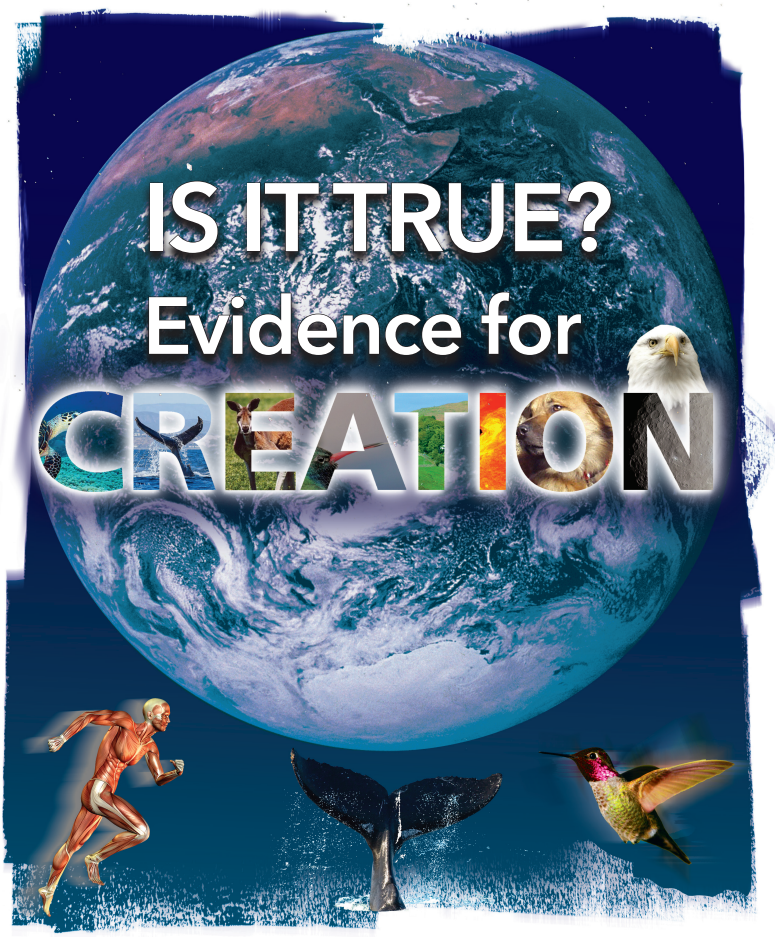


Stuart Burgess and Andy McIntosh
ed. Brian Edwards

CPR CHRISTIAN PRISON RESOURCING
DayOne




ISBN 978-1-84625-609-7

British Library Cataloguing in Publication Data available

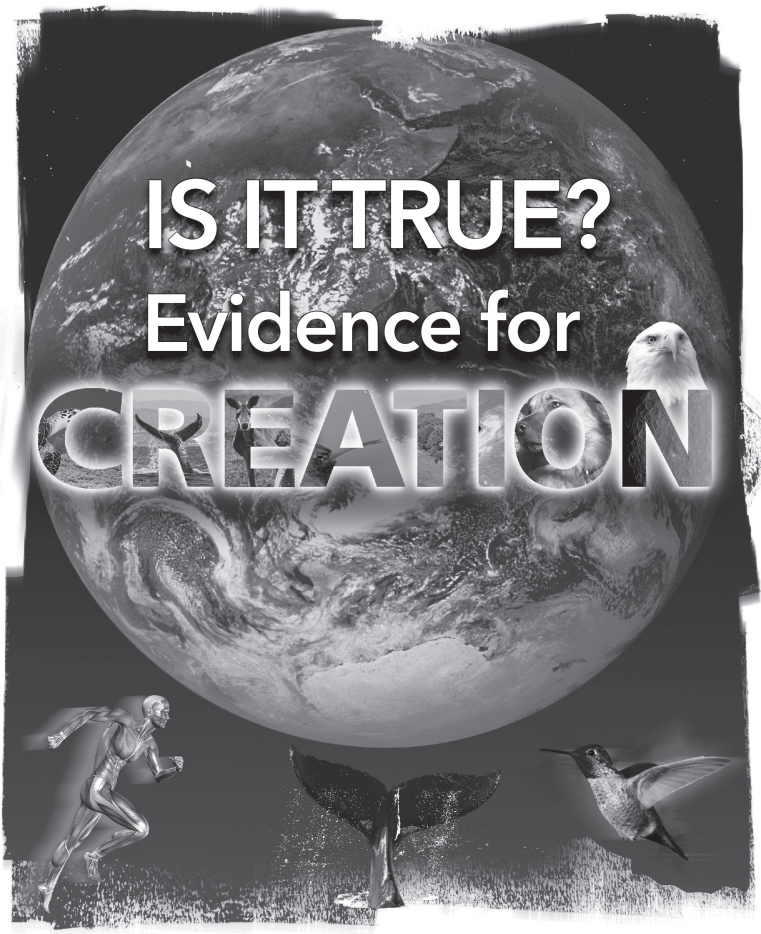
Many images copyright of Shutterstock.com

Joint publication with Christian Prison Resourcing and Day One

Day One Publications
Ryelands Road, Leominster, HR6 8NZ, England
Tel 01568 613 740
North America Toll Free 888 329 6630
email sales@dayone.co.uk
web www.dayone.co.uk

Christian Prison Resourcing
www.cprministries.org.uk

Printed by Orchard Press (Cheltenham) Ltd



IS IT TRUE?
Evidence for
CREATION

Stuart Burgess and Andy McIntosh
ed. Brian Edwards

CPR CHRISTIAN PRISON RESOURCING
DayOne

Creation

'Since the creation of the world God's invisible qualities—his eternal power and divine nature—have been clearly seen' (Romans 1:20).

Everyone agrees that if the whole universe, and especially planet Earth with its incredibly complex order and beauty, evolved little by little and step by step over millions of years, it did so against immeasurable odds.

Did the precise movements of the planets, the regular seasons of the year, the reliance of all living things upon each other and the awesome detail of life, come about 'by chance'? Or is there a more reasonable explanation?

Wherever we look around us in creation we see evidence of a perfect, detailed and complex design. So much we see in creation must be complete at once to work at all. This is called 'irreducible complexity'. It cannot 'evolve' little by little. A thinking mind will face the question of whether this is really the result of a series of unimaginable probabilities, or whether such complex design points to a wise and powerful Creator. The answer to that question will give us a clue to how everything began. Knowing how and why everything began, reveals how it will all end.

