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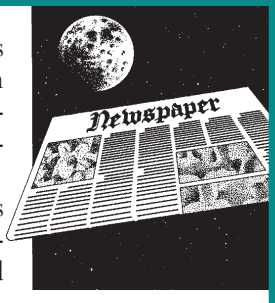
Creation Weekend
to feature
David Coppedge
October 26 and 27, 2012

David Coppedge is one man standing up against NASA, the American governments' space exploration agency. Now that takes courage! Why would anyone undertake such a difficult task? Basically it is a fight for freedom of religion and for freedom to discuss intelligent design during social settings in the workplace.



CSAA brings many interesting and qualified speakers to Alberta. Few however have been involved with NASA in space exploration! This makes David Coppedge particularly remarkable. An information technology specialist and high level system administrator at NASA's Jet Propulsion Laboratory, he worked on the international Cassini Mission to Saturn from 1997 until last year. In that capacity he was heavily involved in all the mission operations and from 2000-2009 in the capacity of Team Lead System Administrator. In addition, on behalf of NASA during those years, he presented the Cassini discoveries to schools and civic and astronomy clubs. One astronomy society in January 2011 urged people to hear this "educational and enjoyable speaker."

David Coppedge is also a prominent apologist for young earth creation and intelligent design. He is a member of the board of Illustra Media, which has produced excellent videos such as *Unlocking the Mystery of Life, Privileged Planed, Darwin's Dilemma* and *Metamorphosis*. He also provides daily commentary on scientific articles which have just appeared. CSAA's website provides a link to the insightful and upbeat *Creation-Evolution Headlines* (which has been operative since 2001). In a more popular vein, David Coppedge has published articles in Institute for Creation Research's *Acts and Facts Magazine*.

During his career at JPL, Mr. Coppedge occasionally shared copies of Illustra Media videos with colleagues. Having complained that he was "pushing religion", JPL fired David Coppedge in January 2011. He brought suit against JPL (funded by American taxpayers) and the institution's private administrator California Institute of Technology. His suit claims protection against religious discrimination under California's Fair Employment and Housing Act. On November 18, 2011, a judge ruled that this case presents legitimate issues of fact and law and ordered the case to move forward to trial. The trial began on March 7, 2012.

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Woodpeckers
Miracle Birds Designed to Peck Wood

By Jerry Bergman

Woodpeckers (family Picidae) are found almost everywhere on the continents except extreme polar regions. Most species live in forests or woodland habitats, and many of the about 30 genera and 214 known species are now threatened due to loss of habitat or habitat fragmentation. The smallest woodpecker is the Bar-breasted Piculet (seven grams and eight cm tall) and the largest is the Imperial Woodpecker (average over 600g (1.3 lb) and 58 cm (23 inches) tall. Some species exhibit differences in appearance of the sexes such as body size, weight and bill length. In such cases, the males are larger.

Most species possess predominantly white, black and brown, green and red plumage and patches of red and yellow on their heads and bellies. The dark areas of plumage often reflect bright colours in direct light. The males of many woodpecker species have more prominent red or yellow head markings than do the less showy brown or gray females. Woodpeckers are active during the day, roosting at night inside tree holes and the roost for most species becomes the nest during breeding season.

