of biology, can thoughts of evolution be far behind? Some ex-

perts pointed out that comparisons of proteins structure could be interesting in evolutionary comparisons. The scientists already had comparisons of genetic sequences in hand. So, what other information might be relevant? This is where counter-intuitive explanations come into play. The article on AlphaFold declared: "Researchers compare genetic sequences to determine how organisms and their genes are related across species. For distantly related genes, comparisons might fail to turn up evolutionary relatives because the sequences have changed so much. But by comparing proteins structures – which tend to change less rapidly than genetic sequences – researches might be able to uncover overlooked ancient relationships." [Ewan Callaway. 2022. What's Next for the AI Protein-folding Revolution. *Nature* 604: pp. 234-238. See p. 236.]

Oh really? Are they saying that there is protein structure which does not change at the same time as the controlling DNA sequence changes? This is the opposite of what scientists have concluded since the 1960s and the opposite of the premises of the AlphaFold study. In some instances, however, scientists believe that there was a common ancestor from which modern organisms descended, but the DNA sequences in the modern organisms are too different to conclude that they had a common origin. Not to worry, the article in *Nature* insists. We can compare protein shape instead. The structures may be close enough to conclude that these proteins, from separate organisms, once had a common ancestor even if the DNA sequences look different.

So, there we have it. Whether there is sequence similarity or not, scientists may still accept common ancestry based on shape of the proteins. Heads you win, tails you win!

The evolutionists are thus promoting opposite explanations for their observations of similar protein structures. Evolution then fails as an explanation. As far as we are concerned, nothing is too hard for God. He can produce

whatever shape of protein molecule He likes, using many alternative DNA sequences. The situation we see here perfectly demonstrates the power and the work of God, the Creator.



biology and arguments for evolution in order to defray attacks coming from that direction. While she studied at a secular Canadian university, she found herself in a milieu which promoted paganism, eastern religions and atheism, all roughly based on an evolutionary worldview.

As a defense against these popular secular views, Patricia clung tenaciously to the gospel message starting with a very good creation, man's fall into sin with the resulting corruption of all nature, God's judgment on the world by the Flood, the dispersal of human populations on the basis of language, the promised Messiah Christ who came to provide salvation for His people, and the future hope of glory.

The implications of this biblical worldview include respect for human life, made in the image of God. Patricia declared that if we jettison even one small aspect of the biblical foundation, the whole structure falls down. As an example of this metaphor, she showed a picture of an actual large building in which a foundational crack led to the

collapse of the whole structure. Similarly, if the Bible is wrong about cosmology, or biological origins, or anthropology or geology, or whatever, what does this do to the whole structure of the biblical worldview? If the Bible is wrong about the real world, what confidence do we have that it is right about anything? Those who believe God's word over that of fallible human interpretations, on the other hand, will not discard any part of the Genesis record.

Patricia then shifted her attention to briefly review some topics in which nature testifies (as it does in all aspects), to a young creation. Her exam-

ples included dinosaur soft tissue and polystratic trees at Joggins Nova Scotia (trees that have been fossilized standing straight up through many geologic layers).

The theme of Patricia's presentation was Psalm 11:3 "If the foundations are destroyed, what can the righteous do?" The whole issue boils down to what can the church and each Christian do to stem the tide of humanistic culture and to help turn back the darkness affecting modern society. Patricia's message was very clear. It is important to preach the gospel including to fight against all attacks on the foundation of the Christian faith.



Amazing Works of Creation

by
Margaret
Helder



When we reflect on wonderful works of creation, our thoughts often turn to beautiful creatures like hummingbirds and butterflies. Most people do not think firstly about such issues as the electromagnetic spectrum of energy including x-rays, visible light and radiowaves.