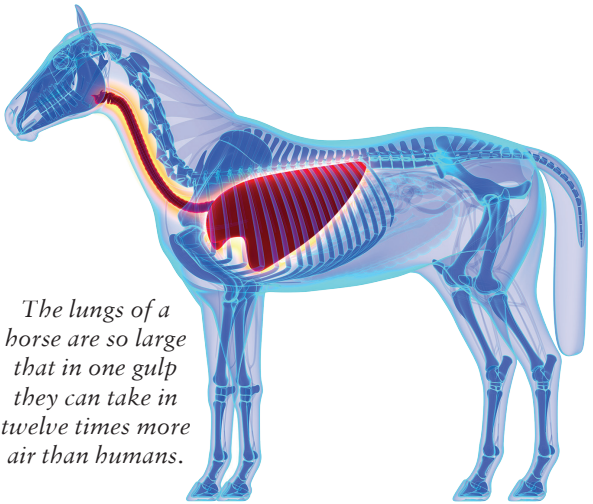
Sadly, the beauty, order and variety of planet Earth are too often shattered by violence and pain, disorder and death. At the close, we will face the question asked by theologians, scientists and philosophers for thousands of years: 'What is the purpose of it all?'

But first, as you read this booklet, enjoy the panorama of a creation so beautifully detailed, ordered and complex that it would be unbelievable if it was not there in front of us.

'Ask the animals, and they will teach you, or the birds of the air, and they will tell you; or speak to the earth, and it will teach you, or let the fish of the sea inform you. Which of all these does not know that the hand of the Lord has done this? In his hand is the life of every creature and the breath of all mankind' (Job 12:7–10).

1. Animals—the horse

If we were to design an animal to carry a human being and fulfil a multitude of tasks, we could not improve on the horse.



The lungs of a horse are so large that in one gulp they can take in twelve times more air than humans.

The lungs and heart of the horse are designed for speed, power and endurance. This enables them to run at up to 80 km/h (50 mph), haul huge loads, or cover 160 km (100 mi) in a day.

The horse has a strong suspension system. The rear legs have joints that are bent just at the right angle so that any shock-load bends the joints, rather than sending the shock up through the legs. The tops of the front legs are connected to the body by flexible muscle so that the body

When galloping or jumping, the whole weight of horse and rider may be taken by just one or two legs at a time. This means a single leg may have to support up to 500 kg (half a ton)!

is elastically slung between two pillars. This produces a soft suspension system. The horse's 'gears' allow it to walk, trot, canter and gallop, and change smoothly from one to the other. All of which allow a more comfortable ride!

The foot bones, hoof and heel are perfectly designed to provide rigidity, strength, grip and cushioning. The horse's feet are far more efficient than any manufactured footwear for us.

Altogether, the horse has been perfectly designed for human use in transportation, farming, sport, leisure, warfare and even policing.

2. Animals—the camel

The camel may not be such a comfortable ride as a horse, but it can cope very well with extreme conditions; it survives in high temperatures, lack of water, poor vegetation and a tough terrain.

Even in the heat of summer camels can go up to five days without water. They can sense water from several miles away and take on board up to 182 ltrs (40 gal) in a single drinking session.

Camels are uniquely designed to reduce water loss. They do not sweat until a higher temperature than most mammals. Their kidneys produce concentrated urine to minimise water loss. When a camel breathes out, small protrusions in the nose trap the water vapour and are perfectly shaped to return it to the body. They can cope with losing up to 40% of their body weight in water because of a special design to their red blood cells and blood vessels.

The camel has a high-performance system for keeping the body at a more constant temperature in desert heat. Pairs of veins are located next to each artery so that the hot arteries are cooled by the cooler veins that are nearer the surface. They also flow in opposite directions. This is far more efficient and complex than the cooling system in any modern car.

Surprisingly, the camel's thick fur coat insulates from heat, and its hump is a fat storage that also provides an insulating layer from the burning sun.

An animal weighing up to one 1000 kg (1 ton) and carrying a load of 450 kg would easily sink into soft sand. Therefore, camels have been designed with feet that have two large toes with webbing in between, and the toes spread apart under load. A thick padded sole insulates from the burning sand.

Sandstorms are no problem. Camels have three eyelids. Two have eyelashes which help protect their eyes from sand, and the third moves from side to side like a windscreen wiper. This inner eyelid is clear so that the camel can keep its eyes open in a sandstorm.

In hot, dry, desert places the camel is the desert horse, perfectly designed for its job.

3. Sea creatures—the dolphin

Dolphins are designed to swim with speed and agility; they are also very intelligent creatures.

The body of a dolphin has a teardrop shape which gives low drag resistance in water. The outer layer of a dolphin's skin is shed and replaced every two hours to keep the skin smooth. Bottlenose Dolphins can dive down to depths of up to 300 m (almost 1,000 ft)—far deeper than a human diver can cope with.

Their body is designed for speed. In contrast to fish, which have numerous fins, dolphins have just two agile flippers for steering and a dorsal fin on top of their back for stability. A horizontal tail fin enables them to be

A family of dolphins jumping out of the water off the coast of Hawaii.

expert at jumping out of the water. Although no one knows for sure why they do this—perhaps they sometimes do it just for fun.

Dolphins are capable of bursts of speed up to 48 km/h (30 mph). Scientists once thought these speeds were impossible in the light of the amount of muscle in their body and the resistance of water. However, in recent years engineers have been studying dolphins closely to learn how to design better ships.

Dolphins are friendly to humans and easily trained. The US Navy has trained dolphins to perform complex tasks like detecting underwater mines.

Dolphins make a variety of sounds including clicks, whistles, buzzes and squeaks which can be heard over 5 km (3 mi) distant. These sounds are used for communication, navigation and locating predators or prey. Their high frequency sounds reflect off objects and they then pick up the echoes, which enables them to recognise the identity and distance of other creatures.

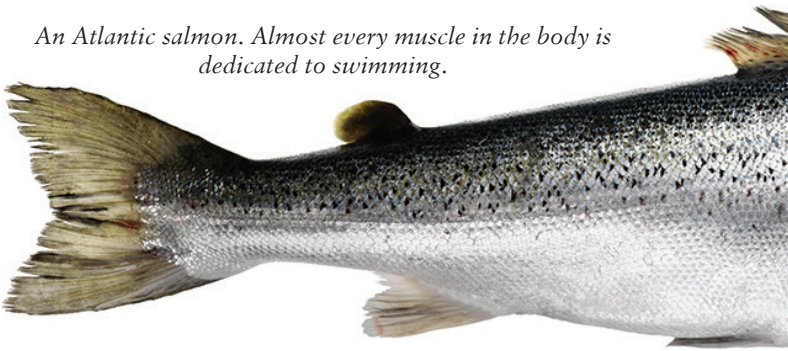
4. Sea creatures—salmon

Salmon have an amazing ability to navigate vast distances in order to return to the exact river where they were born.