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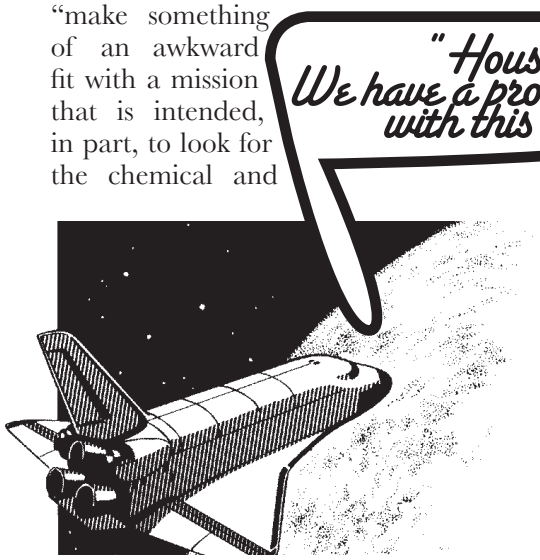
The court case has generated international media attention. A Yahoo News item (March 12/12) was entitled "Suit: NASA Specialist Axed over Intelligent Design." Another item, posted online by TIME Magazine on March 19 was entitled "Legal Smackdown: NASA, Religion and Intelligent Design." TIME's piece suggested that Mr. Coppedge's views "make something of an awkward fit with a mission that is intended, in part, to look for the chemical and evolutionary origins of life, with no role for anything other than the strictly empirical." The article suggested that NASA was entirely justified to object to someone who was a "provocateur" and " a pain", promoting an unpopular view. But it was not the views, but the actions that JPL objected to, said TIME, and besides all NASA did was to "downsize" Mr. Coppedge as a result of a reduced role for Cassini.



On the other hand David Coppedge contends that he was a senior employee in good standing until a supervisor objected to his lending the DVDs Unlocking the Mystery of Life and Privileged Planet to willing colleagues.

The resulting court case therefore is supposed to resolve to what extent an employee really enjoys freedom of religion and free speech in the workplace. Legislation clearly protects this right, but does the law really protect anyone? This California case obviously is an important one. It is expected to run 3 or 4 (possibly even 5) weeks. The judge has viewed the two DVDs and multiple copies have been distributed to the media.

CSAA therefore looks forward to a most interesting and famous speaker! His lecture titles include**:** *Cassini discovers Saturn; Evidences for youth in the Solar System; the Art and Science of Baloney Detecting!;* and *Why the Church must emphasize Creation.* The venue, in Edmonton, is Mill Woods Assembly at 66 St. and 23 Avenue, easy to find with lots of parking!

Mark your calendars now for Friday evening and Saturday all day and evening, October 26 and 27, 2012 in Edmonton! And plan to bring your friends. We look forward to beautiful images and insightful commentary on topics not recently considered in our Creation Weekends.

Expect to be impressed!

Dialogue

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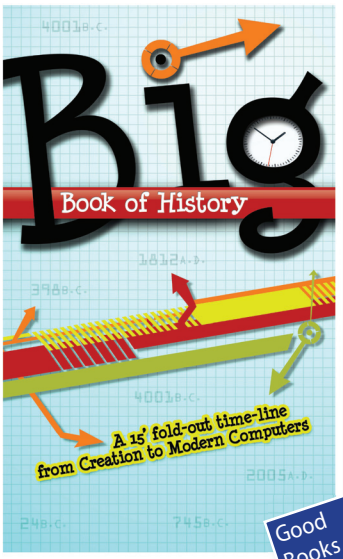


The Big History Book
By Andrew Bain (age 8)

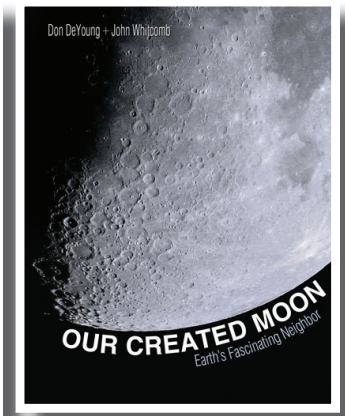
It went on and on. I kept pulling the panels out and there were more. This book is cool because it has real time lines. It goes from the creation in 4004 B.C. to 2001 when the IPod was invented (I'm not talking about the IPod Touch I mean the original IPod)! That is a lot of fast change!

The book tells us about the early people. We follow Bible history, world events, inventions/technology and civilizations/empires. We see what happened all at the same time. Stonehenge in England was built just after the flood. Most history books don't tell us that. And it is funny to talk about, but sort of cool, that the yoyo was invented in 500 B.C.

Later on the Vikings began raids in Europe, about 800 A.D. I love their helmets with the horns. They must have looked scary! We come to Marco Polo and Columbus and the age of discovery. Then there were some important inventions like the first bicycle in 1817 and the first chocolate bar in 1849. We end up with the space age and Russian Yuri Gagarin, first man in space. P.S. I love space.

