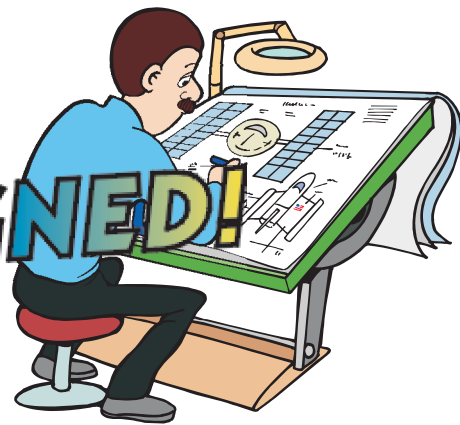


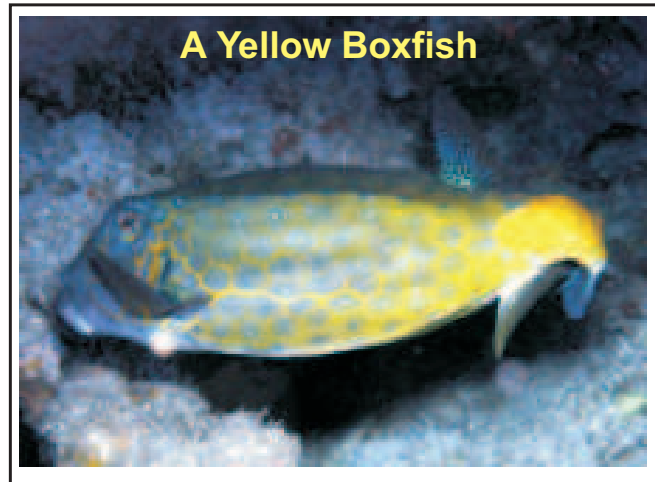
# WELL DESIGNED!



## The Boxfish

**T**HE Boxfish gets its name from its box-like shape. There are many different species of these fish which live among the seaweed in the tropical lagoons and coral reefs of the Pacific and Indian Oceans. Their outer skin is like a rigid suit of armour, which gives good protection against high water pressure and injury as they swim in confined spaces searching for food. Their body shape is also designed to keep them stable, and enable them to swim without needing to move their fins.

At first sight, boxfish, with their cube-like shape, may not appear to be very streamlined. So marine biologists were surprised to discover that boxfish are actually ideally designed for speed and agility. In fact, they have concluded that the boxfish is



A Yellow Boxfish

very close to "the ideal engineering shape." Car manufacturer Mercedes-Benz realised the boxfish was "an ideal example of rigidity and aerodynamics", and it became the model for a unique car development project. It began with a scale model car based on the fish's shape, and tests in a wind tunnel confirmed that cars with this shape would be much more efficient than normal cars. The result is their new "bionic car", based on the box-fish's design. It is strong, safe, uses 20% less fuel, and produces much lower exhaust emissions than normal cars.

In a statement acknowledging that the new car's design was inspired by the boxfish, Mercedes-Benz called the fish "a prime example of the ingenious inventions developed by nature over millions of years of evolution." No doubt the car makers will take credit for their design, but it seems they are unable to grasp the fact that the fish they used as a pattern could never have been produced by millions of years of chance processes. So all credit to the box-fish's Designer!



The Mercedes-Benz Bionic car modelled after the box-fish's design

Photo: courtesy Mercedes-Benz

## God NATURE DID IT FIRST!

Bionics — copying ideas from nature — has become big business. The examples we have given are just a small selection of hundreds. Scientists and engineers who do it usually have to admit that the originals are far better than their copies. So why are they usually reluctant to admit that the originals were designed? They often fudge the issue by saying that "nature" or evolution did it. But nature is only a word that describes what we see, not a personality. Instead of saying that "nature did it first", why not say God? Why is this word taboo in so many scientific circles today? Why is it thought to be "unscientific" to say that there is a Mind behind nature's designs?

There seems to be a wilful blindness at work, for, according to the Bible, "Since the creation of the world God's invisible qualities — his eternal power and divine nature — have been clearly seen, being understood from what has been made, so that men are without excuse." (Romans 1: 20). To say "There is no God" is amazingly arrogant. No-one can truthfully make such a claim unless they have absolute knowledge and have visited every part of the universe. However, it is not necessary to search the universe to find God. He has come to search for us! Although our sins are a barrier between us and God, He has revealed Himself in an amazing way: by becoming a human being in the Person of Jesus Christ. The Bible tells us that "He is the image of the invisible God." (Colossians 1: 15)

Jesus came as an example of how life should be lived — the perfect role model. But He was more than that. He came to save us from the consequences of our sin by His death and resurrection, and to enable us to have a permanent relationship with our Creator. Please contact us, or visit [www.the-real-thing.org.uk](http://www.the-real-thing.org.uk) to find out more.



### Laughter is good medicine

How does Bill Gates get air into his mansion?  
He clicks on an icon to open a window.