Salmon are efficient and strong swimmers with highly streamlined bodies, a powerful tail fin for propulsion, and amazing stamina. They need all this to accomplish their epic journey from the river of their birth out into the vast ocean, and then return to spawn in the exact river where they were hatched.

Once they reach their 'home' river, the female will scrape a hole in the river bed with her tail and lay between 1,000 and 17,000 eggs. These will then be fertilized by the male and the young salmon (called 'fry') hatch usually in early spring. After a year, they have to swim alone downstream navigating all the tributaries and hazards to find an ocean they have never seen before. Here they live for a while in 'schools' of young salmon before, as adults,

An Atlantic salmon. Almost every muscle in the body is dedicated to swimming.



they go further out to sea to live, mostly alone, before returning to spawn. The Pacific salmon can live up to eight years out at sea, covering thousands of miles of ocean.

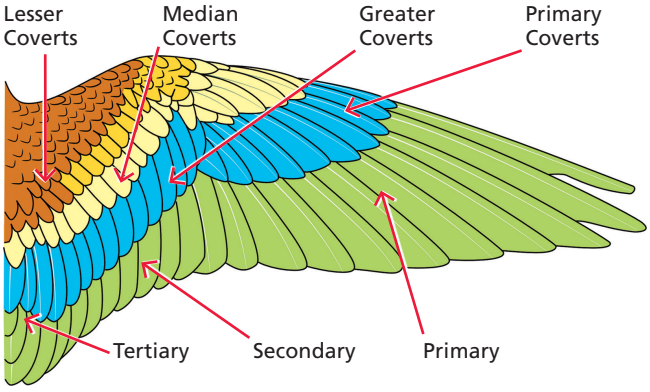
Salmon use magnetic sensors to navigate across the oceans. Heading back 'home', once they have navigated to the right section of coastline, they then use their sense of smell to direct them through the river system. Salmon have an incredible ability to sense chemicals in the water to one part per million. All this enables them to navigate back to their exact place of birth. This means they must battle hundreds of miles upstream against countless hazards and through a river system that may involve many junctions, strong currents, raging torrents and waterfalls. They are expert jumpers and some species are able to jump over 4 m (13 ft) in height.

Salmon are yet another example of incredible design coded into their creation from the start. They could never have gradually evolved the ability to perform such a complex migration because they cannot survive unless the whole migration cycle is fully programmed in their brain.

5. Birds: feathers and flight

Birds are unique among all the creatures on earth by the perfect design of their feathers for flight.

Feathers are not all the same. Each different type has to be placed in the right position for its particular function. Feathers on the outside of the wing are the *primary* flight feathers which are narrow on one side of their central shaft and wide on the other side. Closer to the bird's body are the *secondary* and *tertiary* feathers which are more equal on both sides of their central shaft. At the leading edge of the wing are the smaller primary, greater, median and finally lesser *coverts*.



The overlapping nature of all the feathers is such that the thickening to the leading edge of the wing is slightly curved which increases lift control. The wing is incredibly

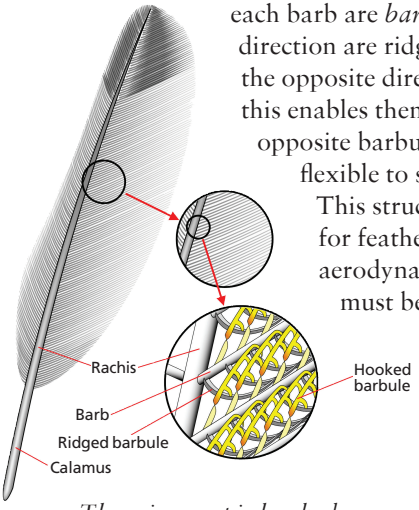
strong yet flexible and in flight the wing is constantly changing shape.

This is all precision designed and all must be in place for a perfect flight. In fact, without the primary feathers, even some of them, the bird cannot take off at all.

But there's much more in feathers than meets the eye.

Feathers are made out of keratin, which is a protein also used to make our hair and fingernails. However, in birds it is a bit different and is like a stretched spring. But we need a microscope to appreciate the incredible detail.

From the central shaft of the feather are *barbs* which give the vanes of the feather. From each barb are *barbules*, some in one direction are ridged and those in the opposite direction are hooked; this enables them to grip onto the opposite barbules whilst remaining flexible to slide over them. This structure is essential for feathers to work as aerodynamic surfaces and must be all in place at once. That's an example of irreducible complexity.



The microscopic hooked and ridged barbules coming from either side of the barbs.

'Does the hawk fly by your wisdom, and spread its wings toward the south?' (Job 39:26).

6. Birds—the hummingbird

Of all the birds, perhaps the hummingbird is the most amazing. It can fly forwards, sideways and even backwards. And their migration is phenomenal.

The flight of hummingbirds involves complicated aerodynamics. They generally beat their wings 50 to 60 times each second; but they have been known to reach an astonishing 150 times per second. In every wing beat cycle there is a complicated sequence of twisting and untwisting of the wings. The wing tip traces a figure of eight motion. Their bone structure is specially designed so that the ball

In this dramatic picture of a Blue-throated hummingbird you can see the twisting of the wings.

and socket at the end of the shoulder bone is able to swivel to a much greater degree than in other birds.

When they beat their wings, all birds generate vortices (spinning air) from the tips of the wings. These create a downdraft behind their wings but an updraft at the front end of their wings. Because the hummingbird is beating its wings so fast, it is able to pick up the motion in the air from the previous beat to its advantage!

Amazingly, these tiny birds can migrate huge distances. The Ruby-throated hummingbird is less than 9 cm (3.5 inch) long and no more than 4 g (0.14 oz) in weight, yet it can fly non-stop over land and sea from Panama or Mexico to eastern United States in 20 hours; sometimes against a 32 km/h (20 mph) headwind.

The Ruby-throated hummingbird.

In preparation for their migration, they need to gain 25–40% of their original body weight. If they have to travel non-stop over large expanses of water, they must take on fuel at exactly the right amount—too little and they will not make it, too much and they will be too heavy for the journey. Computers have to work this out for a passenger plane.

The Rufous Hummingbird, migrates as far North as Alaska, and covers a two-way journey across the Mojave desert.

7. Birds—migration

The migration of birds is one of the greatest mysteries of the natural world. Why do they go? How do they navigate? There are no complete answers.

The Arctic tern can live up to thirty-four years which means that in its lifetime it will make the equivalent of three round trips to the moon!