My Mom says this is just an introduction to get me interested in history. There is a downloadable study guide which also comes in hard copy. I may want to read more later but right now I am too busy reading all about the ancient people like the Romans. I really do like the Romans, but this book is still AWESOME!

Master Books 2011. *Big Book of History: fifteen foot fold-out time-line from Creation to Modern Computers.*



Special Space-Related Resource

In 1978, Don DeYoung and John Whitcomb, wrote the first edition of their book *Our Created Moon: Earth's Fascinating Neighbor.* Since then however, a lot of new information has accumulated about the moon. Furthermore far more beautiful images of the moon and of other space objects have become available. Thus the information was updated in 2003, and a new deluxe edition, complete with beautiful photographs, charts and diagrams, was published in 2010.

The authors present their book as an educational resource, written with a focus on issues related to the creation of the moon. This work is loaded with information and some fairly heavy discussions on issues like the moon's origin, the purpose of the moon, the treatment of the moon in Scripture, distances in space and time, and why the moon looks old. Prior to the more philosophical discussions however, details are presented concerning the location and nature of the moon, its phases and effect on the earth, and a comparison with other moons in the solar system.

Youngsters who are space enthusiasts will no doubt enjoy the diagrams concerning the orbit of the moon, its phases, its effect on earth's tides and the Apollo landings on the moon. However the more theoretical discussions are more suitable to upper junior high age readers. The objective of the book is as a learning resource. So it can be read or viewed for pleasure and later used as a learning resource. Indeed anyone can use it in this dual fashion. After all, as they say, we are all life long learners!

Don DeYoung and John Whitcomb. 2010. *Our Created Moon: Earth's Fascinating Neighbor.* Master Books. Hardcover/full colour. 93 pages.

By Margaret Helder

Natural Firewalls in Bacteria

Sometimes it seems as if information is the most important commodity in our technological age. Information, of course, can be put to good or bad uses. We would all agree, no doubt, that computer viruses are a bad use of information. In that situation, a small piece of computer code (information), once it is inside your computer, can take over the whole operating system, with disastrous results for your interests. Of course such problems are nothing new. The term "virus" comes from natural phenomena that do the very same thing to living cells. Invading information occurs to even the smallest cells, bacteria. In fact, some of the bacteria that most threaten our health, are themselves the victims of invasive information from outside unrelated sources. Consider the case of the infamous *Escherischia coli* 0157:H7, cause of potentially fatal hamburger disease and in some isolated situations, contaminated water.

E. coli (short for *Escherischia coli*), is a normal component of human intestines and dairy animal intestines. In the past, *E. coli* has not been known to cause disease. There are some other similar bacteria which live in the intestines, but which cause nasty diseases, at least some of the time. *Salmonella typhimurium,* for example, lives happily in the intestines of birds and mammals, but should some of these bacteria contaminate human food, these microbes can cause food poisoning in human consumers. Another similar organism, *Shigella dysenteriae*, causes dysentery. This organism produces a particularly dangerous poison. In our society with closely enforced standards for cleanliness, we have not had to worry much about dysentery at least, and most people are pretty careful about the possibility of food poisoning from animal sources.

Our complacency concerning dysentery however, ended with a bang in 1982. In that year, some people in Oregon and Michigan, who had consumed fast-food hamburgers, became very ill with hemorrhagic colitis. Some of them died. Scientists soon discovered that the causal agent in undercooked hamburgers, was none other than *E. coli* itself. But this particular strain was slightly different. It contained a gene for the Shiga toxin, previously known only in *Shigella dysenteriae.*

The next pressing question was how did *E. coli* 0157:H7 become possessed of the Shiga toxin. It so happens that bacteria, even unrelated bacteria, are able to link together by means of thin tubes. Then some genetic material is able to move from one cell to the next through the tiny tube. The process is called "conjugation". Usually the transferred information consists of a small ring of genetic information and this ring is called a "plasmid". Since 1982 we have had to deal with a strain of *E. coli* which can live in cow intestines without problem, but when it contaminates meat which is ground up, or water contaminated by manure, some terrible outbreaks of hemorrhagic colitis have resulted in people.