Why did the monkey wear banana skins on his feet?  
He wanted to wear slippers.

When was King Arthur's army too tired to fight?  
When it had lots of sleepless knights!

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The REAL SCIENCE paper!

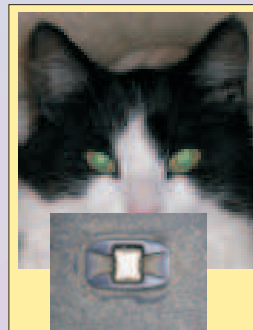
# ORIGINAL VIEW ORIGINAL

No. 54

## DIVINE DESIGNS? © GOD

**In this issue:**  
Hydraulics and shock-absorbers  
Fleas' giant leap  
Our sun is no "normal" star  
How to stick around  
Well Designed: The Boxfish

### Why do scientists copy nature's designs, but claim the originals, which are much better, had no designer?



The way that cats' eyes glow in the dark led to the invention of the cats'-eyes we see on roads (lower photo)

Driving at night is made much safer when reflectors known as "cat's eyes" are fixed to the road, and many lives must have been saved through their use. Their invention was one of the earliest examples of "bionics" — the science of borrowing ideas from nature and developing them commercially. The word *bionics* actually means "like life." Cat's eye road markings were invented by Percy Shaw of Halifax, England, who, in 1934 was driving one dark, foggy night when he saw a bright reflection in his car headlights. He stopped, and discovered they were the eyes of a cat. He also found he was on the wrong side of the road, and had almost driven off the road and into a ravine. The following year he set up a company to market these reflectors, and today millions of them are used all over the world.

Most of us use "Velcro". This was also copied from nature, particularly the burdock plant, which has seeds ("burs") that stick to animals' fur and people's clothing. In 1948, Swiss engineer, George de Mestral decided to copy and market the idea. He named his invention "Velcro", after the French words *velours*, meaning 'velvet', and *crochet*, or 'hook'. Today, "Velcro" is used to hold and fasten thousands of things, from shoes to car bumpers.

**These inventors patented their inventions, but were the originals they copied produced by evolution — or a Creator?**



The tiny hooks on burdock (above) inspired the invention of "Velcro" (above, right), used to fasten shoes (right), as well as many other fastening jobs.



## GEN & EV



Drawing by Michael Higgins

For more on Darwin and evolution see [www.darwinday.org.uk](http://www.darwinday.org.uk)



## Hydraulic power and shock-absorbers — more divine designs.

It is difficult to imagine the world without machinery operated by hydraulics, or power tools without shock absorbers. Yet both these were present in the natural world long before human engineers ever thought of them. A number of creatures use hydraulics, including starfish. These sea creatures have five “arms”, and underneath each arm are hundreds of tiny feet — suction pads, which are hydraulically controlled. Water is sucked through a sieve on the top of their body, and pumped through tubes which run along each arm, to operate the feet. Human engineers have copied this method to power machinery, using oil pumped through pipes.

Shock absorbers are an essential part of many large power tools, since without them the vibration could cause serious injuries to those who operate them. Yet scientists have to admit that their best shock absorbers are nothing like as good as the

woodpecker’s, and are hoping to learn how to make better ones by studying these amazing birds. Woodpeckers hammer at trees 15 to 16 times a second — nearly twice as fast as a sub-machine gun fires. This puts enormous strain on the bird’s head, and the suddenness with which the head is brought to a halt during each peck produces stress equivalent to 1,000 times the force of gravity — more than 250 times the force an astronaut experiences during lift-off! To protect them, woodpeckers have several special design features. Their skull is reinforced, and, unlike other birds, is separated from their beak by a spongy tissue. In addition, a special mechanism pulls their brain-case away from their beak every time they hammer at a tree! If they had to evolve these features gradually, why didn’t woodpeckers beat their brains out long before their shock absorbers were effective?

Like the hydraulic systems and (inferior) shock absorbers made by humans, starfish and woodpeckers must be products of an intelligent mind.



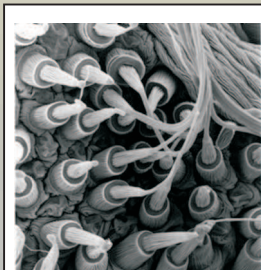
Starfish (above) were using a hydraulic system long before human engineers copied the idea to operate machinery.



The shock absorbers on power tools are inferior to those of woodpeckers, and human engineers hope to make better ones by studying these amazing birds.

## STRONGER THAN STEEL!

Human engineers are very envious of the way spiders make their silk, and still don’t fully understand how it is done. Spider silk is produced as a liquid protein in the spider’s abdomen. It comes out through two or three pairs of *spinnerets*, via microscopic *spiggots* (photo below), and immediately solidifies to make threads. Spiders use their silk for a number of purposes, including making webs to catch prey, protecting their eggs, wrapping their prey, and making shelters. Although the silk begins as a liquid, once it is spun it doesn’t dissolve in rain — something which has puzzled researchers. Spider silk is amazingly strong and can be stretched to one third longer than its original length without breaking. Weight for weight it is five times stronger than steel!