The Arctic tern is a seasoned traveller. It breeds in Greenland in the Northern Hemisphere but flies South to spend the northern winter in the Southern Hemisphere. Therefore, Arctic Terns fly from pole to pole every six months. He gets two summers! A British Antarctic Survey team discovered that each year they cover a distance of almost 71,000 km (44,000 mi). Not bad for a bird just 38 cm (15 in) long and weighing in at 130 gm (4.5 oz).

However, the Bar-tailed godwit takes the prize for the longest non-stop migration flight. In 2007, wildlife biologists used satellite transmitters to show that migrating Bar-tailed godwits fly from Alaska to New Zealand without once stopping to refuel. That's 11,400 km (7,100 mi) in just over eight days.

It is well known that a swallow can migrate to Africa—9,659 km (6,000 mi) crossing the Sahara Desert—and return in the Spring to the same barn in the UK in which it was born.

The Bar-tailed godwit takes the prize for the longest non-stop flight on record.

Do the birds have a map and compass? Scientific experiments show that they use the earth's magnetic field. Although how they know where they are on this magnetic map and where the sense mechanism is located in the bird has not yet been established.

Compounding the mystery is the fact that some geese, ducks and song birds stay at home all year, whilst others of the same species choose to travel. Perhaps the mystery of migration is intended to make us marvel at the Creator who planned it all.

'Even the stork in the sky knows her appointed seasons, and the dove, the swift and the thrush observe the time of their migration.' (Jeremiah 8:7).

8. Insects—dragonflies

With its ability to take off vertically, fly backwards, forwards and hover, the dragonfly makes a cross between a helicopter, jump jet and supersonic fighter look primitive.

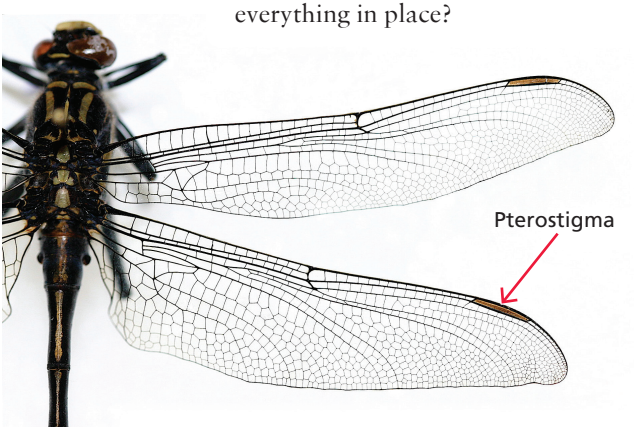
Reaching speeds of 10–15 metres per second (or 25–35 mph), the dragonfly is the fastest flying insect. Alongside this Golden-ringed dragonfly is the 'old coat' out of which it emerged.

The dragonfly has a fascinating life-cycle. The eggs are laid in a pond, and when an unattractive larva with gills hatches it may spend up to four years under water. Then it crawls up a stalk, sheds its coat and becomes—a dragonfly. Immediately, it stops breathing like a fish and starts breathing like any land insect. An incredible and sudden change.

Dragonflies are some of the most impressive fliers in the insect world and their four wings, each powered by two muscles, provides power in both upward and downward movement. Like the hummingbird, their wings can twist,

This dramatic figure shows a Meadowhawk dragonfly in flight.

providing extra speed. However, their wings are incredibly light and fragile and at high speed would flap uncontrollably. But there is a solution: at the tip of each forewing is a small counterweight called a *pterostigma* to hold the wing steady. A brilliant engineering stabiliser because without it the insect would be in the slow lane. How long did that take to evolve? Or was the dragonfly created with everything in place?



The pterostigma *ensures that the lightweight wing, beating at 30–50 cycles per second, remains steady in high-speed flight.*

9. Insects— the bombardier beetle

An incredible creature designed to eject a mixture of chemically heated steam and toxic chemicals out of its back end through a special turret which can be moved in any direction — all without harming itself.

The whole system is used to ward off predators. The beetle generally wins and stuns its opponent. But how on earth does it manage this complicated action?

Simply put, a series of explosions are produced by two chemicals, hydroquinone and hydrogen peroxide, plus another chemical agent (a catalyst) that makes the action faster. Five hundred explosions can be given every second, and repeated like a machine gun.

But that is only the end result. Before the two chemicals react in the tiny 1 mm (0.039 in) long combustion chamber, they travel down a very thin tube together to the chamber where the catalyst causes the hydrogen peroxide to release oxygen. This then combines with hydrogen released from the hydroquinone. The heat from the strong hydrogen/oxygen reaction causes the rest of the chemicals to react and the liquid (mostly water) boils in a violent flash evaporation event. Almost instantaneously the water expands to steam.

There is a special valve system that ensures the steam explosion is very effective and goes out of its backside so that it doesn't blow itself up; also, the combustion chamber is of special heat resistant material so that the beetle doesn't cook itself!

A bombardier beetle demonstrating its ability to fire over its back. The spray can reach up to twenty times its body length of 1–2 cm
(Photo reproduced under Photolibrary, London, licence 4511).

This is clearly another example of 'irreducible complexity' because the whole combustion system will not work unless *all* the design features are perfectly in place. Some suggest that a belief in creation closes down scientific research. However, it was precisely because Prof Andy McIntosh knew the beetle chamber was designed, that led to the investigations resulting in the development of a specialized patented spray.

10. Insects—bees

Bees are incredibly skilled in building precision-engineered, temperature-controlled homes for raising their larvae. And they have a clever communication system as well.

One researcher has described the honey bees' building construction like this:

A natural beehive and honeycomb may contain up to 80,000 bees.

> 'Not until the advent of close-up film techniques did scientists know for certain how bees build their honey stores. It is a remarkable feat of high precision engineering. Young worker bees excrete slivers of warm wax, each about the size of a pinhead. Other workers take the freshly produced slivers and carefully position them to form vertical, six-sided, cylindrical chambers (or cells). Each wax partition is less than 0.1 mm (0.0038 in) thick and is accurate to a tolerance of 0.002 mm. Each of the six walls is exactly the same width, and the walls meet at an angle of precisely 120 degrees, producing one of the "perfect figures" of geometry—a regular hexagon.'

Somehow, bees 'know' that the best packing geometry is not squares but interlocking hexagons!

The way the honey bee worker flies and gathers its nectar, as well as the beeswax produced from special glands, and the pollen balls that it carries for the growing larva, are all evidence of a specially designed creature. The hives are temperature controlled: if too hot, worker bees fan the air with their wings to cool the hive.