The question arises obviously, if bacteria can become invaded by a toxin producing gene, what else could bacteria acquire through conjugation? Genes for drug resistance spring to mind and not surprisingly, this process is a major source of antibiotic resistant superbugs (bacteria).

It appears that some bacteria have long possessed genes which confer resistance to antibiotics, even long before the use of these drugs came into common use. Many antibiotics, after all, are natural products produced by other microbes. It is not surprising then that bacteria can pass on antibiotic resistance through the process of conjugation. In hospitals where some patients are being treated for various infectious diseases, the opportunities for diverse strains of bacteria to come into close contact, is high. Thus in 1961 the first superbug appeared in a hospital in the United States. MRSA or methicillin resistant *Staphlococcus aureus* is a much feared bacterium which crops up in many hospitals today. In 2002, strains of *Staphlococcus* resistant to the antibiotic of last resort (vancomycin) began to appear in hospitals. Apparently VRSA had also acquired its resistance through conjugation from a less dangerous pathogen.

Obviously conjugation is a major problem. Bacteria themselves also usually do better when they are not loaded down with extra information which they must express. Recently scientists have discovered that some bacteria have been endowed with amazing systems for eliminating invading pieces of information in the form of plasmids or phage (bacteria infecting) viruses.

Once scientists were able to figure out the order of the genetic code in microbes, then they were able to carry out extensive comparisons between various organisms. Soon scientists noticed a curious pattern in a number of these bacteria. What they observed were repeating blocks of highly distinctive code with unique brief pieces of code in between. The pattern is like an arrangement of beads such as: striped bead, unique red bead, striped bead, unique blue bead, striped bead, unique yellow bead, striped bead, unique green bead etc.

In 1987 the above strange arrangement of coding was described in *E. coli*. It featured an arrangement along the DNA molecule of short highly organized pieces of DNA. These were stretches of code that read the same in opposite directions. For example "Madam, I'm Adam" can be read in opposite directions. This is called a palindrome, and these pieces of code observed in the *E. coli*, were palindromes. Sandwiched between identical palindromes, were other pieces of code, each different from the others. These unique spacers separating the palindromes were brief, for example from 21 – 72 "letter characters" long. Thus there was palindrome, spacer A, palindrome, spacer B, palindrome, spacer C, palindrome, spacer D etc. Scientists have named these collections of information CRISPRs, short for "clustered regularly interspaced short palindromic repeats" of genetic code. Trust the scientists to come up with such fancy terms!

Twenty years would pass before scientists had any good ideas as to the significance of these pieces of code. It now appears that this fancy section of the total bacterial DNA, provides an amazing system for acquired immunity for the bacteria. This system enables many bacteria to maintain their genetic integrity from becoming corrupted by invading genetic elements like plasmids and bacteriophage.

So how does the system work? In the bacterial DNA molecule, the CRISPR system comes complete with a leader sequence at one end, to initiate activation of the system, and a collection of genes for associated proteins at the other end. When a piece of foreign DNA invades a bacterial cell, the leader section causes the CRISPR part of the DNA to be copied into the related information bearing molecule RNA. Then CRISPR associated proteins cut up the long RNA chain into fragments each of which consists of one palindrome with attached unique spacer. It is as if the bead chain mentioned above, were chopped into two bead sections consisting of one striped bead with one coloured bead attached. So there would be a couplet of striped bead with red bead, another couplet of striped bead with a green bead and so on. Each unique spacer is an exact code replica of a part of some foreign DNA that invaded the cell in the past. The spacers remind me of children's adventure stories where a pagan has a string of scalps along his belt to remind him of past foreigners vanquished. The cell next compares each unique spacer with the order of code in an invading plasmid or phage DNA. If there is a match, the associated proteins then chop up the invading DNA. And behold, the invading information has been quickly destroyed!