One great scientist who saw the beauty of creation in such phenomena was James Clerk Maxwell (1831-1879). He was a physicist, the first professor of experimental physics at the Cavendish Laboratory at Cambridge

University. Over the main entrance to the building, this physicist directed that Psalm 111:2 be carved in Latin: *Magna opera Domini, exquisita in omnes voluntates ejus.* "The English translation is "Great are the works of the Lord, studied by all who delight in them." (ESV) When he studied these physical phenomena, Maxwell saw that they had been wonderfully designed and created by God. According to the Cambridge Dictionary of Scientists (2002) Maxwell's summary of electromagnetism in the form of field equations is "an achievement equalled only by that of Newton and Einstein in mechanics!" (p. 246)

Many influential scientists have carried out research in the Cavendish Laboratory. Some like James Watson and

Francis Crick of DNA fame, did not reflect on God except to deny His existence. However, when the old Cavendish building was replaced by a modern building in 1973, Andrew Briggs, a graduate student in physics, suggested that the new building bear the same biblical inscription, this time in English over the main entrance. An appropriate committee approved, and so it is that the words "The works of the Lord are great, sought out of all that have pleasure therein." (16th century Coverdale translation). The legacy of great Christian physicists is apparent to all.

The take home message for us is that all nature, all creation, bears testimony to the work of God and is therefore commended to us for study. Only a few people are so interested in science that they make it a life career. Others derive vicarious pleasure in science by following reports of new discoveries. I, for example, find it interesting to see pictures of the landscapes on distant planets and moons. They seem more real when one can view an actual picture. Of course, planetary science and the study of deep space also testify to God's majesty and power, and are worthy of study.

There are lots of people in our society however who claim to have no interest in science. Most of them are actually fooling themselves about their lack of interest. Are they interested in human health? Are they interested in beautiful gardens, majestic scenery, good or bad weather conditions, the physics of sports, or the physics of sound yielding amazing music? All these phenomena bear the hallmarks of God's wisdom and design. How can Christians not be interested? As James Clerk Maxwell demonstrated so long ago, even our amazing technologies are possible only because God created the physical forces to work the way they do. Andrew Briggs, so influential at the Cavendish Laboratory, later became professor of nanotechnology at Oxford University. Even very small phenomena bear testimony to the work of the Creator!

Another famous Christian, Raymond Damadian (1936-2022) inventor of the MRI, gave glory to God who designed the forces under which atoms, depending upon their



environment, spin at different rates in a strong electromagnetic field. Although many contemporary scientists declared that an MRI type device could not be made to work, Dr. Damadian proved them wrong.

Col. Jeffrey N. Williams is one astronaut who attributed what he saw from the International Space Station (ISS) to the wonderful works of God. For example, in his book *Work of His Hands: a View of God's Creation from Space* (2010) Col. Williams reflected on the words of Job 26:7. "Earth is a ball in the vastness of space. It is one thing to know that academically, quite another to view it. God really does suspend the Earth on nothing." (p. 47) He continues on the next page: "A later verse in Job gives an accurate description of what we call the terminator – the line that divides day and night on the surface of the planet. '[God] has inscribed a circle on the face of the waters at the boundary between light and darkness.' (26:10) Orbiting the earth every 90 minutes, the ISS passes over the terminator twice in that time. The terminator cannot be seen on the ground, but becomes very obvious from orbit."

What does all this mean for Christians who have talents and interests other than science? Can one still enjoy amazing aspects of the creation? Of course! The first step is to observe your environment, maybe do some thinking and research, giving glory to God whose provisions in nature are reliable and understandable. These insights will enrich your life.

Of course, it is important to evaluate the interpretation of scientific information. Those who interpret observations from nature in terms of matter and processes alone, typically come to false conclusions. As a consumer of information on nature or anything else, the Christian needs to be discerning in his sources. The scientists discussed above, for example, all viewed nature through a biblical lens. That was their joy.



The Sea Dragon

What is it?