A honey bee heading back to the hive with pollen in its basket to feed the young larvae.

Another stunning discovery is that the distance and direction of the best food supply is communicated to the other worker bees by a 'waggle dance'. The angle to the vertical indicates the direction angle relative to the sun. And the number of waggles indicates the distance to fly. Bees can recognize a desired compass direction by the sun, the polarization pattern of the blue sky, and by the earth's magnetic field—all three.

A honey bee sipping nectar from a flower to make honey.

The staggering complexity of this honey bee lifestyle reveals the mind of an engineering genius:

'How great are your works, O LORD, how profound your thoughts' (Psalm 92:5).

11. The heavens— the sun, moon and stars

The sun is a star whose surface temperature and distance are precisely right to provide heat and light on earth. At the same time, the size, position and movements of the moon are perfect for maintaining tides and currents on earth.

Around 5,000 stars and a few galaxies can be seen from the Earth with the naked eye.

The sun is 110 times the diameter of the earth. Although its inner core is 15 million degrees Celsius, its surface temperature of 5527 degrees Celsius is exactly right for heating and lighting the earth safely. The sun is in precisely the correct position to give the right amount of heat to sustain life. Closer in, and the seas would evaporate – further out, and the seas would freeze.

The sun produces 30 million million times the total power that we currently use on Earth. It would take nearly a million years to use the energy that the sun provides in 1 second!

A remarkable design feature is that the moon is approximately 400 times as small as the sun but the sun is about 400 times distant from us than the moon, so this is why we can have a total eclipse when the moon comes between us and the sun. Don't hold your breath—the next one will be on 23 September 2090!

The contribution of the moon is to pull on the Earth and its oceans so that as the moon moves relative to the Earth it drags the water with it. It is exactly positioned to give just the right movement of tides: too close and the tides would swamp the land; too far away and there would not be enough effect to keep the oceans moving and the life in the sea refreshed. As the Earth spins, this effect washes around the Earth causing approximately two tide changes every day.

No one knows how many stars there are. But it has been suggested that there are 20 billion, billion, and if a computer counted three million stars every second, it would take 211 million years to count them all. Those we can see with the naked eye are not simply there for us to enjoy. A more practical purpose is that the regular, ordered and pre-planned movements of the 'two great lights' in conjunction with the planets and stars have provided a completely reliable means of navigation for millennia of travel. They move, not randomly, but perfectly in order—always.

All of this has to be just right for life on Earth. Chance, or design?

'The heavens declare the glory of God; the skies proclaim the work of his hands' (Psalm 19:1).

12. Beauty—trees and flowers

We see beauty in the colours around us, in a sunrise and sunset, the formation of clouds and the magnificence of stars and planets. Trees and flowers add greatly to the human enjoyment of the beauty of planet Earth.

Jacaranda trees in full blossom are typical of the beauty provided by trees.

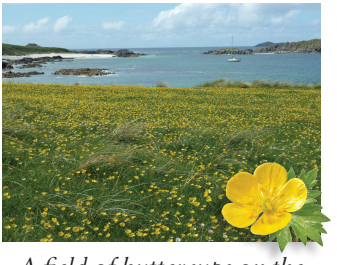
There are over 23,000 species of tree. Softwoods, like cedar, fir and pine are used for building; hardwoods like ash, birch, beech, oak, cherry, mahogany and teak are used for furniture. 'Tone woods' make quality musical instruments such as violins and guitars. Others have exquisite grains for beautiful wood products, and some, like cedar and birch, have pleasant aromatic scents. The leaves of trees soak up harmful carbon dioxide and provide oxygen so vital for planet Earth. Trees provide life, food and shelter for humans, animals and birds.

Trees are also beautiful in every season. We are familiar with the stunning array of autumn colours. Trees do not need to be so attractive just to be useful. They are created for human enjoyment. *'God made all kinds of trees grow out of the ground—trees that were pleasing to the eye and good for food' (Genesis 2:9).*

A beautiful lily with an exquisite scent.

There are over a million shades of green detected by the human eye. Green is not only a restful colour, it is a perfect background for all other colours. The variety, colour and fragrance of flowers is another example of created beauty. They are still used for a variety of medical purposes, but above all, they bring pleasure to humans for their sheer beauty. Even the design of the common buttercup has amazed scientists because of its precision geometry and in producing a glossy effect. A wood carpeted with bluebells is so lovely because it is a contrast to the surrounding colour scheme of a dark wood or open countryside. The blue pigment of bluebells comes from a complex chemical compound.

There is no need for such diversity of colour and beauty simply to attract insects for pollination. This reflects a God who created beauty for our appreciation.



A field of buttercups on the island of Iona, Scotland.

13. Beauty—the peacock

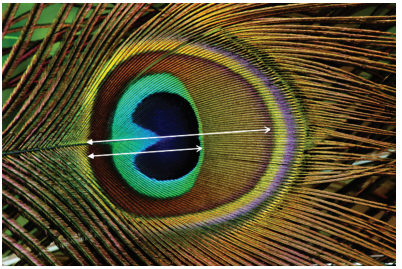
With its beautiful blue neck and crest feathers, white borders to the eyes, the wonderful blue-green sheen to its body and that magnificent fan tail, the peacock surely outshines all other birds.

An adult peacock can open its fan tail almost 360 degrees to surround the entire body. Each feather projects back at a precise angle and each of the 170 'eyes' is visible because the feathers are layered. The shorter feathers are at the front and the longer feathers at the back. Each feather is the right length to produce perfectly even spacing.

The 'eye' is made up from minutely thin layers of keratin (protein fibres that make up hair, nails and feathers). These are dark purple, blue, bronze and green. The structures of the feathers are so precise that they provide the dazzling view to our human eyes. The colours even change with the angle of view, producing an effect called iridescence.

The *golden ratio* describes the perfectly balanced relationship between two objects. It is approximately equal to a ratio of 1:1.618. It was known to the ancient Greeks 4,000 years ago as a proportion pleasing to the human eye. The Parthenon in Athens used it. It is still employed by designers and artists today. Incredibly, the eye of the peacock reveals the *golden ratio*. Is this an amazing coincidence or design?

Pause and admire the detail of the eye. That alone requires huge amounts of precise genetic information to be coded into the DNA of the bird. Only intelligent design can explain the intricate beauty of the peacock.



The detail of the peacock's 'eye' pattern. The ratio of the two lengths is the golden ratio.

By the way, there is no reason why the peacock has to be so elaborate to attract a mate. Sparrows manage it perfectly well! We appreciate the beauty of the peacock far more than the peahen does.