Spider silk being produced through microscopic *spiggots*. Photo: courtesy MicroAngela: www.howstuffworks.com

There has been some success in producing synthetic spider silk, which has been used to make bullet-proof vests, surgical threads and optical fibres. However, it has not been possible to match the thickness and strength of the natural silk. Another thing about spiders’ silk that humans can’t copy is that it is re-usable — spiders simply eat it and recycle it. Evolutionists claim that spiders “evolved” their silk-making mechanism over millions of years. Really? Then why are the oldest fossil spiders the same as modern ones?

## Fleas’ giant leap helps mankind

Most of us hate fleas, because of their nasty bite, but we have to admire the way they jump, which is equivalent to a human jumping as high as a 100-storey building. Scientists have discovered that the secret of the fleas’ jumping power is a rubber called *resilin*. Fleas (left) have pads of this in their legs. This is compressed, storing energy which is released in a millisecond when they jump. Other insects also have resilin. It enables bees to beat their wings all day without tiring. This could be 720,000 times an hour, or 500 million flaps in a bee’s lifetime. Resilin is so flexible that it can stretch to three times its length, then contract again. Scientists have now copied this natural rubber by cloning it from fruit-flies and using bacteria as “factories” to manufacture it. They hope to use it to make artificial human body parts that will not wear out. Australian scientist Dr Chris Elvin spent four years reproducing what he called nature’s “near perfect rubber”, but said “Nature had a couple of hundred million years of evolution to do it.” But Dr Elvin had to use his intelligence to copy resilin, so mindless evolution could never have produced the real thing. Although scientists have patented their copied product, the real patent surely belongs to Someone else.



Source: www.theage.com.au/news/science 13th October 2005.

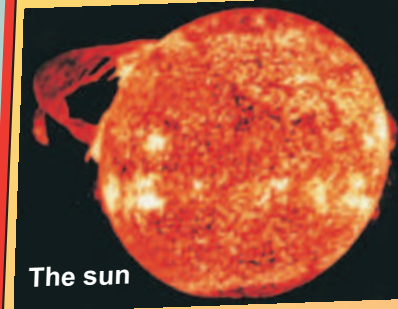
## IN THE NEWS

### Our sun is not so “normal” after all

The planets of our solar system, including our own planet earth, orbit a star we call the sun. Its size and distance from us are crucial to our existence. Cosmologists have long maintained that our sun is just a “normal” star, one of thousands of similar stars that are found throughout the universe, and that there is nothing really special about it. This is one of the reasons why they believe that there are lots of other inhabited planets out there, waiting to be discovered.

However, astronomers are now having to admit that our sun is not so normal after all. They are finding that most “sun-like” stars are very variable and erratic, which would make it highly unlikely that they could support planets suitable for life. Solar physicist Karel Schrijver, of the Lockheed Martin Advanced Technology Center in Palo Alto, California, said, “More than half of sun-like stars either have cycles that are slowly increasing or decreasing in how active they are over time instead of remaining steady, or they’re completely irregular. We don’t really know why.” Schrijver is hoping that NASA’s soon-to-be-launched Solar Dynamic Observatory spacecraft will reveal more about the inner workings of the sun, “and therefore shed light on these mysteries.”\*

Secular scientists usually hate the idea that anything in the universe is “special” because this suggests design and intelligence. That’s the reason they “don’t know why” our sun is not like other stars. However, scientists who believe in special creation can easily explain why our sun is such a stable star. It was designed and created by an all-wise Creator for the very purpose of supporting life on our planet. It was no accident! \*www.space.com 22nd. October 2007.



The sun

## How to stick around

### Lizards and shellfish inspire scientists to make new super-glue

Geckos are small lizards which have the ability to walk up vertical surfaces, and even upside down across ceilings. Some scientists believe they can support hundreds of times their own weight, and until fairly recently were unable to explain how they did it. Powerful microscopes have revealed that geckos have millions of tiny hairs on the soles of their feet which produce electrical attractions that glue their feet to the surface. This means that a gecko can stick to virtually any surface — even polished glass. Scientists who study geckos have learned how to make an adhesive so powerful that it would enable a person to hang from a ceiling by one hand. Useful to *Spiderman* maybe?

Mussels (below) are shellfish which stick themselves to rocks (or any other surface) so firmly that the fiercest storm can’t dislodge them. Scientist Kaichang Li of Oregon State University, USA, studied the way mussels produced their glue, and made an adhesive that will remain strong even after being boiled for several hours.



The journal *Nature* (July 17th 2007) reported that scientists have now found a way to combine the physical structure of gecko glue with the chemical structure of mussel glue to make a new “super-glue” that will remain strong under water. They have named this new glue “Geckel”. It is hoped that it can be used in medicine to produce adhesive bandages and for underwater machinery and exploration. Once again nature’s (God’s) designs have been copied with great benefit.



A gecko



A gecko walking up a vertical wall