Continued from page 1

by
Jerry
Bergman

Sea dragons (or seadragons) have long had the honor of being on the list of ugliest animals on Earth. The foot-long (from 30-to-45 centimeters) sea dragons, although classified as a fish, look like no fish an ichthyologist has ever seen. They look more like large worms with leaf appendices, a design that has baffled taxonomists and evolutionists alike ever since they were discovered over 200 years ago. This has been a major problem in not only classification, but in producing a plausible evolutionary tree. They do not fit into the category of insects and other water life, so, by default, they are classified as fish. The reason for this classification is they spend their life in water, have fin-like structures like fish to help them move, their young hatch from eggs, and they breathe by gills. Aside from these traits they are very unlike fish.

One major difference is they do not have scales as do fish, but rather are covered with bony-like plates that resemble insects' covering. Their head resembles a horse head with a long,

thin-tube snout used to suck in food like humans use a straw to drink soda pop. They also lack the smooth, clean, streamlined fish body. This is not a problem because Sea dragons spend most of their time, not swimming like a fish, but drifting in the water.

They require nutrients mostly for normal-body physical needs. They are filter-feeders which digest small sea life, including plankton (tiny shrimp and fish larvae) which permeates ocean water. To survive, this diet requires them to eat most of the day. They hang onto seaweed and swaying with the seaweed moved by ocean currents they absorb plankton. Like fish, they use a swim bladder full of air to effortlessly keep them afloat.

The two main sea dragon species are the *leafy sea dragon* and the *weedy sea dragon*, the latter of which has very few skin flaps compared to the leafy sea dragon variety. A newly discovered species is the bright-red *ruby sea dragon* which, in contrast to the leafy and weedy sea dragons, lives in deep water.

weedy sea dragons



The *leafy sea dragon's* ornate skin flaps are designed to look like leaves which produce a very effective camouflage where they live in shallow water among swaying seaweeds and grasses which provide protection. To blend in further, they can change colors like a chameleon! The protection is very effective—it's close to impossible to see them in the seaweeds and grasses. The *leafy sea dragon's* leaf-shaped appendages also produce a striking resemblance to some land dragons of folklore; thus it is understandable why they are called leafy sea dragons.

The pipefish and sea dragon are rarely found living in the same area. With their relatives, the sea horse and the streamlined pipefish (which looks like a pipe, hence its name), all are classified as *Syngnathidae*. 'Syngnathidae' means "used jaw," which is one of the very few traits that members of the Syngnathidae family have in common!

Sea dragons are so strange looking that they are often mistaken for a plant, which is why their ugliness functions as a perfect camouflage! Some

also have sharp spines which also aid in protection. Otherwise, they have no means of defense. They cannot swim very fast and their mouth does not provide a deterrent against predators. As Professor Paul Zahl writes: "Animal or Vegetable? Fish or Fantasy? Looking like a tangle of seaweed, the leafy sea dragon—kin of the sea horse—gallops through pastures of marine algae." This is why their common name is the leafy sea dragon (scientific name: *Phycodurus eques*). They are found only in Southern Austrian waters where they hide in their weedy habitat in 15 meter-deep water.

Reproduction

From 100 to 250 eggs are deposited by the female on the underside of its mate's tail where they are fertilized by the male. The **sea horse** carries its brood in a markedly swollen brood pouch in contrast to the **sea dragon** which carries its brood under its tail. Like the sea horse, males carry their young until the eggs hatch after 3 to 5 weeks. At this time the now half-mature eggs hatch and the tiny babies can survive on their own.

Sea dragon evolution

Close to nothing is known about the evolution of leafy sea dragons because physical evidence for their evolution is nonexistent. As far as the evolution and physiology of male pregnancy in syngnathid fishes is concerned, the experts are still have no explanation. The Syngnathidae family, including the leafy sea dragon, is believed by evolutionists to have emerged around 45 million years ago from some un-



Summary

In short, the sea dragon is a well-designed animal, although very different from most known forms of life which, for this reason, causes major problems for evolutionists. Evolution is usually inferred by morphological similarities but in this case a stark contrast exists between the sea dragon and all other known forms of life. It is easy to figure out how these creatures differ from other fish, but why and how they came to be that way points to design. For the Creator of all things, richness and diversity among living creatures are part of His signature.