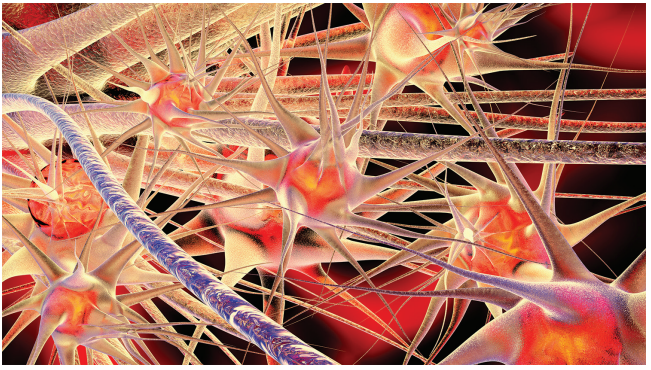
'Ask the animals, and they will teach you, or the birds of the air, and they will tell you; or speak to the earth, and it will teach you, or let the fish of the sea inform you. Which of all these does not know that the hand of the Lord has done this? In his hand is the life of every creature and the breath of all mankind' (Job 12:7–10).

14. The human body—the brain

The brain is the control centre for the entire human body but it's very greedy for fuel.

The brain demands 20% of the oxygen, 20% of the glucose and 15% of the blood supply of the entire body. But at around 1.4 kg (3 lbs) it weighs less than 2% of the bodyweight of an average adult. This is a far higher bodyweight ratio than any animal in creation, and at least five times more than for apes—so we are hardly likely to have descended from an ape-like creature!

A healthy human brain has around 100 billion nerve cells, each of which can have thousands of connections, which means there are hundreds of trillions of connections in the brain. These connections are like microprocessors storing memory, passing on information and solving problems.



An artist's impression of the complex connections of nerve cells in the human brain, all of which helps us to solve problems.

Thinking and learning involves millions of electrical signals travelling simultaneously between networks of cells. New brain connections are created every time we learn something new.

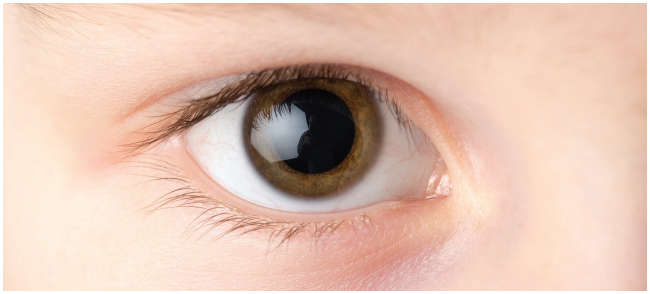
The brain is staggeringly more complex than any computer we have or ever will create. Scientists researching the brain at Stanford University in the USA found that a single human brain has more switches than all the computers in the world combined.

Animals can follow instincts, human instructions or patterns programmed into their creation, but there is no evidence of rational thought in animals. They are incapable of complex decision-making and reasoning even at the level of a young child. Humans are unique in this because they are created in the image of their Creator (Genesis 1:26–27).

'I praise you because I am fearfully and wonderfully made; your works are wonderful' (Psalm 139:14).

15. The human body—the eye

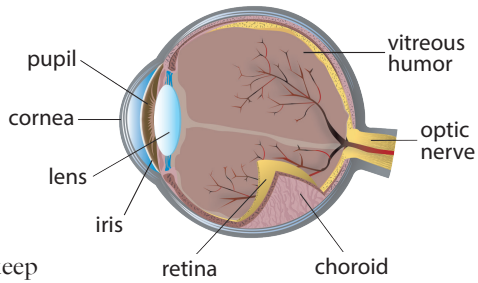
Human engineering has never designed anything as complex and efficient as the human eye.



Look at the detail of the human eye. The *cornea* is like the lens of a camera focusing light into the *retina*. The *iris* controls the amount of light allowed into the eye to reach the *retina* (incidentally it is the *iris* that determines the colour of your eyes). Another lens behind the pupil is like an autofocus camera lens adjusting the size of the pupil.

At the back of the eye, the retina converts the images into electrical signals, like a digital camera. The eyelid is your camera cap to keep

Parts of the Human Eye



dirt out, and a tear duct is the cleaning fluid. At the back of the eye is an optic nerve which acts as the cable to transmit the signals to what is called the *visual cortex* part of the brain where images are processed. That may all sound simple, but it is incredibly complex. When the brain receives these signals, it must analyse them to decide what you are looking at. The brain can correctly identify an image in as little as 13 milliseconds—and it is doing this constantly for millions of images all the time. Robots struggle to identify even simple items.

The optic nerve transmits the electrical signals to the visual cortex and the back of the brain for processing.

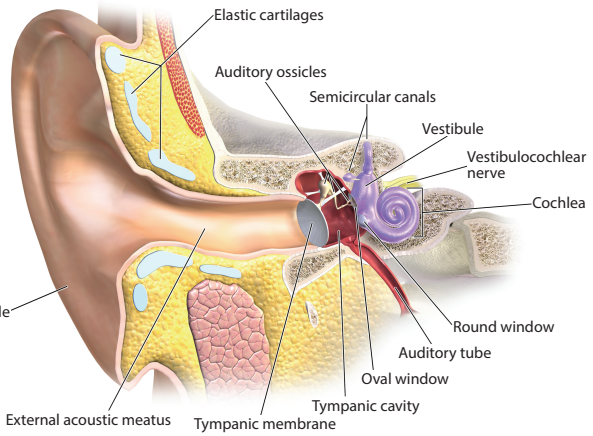
We can change our direction of gaze even when our head is completely still because we can move our eyes within our eye sockets. Cameras are bulky when they can do that sort of thing. Humans can also rapidly focus and re-focus.

Within the eye are around six million *cone cells* for daylight colour vision. This is high density vision without equal. In poor light, *rod cells* help out; these cannot detect colour, but are so light-sensitive that they can respond to the smallest unit of light (known as a photon). In twilight, both cones and rods work together.

All current scientific research concludes that the eye is a masterpiece of engineering design—without a single flaw. And it could never evolve step-by-step; it must be complete at once to work at all.

16. The human body—the ear

The incredible design of the human ear is so intricate that each part must be complete for the ear to function at all.



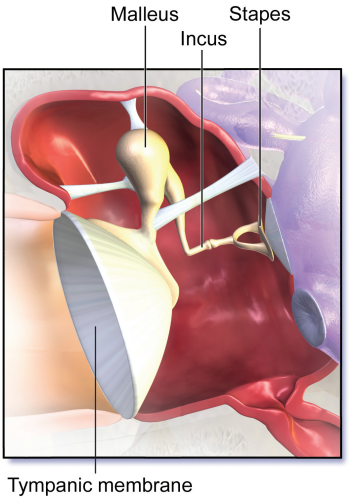
Sound is a pressure disturbance in the air and when we hear something, it is small vibrations of pressure travelling into our ear canal. But that is the simple part.

