

We are living during a fascinating time in history. For those who follow the Word of God, there are many aspects of our global culture that point to the impending return of Jesus Christ. One of the telltale signs of Jesus Christ's return is an explosion of knowledge. In Daniel 12:4, the Bible tells us that as the end of time nears "knowledge shall increase" (NKJV). We are certainly living in a time when new scientific discoveries and technological advancements are commonplace. In the past forty years, we have seen the invention of the internet, personal computers, cellular technology, mobile devices, DNA sequencing, fiber optics, robotic surgery, large scale digital information storage, GPS systems and many more advancements that were previously nothing more than science fiction. In a scientific article titled "Information in the Biosphere: Biological and Digital Worlds," the authors made the fascinating statement that "Information technology has vastly exceeded the cognitive capacity of any single human being and has done so a decade earlier than predicted." Yes, this technological age regularly churns out astonishing advancements.









<sup>&</sup>lt;sup>1</sup> Gillings, Michael R., Martin Hillbert and Darrell J. Kemp (2016) "Information in the Biosphere: Biological and Digital Worlds" *Trends in Ecology and Evolution*. March 2016, Vol. 31, Issue 3. Accessed via web January 29, 2021: https://escholarship.org/uc/item/38f4b791.

While more and more scientists, inventors and entrepreneurs may find great confidence in the evolution of technology, what is most striking is that these innovators often look for and find inspiration in God's Creation. For if Creation simply evolved, why are we continuing to discover biological processes that are more advanced than our existing technology? The answer is that they were created by a Supreme Being, the Sovereign God, whose intelligence far exceeds our own.

"But now ask the beasts, and they will teach you; and the birds of the air, and they will tell you; or speak to the earth, and it will teach you; and the fish of the sea will explain to you. Who among all these does not know that the hand of the Lord has done this, in whose hand is the life of every living thing, and the breath of all mankind? Job 12:7-10 (NKJV)



A peacock mantis shrimp

Consider a few examples of astonishing biomechanical engineering and design from the marine environment. First, consider the mantis shrimp. The mantis shrimp is a type of burrowing crustacean that spends a large amount of time hidden from sight under the seafloor. When it emerges from its home, it makes quite an impact. Some mantis shrimp feed by punching their prey. Their striking appendages can accelerate with the same speed as a .22 caliber bullet and make a devastating impact on their prey. Even more impressive is their eyesight as they have the most complex eyes in the animal kingdom. A mantis shrimp's stalked eyes rotate in all directions and have the remarkable ability to see a wide spectrum of colors. While humans have three color photoreceptors in their eyes, mantis shrimp have sixteen color photoreceptors allowing them to see both ultraviolet and infrared light. They also have trinocular vision where each eye is divided into three sections, allowing them to see perfectly with either eye. Scientists have concluded that the mantis shrimp's vision is more advanced than military imaging software. Mantis shrimp eyes have also inspired advancements in the cameras used in autonomous driving.<sup>2</sup>

<sup>&</sup>lt;sup>2</sup> Henderson, Sandra (2018) "Vision of Mantis Shrimp Enhances Autonomous Driving" *NovusLight.com.* November 9, 2018. Accessed via web January 29, 2021: https://www.novuslight.com/vision-of-mantis-shrimp-enhances-autonomous-driving\_N8561.html.

Another fascinating creature that has inspired advances in technology is the limpet. These benign looking creatures are a type of mollusk that live attached to rocks in coastal zones. Avid grazers, they use astonishingly strong teeth to scrape algae off the rocks, sometimes leaving behind grooves in the rock's surface. It was these grooves that attracted the attention of researchers who wondered what type of material could be so strong as to cut through rock. Consequently, limpet's teeth are now recognized as being the strongest biological material in the world due to their unique composition of microscopic fibers. To provide a relatable example, the amount of weight the material can withstand would be akin to a large cow being suspended from a spaghetti noodle. Their remarkable construction is now being used to strengthen materials in planes, boats, body armor and even dental fillings.<sup>3</sup>





Finally, another marine animal that offers amazing benefits to biomedical technology is the horseshoe crab. Unlike humans and other red-blooded organisms, horseshoe crabs have blue blood. This is because God created their blood to include hemocyanin instead of hemoglobin. Both hemocyanin and hemoglobin function in the same way as they are responsible for transporting oxygen throughout the body. While hemoglobin has iron, giving blood a red color, organisms with hemocyanin have copper instead, making their blood appear blue. Scientists have discovered that a horseshoe crab's strikingly blue blood has antibacterial properties. As a result, horseshoe crab blood is used to test for bacteria in medical devices such as pacemakers before they are implanted in humans.4

As we consider these incredibly innovative

designs present in the marine environment, how can we not be in awe of the One who created them? Scientific investigation should eliminate any doubt in the presence of an awesome Creator God, the God of the Scriptures.

<sup>&</sup>lt;sup>3</sup> Kaplan, Sarah (2015) "Scientists have discovered nature's newest strongest material" *The Washington Post.* February 18, 2015. Accessed via web: January 29, 2021 https://www.washingtonpost.com/news/morning-mix/wp/2015/02/18/scientists-have-discovered-natures-newest-strongest-material-and-it-comes-from-a-sea-snail/.

<sup>&</sup>lt;sup>4</sup> Monks, Kieran (2015) "Why this crab's blood could save your life" CNN.com. January 5, 2015. Accessed via web January 29, 2021 https://www.cnn.com/2014/09/04/health/this-crabs-blood-could-save-your-life/index.html.