The short interspaced pieces of unique DNA provide a memory of past invaders into the cell. If there is a match with the invading plasmid, the plasmid is destroyed. What happens however if there is no match? In many cells, the invader goes unchallenged and manages to stay. However occasionally, a cell will manage to capture a piece of the DNA of the invader and incorporate it into the CRISPR apparatus. After that, none of these invaders will be successful.

The other interesting aspect of the CRISPR system is how much variety there is in the system design in different bacteria. It is in the associated proteins that we see the greatest variety, and they direct the operations of the system. Various bacteria exhibit different combinations of associated proteins so that the apparatus and process for matching invader with memory code may be quite different, but the end result is the same.

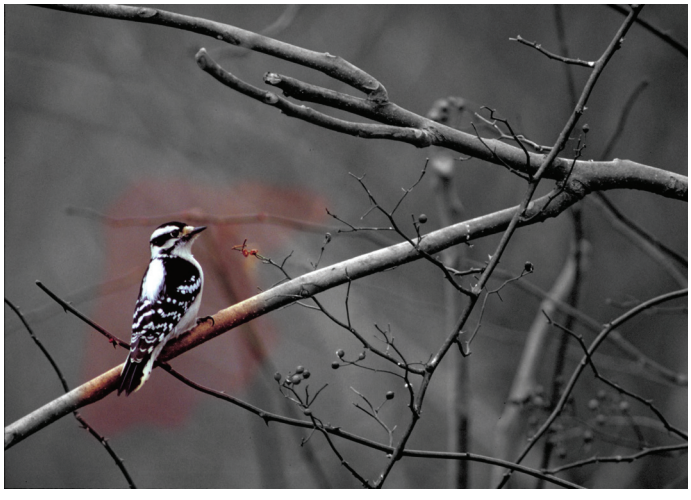
What an elegant system! It appears so minimalist and simple, yet it manages to carry out such sophisticated and highly precise technical tasks. We see information capture, memory storage, memory retrieval and information matching, with the end result of destruction of unwanted damaging information. Who designed this system? Who designed the many similar systems in bacteria to produce the memory, hardware and operating systems which constitute a firewall against hostile invasions of information code? All praise to the Creator of all things great and small!

Woodpeckers Miracle Birds Designed to Peck Wood

Continued from page 1

They are best known for their strong bills used for rapid drilling in trees, and their long sticky tongues for extracting food from the holes. Almost every part of the woodpecker's anatomy is designed for the sole purpose of boring into wood. The bill's chisel-like tip is kept sharp by the bird's pecking action. It pecks so hard and fast that its head becomes a blur to observers. The long sticky tongues possess bristles that aid in grabbing and extracting insects deep within the holes that they make in trees.

The impact with the tree causes the head to decelerate at a rate fully 1,000 times the force of gravitational acceleration (Walker, 2007, p. 5). In contrast to other birds, the woodpecker's beak and skull are joined by spongy, elastic connective tissue designed to function as a highly effective shock absorber. The many features designed to protect their brain from damage caused by the repeated rapid deceleration include a small brain protected by a thick skull, shock-absorbing muscles at the base of its beak, the orientation of the brain within the skull to maximize the area of contact between the brain and the skull, and the short duration of contact. The "woodpecker's brain is attached so well to the skull that there is little residual movement or oscillation of the brain just after the impact and no chance for the tissue connecting the skull and brain to tear" (Walker, J. 2007. *The Flying Circus of Physics. 2nd Edition.* New York: Wiley p. 5).



Male woodpeckers strike the tree as often as 12,000 times a day. About a millisecond before contact with wood, a tough lid-like membrane closes, shielding the eye from pieces of wood bouncing off of the tree. When closed, this membrane also helps to hold their eyeballs in place. The membrane "eyelid" acts like a seat belt to keep the eye from literally popping out of the head, an impact that would tear the eye's retina. The slit-like nostrils are covered with special feathers to protect them from flying woodchips.