These vibrations are received by the *tympanic membrane* (like a drumskin) which then press on the *malleus* (hammer) which then pushes into the *incus* (the anvil bone) which in turn moves the *stapes* (stirrup).

Look at the expanded section of the ear.

The *malleus*, *incus* and *stapes* are called the ossicle bones and all three could easily fit onto a 1p coin! These

are the only bones in the body that never grow. These three bones form the 'middle ear' and they amplify the sound ready for the next stage, which gets really complex.



On the big picture find the *cochlea*, which is the 'inner ear'. This snail-shaped organ is filled with fluid. Inside the *cochlea* there is a tapering membrane (like a xylophone) which acts as a frequency analyser, causing different parts of the membrane to vibrate.

Deep inside the *cochlea* is the *organ of Corti* which has minute hairs on it (each of them less than 1/70th the thickness of a human hair) which pass on an electrical signal for each incoming frequency. These minute hairs come in pairs and have a tiny trapdoor on one side which opens with a spring attached to its neighbour. When it opens, it allows electrical ions to stimulate nerves which pass a signal to the appropriate part of the brain.

Without all this complete and working together, we could never recognise the fine-tuning of beautiful music, bird song, or the voice of our loved ones.

'Ears that hear and eyes that see—the LORD has made them both' (Proverbs 20:12).

17. The human body—the heart and lungs

The human cardiovascular system contains heart, blood, lungs and a vast network of blood vessels. Together, they transport oxygen and nutrients around the body, remove waste, cool, heat, heal and fight infections.

The heart pumps blood to the 100 trillion cells in the human body through a staggeringly complex and precise network of around 96,500 km (60,000 mi) of blood vessels. To achieve this, the heart beats approximately 100,000 times a day – that's 35 million times a year or 2.5 billion times over an eighty-year lifespan. The heart is a double pump, which is a perfect design allowing the blood to the lung to operate at low pressure and the blood to the body to operate at high pressure—precisely what is needed.

Blood circulates around the body approximately once every minute providing oxygen and glucose for energy to all the trillions of cells. It also carries hormones, waste products and products of digestion as well as providing the cells with water. Blood has three types of cells: Red to carry oxygen to the cells and carry

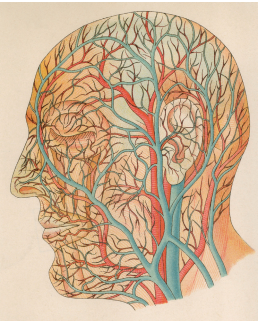
During exercise the blood flow to muscles is increased.

away carbon dioxide, White to fight against disease, and Platelets which help blood-clotting.

No wonder the Bible comments that *'The life of every creature is its blood' (Leviticus 17:14).*

The lungs bring oxygen into the body and remove carbon dioxide. Air progresses into a vast network of airways which is perfectly integrated with the network of blood vessels.

Blood vessels are the highway for the blood. Blood leaves the heart through arteries and enters into many smaller tubes known as arterioles and from these into tiny blood vessels called capillaries. After supplying the cells with all the goodies they need and receiving their waste products, the blood returns to the heart through larger tubes called venules. At this point it is at low pressure and is moving against the force of gravity, so the blood vessels contain valves to stop blood flowing back down. As well as being incredibly intricate, the blood vessel network also has special devices to help alter the flow of blood to different parts of the body in order to regulate the temperature.



Blood vessels in the head alone are incredibly complex.

The whole precise and complex interrelation of this cardiovascular system is yet another example of irreducible complexity. It is far too complex to have evolved step-by-step.

18. A well-stocked planet

Unlike any other planet in the known universe, planet Earth is richly provided with all the materials, both inorganic and organic, to satisfy our human needs.

In Wales, the Pontcysyllte Aqueduct was built of cast iron in 1805, it is 307 m (1,000 ft) long and is still in regular use carrying boats 38 m (125 ft) above the Dee Valley.

There are hard metals like nickel to make coins, soft metals like lead for guttering, lightweight metals like aluminium for cans, super-strong metals like titanium for turbine blades and high-conducting metals like copper for electrical cables.

One of the most important metals is iron and its strength and durability is illustrated all around the world. Tiny amounts of carbon added to iron makes strong steel. Chromium added to this forms the rust free stainless steel in our cutlery.

There are 'precious metals' like platinum, gold, and silver, all of which have their special uses in industry and medical care. Uranium and plutonium are capable of releasing huge amounts of energy, which can have both good and harmful uses.

Rocks are used for solid buildings all over the world. Minerals, such as gems and diamonds, are highly valued. Sand and clay are useful for pottery and cement.

Organic materials include grass, cotton, wool, silk, pearls, feathers, oil, coal, gas and a vast range of wood for many uses. Some of these have been used by the human race for thousands of years.

This abundance of materials to meet every requirement of the human race, from the earliest days to our modern age of technology, is evidence of a planet designed and prepared by a wise Creator for human life.

'For this is what the LORD says—he who created the heavens, he is God; he who fashioned and made the earth, he founded it; he did not create it to be empty, but formed it to be inhabited' (Isaiah 45:18).

19. From paradise to pain

An ordered universe and planet Earth, perfectly designed for all living creatures, is marred by death, destruction and decay.

We have seen the amazing complexity, design and beauty of the world around us. Many stars and planets continue their unchanging orbits. The earth itself is stored with rich minerals, vegetation and creatures for humanity to enjoy. The universe is formed with a spectacular of colour, beauty and perfect design.

Crashing into all this, one tragic event ruined everything. The account of the 'Fall' of Adam and Eve in the Bible is not a legend, it is reality. Paul in the Bible expressed it plainly when he stated that, *'Sin entered the world through one man, and death through sin, and in this way death came to all men, because all sinned.' (Romans 5:12)*. Paul added that the whole creation is in *'bondage to decay' (Romans 8:21)*. No one can argue with that.

As a result of the rebellion of Adam and Eve, God withdrew his protective care. Creatures fought among themselves, the climate across much of planet Earth became unforgiving and inhospitable, even the vegetation fought against mankind's efforts to control it. Disease and death entered. Worst of all, the human race turned against God and against itself with greed, lust and cruelty. This is our world today.