Endnotes

- Rake, Jody. 2017. *Sea Dragons*. Mankato, MN: Edge Books, p. 8.
- Weston, Paula. Enter the sea dragons. *Creation*. 22(1):54-55, December 1999.
- Rake, Jody. 2017, p. 17.
- Rake, Jody. 2017, p. 14.
- Rake, Jody. 2017, p. 7.
- Schuh, Mari. 2021. *Sea Dragons*. Mankato, MN: Amicus Ink.
- Meister, Carl. 2015. *Sea Dragons*. Minneapolis MN: Bull Frog Books
- Catchpoole, David. Pygmy pipe horse pipe dream. *Creation* 33(4):12-13, October 2011.
- Zahl, Paul. 1978. Dragons of the Deep. *National Geographic* 153(6):838-845, June, p. 839.
- Zahl, Paul. 1978, p. 839.
- Whittington, C. M. and C. R. Friesen, 2020. The evolution and physiology of male pregnancy in syngnathid fishes. *Biological Review*. 95, 1252–1272.
- Wilson, A. B et al., 2003 The dynamics of male brooding, mating patterns, and sex roles in pipefishes and seahorses (family Syngnathidae). *Evolution*. 57, 1374–1386.
- Teske, P. R. and L. B. Beheregaray, 2009. Evolution of seahorses' upright posture was linked to Oligocene expansion of seagrass habitats. *Biology Letters*. 5, 521–523.
- 14 Whittington and Friesen. 2020
- Whittington and Friesen. 2020.
- Small, C. M et al. 2016, The genome of the Gulf pipefish enables understanding of evolutionary innovations. *Genome Biology*. 17, 258.
- Leafy seadragon: Australia's swimming plants. *About Animals*, 2018; <https://www.aboutanimals.com/fish/leafy-seadragon>
- Lin, Q and S. Fan, et al., 2016. The seahorse genome and the evolution of its specialized morphology. *Nature*. 540, 395–399.

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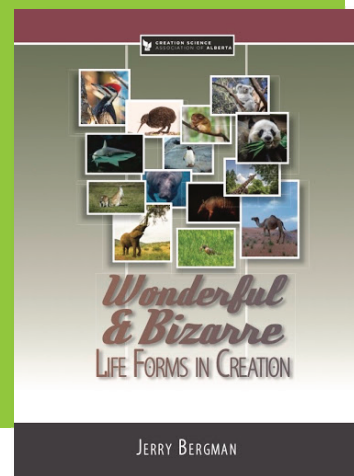
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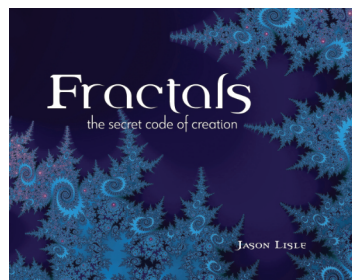
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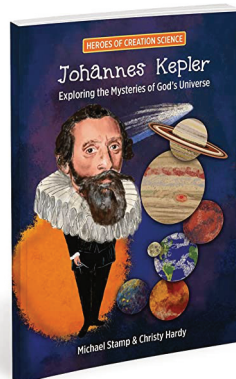
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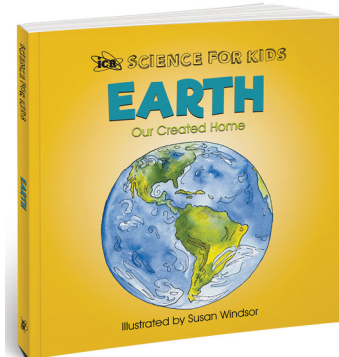
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