After hammering a hole into the wood, their prey is excavated by their long sticky barbed tongue. Their tongue travels in the head under the jaw, around the back of the head and then on top of their brain and is anchored in the right nostril. The left nostril remains free for breathing. Their excavate ability also allows woodpeckers to obtain tree sap, an important source of food for species such as the sapsuckers (genus *Sphyrapicus*).

Their pecking behavior is also used to communicate with other woodpeckers. Actually, many of the breeding, signaling and foraging behaviors of woodpeckers involve drumming and hammering with their very hard and sharply pointed beak.

To locate insects they move up, down, and around trees listening for the faint sounds of insects. This acute sense of hearing enables them to locate insect movements, or the hollow sound made by insect boring holes. When a relevant sound is detected they start to hammer a hole for their prey.

Woodpeckers have short strong legs typical of birds that regularly forage on trunks and specialized feet that consist of four toes. To effectively grasp the tree limbs and trunks the first and the fourth toes face frontward, and the second and third toes face backward, producing a gripping force similar to a pair of ice tongs. They can walk vertically up a tree trunk to forage for food or nest excavation. When the bird perches on vertical surfaces its feet work together to support it, and the stiffened tail acts like a brace to steady the bird.

Their Habitats

True woodpeckers, subfamily Picinae, live mostly in wooded areas. They reach their greatest diversity in tropical rainforests, but exist in almost all suitable habitats, including woodlands, savannahs, scrublands, bamboo-forests and even grasslands and deserts. These habitats are often occupied where a small number of trees exist, or where, in the case of desert species like the Gila Woodpecker, tall cacti are located for breeding and roosting holes. Many

species remain in the same area year-round while others travel great distances from their breeding habitats to their wintering grounds.

Woodpeckers range from highly aggressive antisocial solitary species to those that live in groups. Group-living species tend to be communal group breeders. They hammer on everything from utility poles to metal roofs to make noise to attract mates and to warn other woodpeckers to keep out of their territory (Peck, G. K. 1989 *Woodpeckers*. Smart Apple Media. p. 18).

The woodpecker diet consists mainly of insects, grubs, and sap taken from living and dead trees, along with fruit and nuts. Their major ecological role includes keeping trees healthy by preventing mass insect infestations. Although noted for their ability to acquire wood-boring grubs by using their bills for hammering, the family diet is flexible, and many species are both highly omnivorous and opportunistic. This is a problem for Darwinism because woodpeckers do not require their complex pecking machinery to survive. Their most common insect prey, beetles and their grubs, ants, termites, spiders, and even caterpillars, may be obtained by scavenging, thus no need exists to excavate them from trees by pecking on wood.

Mating

Members of Picidae are typically monogamous, and a pair will work together to build the nest, incubate the eggs, and raise their young. Woodpeckers excavate their own nests, which is usually lined by the wood chips produced as the hole was made. Many woodpecker species excavate one hole per breeding season, which can require about a month in living trees. Their abandoned holes are used by other birds and mammals called secondary cavity nesters. Because nesting holes are in great demand by other cavity nesters, woodpeckers face competition for the nesting sites they excavate from the moment the hole becomes usable. The red-crowned Woodpecker digs its nest in the underside of a small branch, which reduces the chance that a larger species will take it over.

In most species the male does most of the nest excavation and takes the night shift to incubate the eggs and the female takes the day shift. A nest usually consists of 2-5 round white eggs. As cavity nesters, their eggs do not need to be camouflaged, and their white color helps the parents to see them in dim light. The eggs are incubated for about 11–14 days before the chicks are hatched and after about 20 to 40 days the young are ready to leave the nest. Until they do, the parents swallow insects that are stored in their food storage sack called a crop located in their throat. They then bring the food up to feed their young.

Evolution

The evolution of woodpeckers has long perplexed Darwinists. If the woodpecker's complex pecking machine evolved, it had to begin evolving from some existing structure. What made the first "woodpecker" (or would be woodpecker) decide to peck wood? It was not necessary for him to survive, and millions of other birds effectively obtain food simply by picking it off of the ground, or by consuming insects crawling on trees, flying in the air, or floating on the surface of water. Pecking wood would be useless until most of the complex system described above was perfected well enough to obtain food by this unusual means.