In the Bible God teaches us how to keep relationships pure and peaceful, how to care for the environment, and how to live in friendship with him. Sadly, by ignoring God, death and disease, pain and suffering, violence and cruelty, selfishness and greed have become part of the human story. Order and design are spoiled, beauty is tarnished, harmony is shattered, joy is compromised, and God's bountiful provision is often used by the human race to its own destruction. Suffering became part of the life of us all.

But that is not the end. God has promised something far better.

20. The purpose of life

So many people in this broken world live without God and without hope. But that is not how our Creator intends it to be.

God will not leave the human race and planet Earth for ever in its present broken state. He has promised that the time is coming when he will restore everything as it should be. He will create *'a new heaven and a new earth, the home of righteousness' (2 Peter 3:13)*. We do not know when, but we have God's word for it.

We have seen in this little book that all around us is the evidence of a God who loves beauty, order, design and perfect harmony. Creation shouts so loudly that we are without excuse if we turn our back on God.

Much more than this. God came into this world in the person of Jesus Christ so that through his beautiful moral teaching, his miracles of compassion and care, and his perfect life without sin, we might know what God is really like. Above everyone who has ever lived on earth, Jesus alone could claim, *'Anyone who has seen me has seen the Father.' (John 14:9)*. The life of Jesus Christ, recorded

in the four Gospels in the Bible, perfectly reflects the character of God. This also leaves us without any excuse for ignoring God.

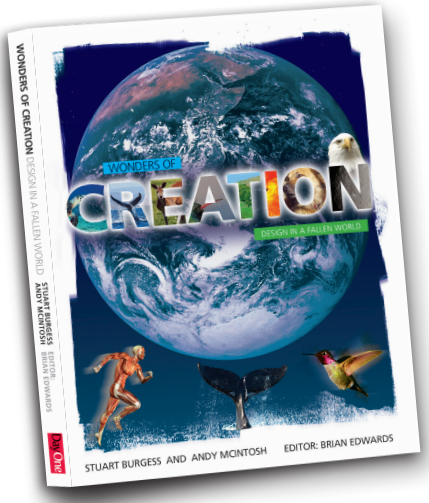
God wants us to enjoy friendship with him and the future he has planned.

But there is a great barrier between us and God. We have all rebelled, gone down our own path and, to a greater or lesser amount, we have messed up our lives and those of others. Even the best among us cannot claim to be without greed, selfishness, lust, anger, and much more. That's sin.

Jesus came into the world not simply to teach good things and model a good example, but to die on the cross and take the punishment for sin that we deserve so that we can find peace with God. He rose from the dead to show that death does not have the last word. He promises us eternal life in the wonderful new creation that is coming.

Preaching in Athens around the year AD 50, Paul declared, *'God commands all people, everywhere, to repent' (Acts 17:30)*. That means, we must own up and tell God the Father we have sinned, thank Jesus Christ for dying in our place and ask his daily help to live a new life. Then we can enjoy a future of friendship with our Creator in his new amazing creation – for ever.

Full details and references for all the items mentioned in this small booklet are found in this superb hardback of 216 pages with over 350 colour pictures.



Obtainable at www.dayone.co.uk
ISBN 978-1-84625-565-6 | REF CREATION

Authors:

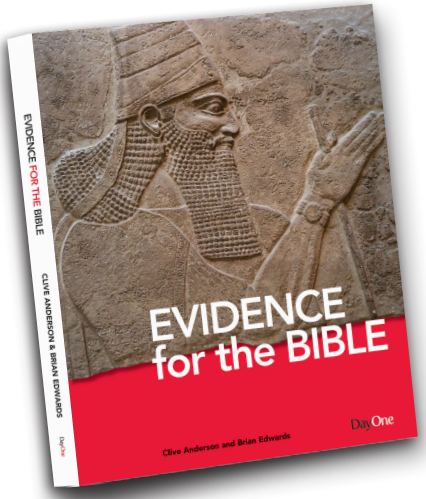
Professor Andy McIntosh DSc, FIMA, CMath, FEI, CEng, FInstP, MIGEM, FRAeS

Andy is a visiting research professor at the University of Leeds and is an adjunct professor at the University of Mississippi, He speaks on creation both in the UK and overseas, and is co-inventor of the novel spray technology based on the Bombardier beetle.

Professor Stuart Burgess BSc, PhD, CEng, FIMechE

Stuart has held academic posts in the Faculty of Engineering at Bristol University, the Engineering Department at Cambridge University and the Biology Department at Liberty University in the USA. He has won numerous national awards for engineering and biologically-inspired design.

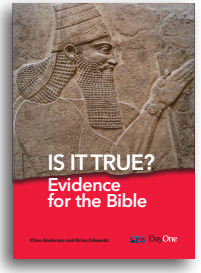
This outstanding companion hardback of 260 pages with over 200 colour pictures shows that archaeology authenticates and illustrates the Bible.



Obtainable at www.dayone.co.uk
ISBN 978-1-84625-416-1 | REF EFB4161

The authors, **Clive Anderson** and **Brian Edwards** have produced a book which is thoroughly researched, informative and a pleasure to read.

A 44-page 'taster' booklet like this one is also available containing a selection from the hardback copy of Evidence demonstrating that the Bible is a book of accurate and reliable history.



Obtainable at www.dayone.co.uk
ISBN 978-1-84625-502-1 | REF IIT5021

Some commendation excerpts for the complete and fully referenced hardback edition of *Wonders of Creation—design in a fallen world*.

'The sheer brilliance of design and the argument of irreducible complexity are presented with compelling and powerful authority'

PROFESSOR JULIAN EVANS OBE, BSc, PhD, DSc, FICFor
Formerly professor of Tropical Forestry, Imperial College, London

'Whether we use the microscope or the telescope, consider the living world, or the wider universe, design that is both wonderful and intricate is clearly seen everywhere'

PROF. STEPHEN TAYLOR BSc, MEng, PhD, DSc, DIC, FIEE, FInstPhys, CEng
Professor of Electromagnetics and Physical Electronics, School of Electrical Engineering, Electronics and Computer Science, University of Liverpool

'*Wonders of Creation* invites us to learn from the natural world … only then can we really appreciate how implausible it is for all this to have arisen without the hand of a wise designer'

DR. STEPHEN MORRIS PhD (Physics)
Industrial Physicist

Joint publication with Christian Prison Resourcing and Day One

Day One Publications
Ryelands Road Leominster HR6 8NZ
Email: sales@dayone.co.uk
www dayone.co.uk
✆ +44 (0) 1568 613 740
✆ Toll Free 888 329 6630 (North America)

Christian Prison Resourcing
PO Box 61685
London SE9 9BL

www.cprministries.org.uk

ISBN 978-1-84625-609-7