Until its acute hearing evolved, how could the first woodpecker determine there was food inside a tree? He could not see it, and could not hear it until his highly acute hearing evolved. Until he evolved the shock-absorbing cartilage between his beak and his head, and his head was thicker than other birds, and his beak stronger, longer, and sharper, pecking would be lethal. Furthermore, until his tail feathers had molted in a specific order he could not prop himself up to peck, and until his tongue was more than a little short thing inside his beak he could not fetch prey in the holes he pecked.

Fossil Evidence

No fossil evidence exists to support the evolution of woodpeckers, and all known fossils, including the oldest so far discovered, are of modern woodpeckers. The earliest known modern picids, clearly woodpeckers, are dated by evolutionists back to the upper Oligocene (said to be about 25 million years ago) (Cracraft and Morony, 1969. *American Museum Novitates* 2400:1-8 Dec. 30). At this time in history woodpeckers were already widely distributed in both America and Europe. Because the earliest known fossils are all modern woodpeckers, evolutionists hypothesize that they must have first evolved long before this, as early as 50 million years ago, but if so where is the evidence?

The modern woodpecker subfamilies are considered rather young by comparison. Until the mid-Miocene (10-15 million years ago), all picids were small or mid-sized birds similar to a mixture between a piculet and a wryneck. A feather found in Dominican Republic amber dated to about 25 million years ago indicates the earliest known woodpeckers, called Nesoctitinae, were already modern woodpeckers. So the next time you see a woodpecker, or hear their distinctive tap tapping on local trees, be sure to reflect how remarkable and unique this bird family is.

Big Book of History

Laura Welch, Ken Ham and Bodie Hodge

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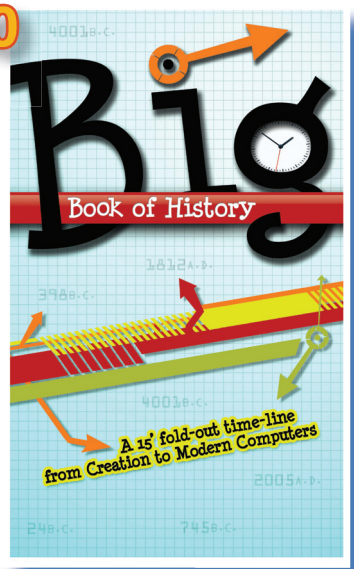

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Untold Secrets of Planet Earth: Dire Dragons

Vance Nelson

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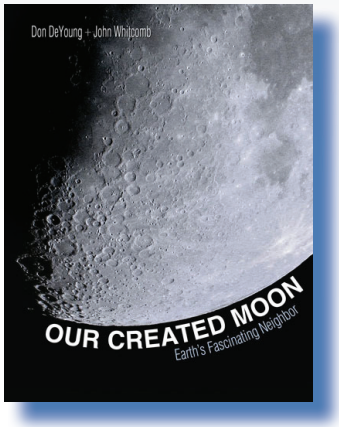


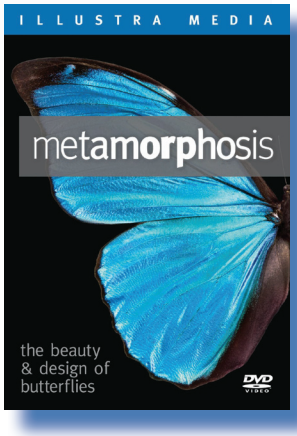
Our Created Moon: Earth's Fascinating Neighbor

Don DeYoung and John Whitcomb

Loaded with images, charts, information and discussion, the objective of this book is as an educational resource with focus on issues related to creation of the moon. While everyone can enjoy the basic information, the discussion itself will appeal from upper junior high to interested adult.

Hardcover
full colour
93 pages

$15.00



Metamorphosis

DVD Illustra Media

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