

Any visitor, upon entering the Royal Tyrrell Museum (in Drumheller, Alberta), could certainly be excused for exclaiming “Wow!” as they catch sight of the first fossil on display. The visitor has already passed through a simulated scene of *Albertosaurus* models, posed as they might have appeared in life. This scene is based on a bone bed of 22 individuals discovered about 1910 by Barnum Brown at Dry Island Buffalo Jump Provincial Park. But we press onward and wow!! There high on the wall to the left in the next gallery is a *Tyrannosaurus rex* skeleton, almost all there, displayed as it was discovered lying in the rocks.

During the summer of 1980, two high school students discovered this specimen preserved in hard sandstone in the Crowsnest Pass area. The specimen is called Black Beauty because manganese minerals have coloured the bone fossils black. This is one of the smallest *T. rex* specimens known, perhaps 6 m (18-20 ft) long. All that is exciting enough, but the feature that causes us to exclaim in wonder, is the pose. The tail is pulled up over the back, and the head and neck are similarly pulled back, the mouth is wide open and the legs are flexed. This is, in short, a classic death pose. But there is no mention of the posture in the museum signage.

Now that museums are displaying fossils *in situ* (as they are found preserved in the rocks), we cannot miss how many of them lie in a contorted “death pose.” We can’t help asking why are so many in the death pose and what is the significance of this strange posture?

Dinosaur specialists and the public alike have pondered how dinosaurs large and small, came to assume this remarkable pose in death. The answers have been varied. In 1986, Loris Russell, veteran dinosaur expert and curator

You too  
can  
be a  
Dinosaur  
Detective!



By  
Moxie

emeritus of the Department of Vertebrate Palaeontology at the Royal Ontario Museum (in Toronto), declared concerning this posture which we see displayed by duckbill dinosaurs and large meat eating dinosaurs and smaller bird mimics: “the dinosaurs appear to have quietly collapsed on their sides in the mud.” (*Rotunda 19 # 2* p. 29 - published by the ROM). Now that explanation does not sound very convincing!

*Continued on page 6*

## Creation Weekend Inspiring and Fun

Not surprisingly, with an upbeat and exciting speaker, the audiences at our Creation Weekend sessions in October 2012 were large and enthusiastic. The final session ended with a standing ovation, which is most unusual for a lecture. So it was that David Coppedge of Santa Clarita, provided amazing illustrations, interesting information and profound insights.

His first lecture was entitled “Cassini Discoveries at Saturn.” First of all, he mentioned for the young and other astronomy enthusiasts, that NASA has sponsored an interactive program on-line. Entitled “Eyes on the Solar System,” <[solarsystem.nasa.gov/eyes](http://solarsystem.nasa.gov/eyes)> is a cross-platform, realtime, 3D-interactive application that runs on a web browser. It provides an extraordinary view of the solar system by virtually transporting the user across space to make first person observations. NASA is currently also developing “Eyes on the Moon.”

The Cassini Mission was named for Jean-Dominique Cassini (1625-1712),



By  
Margaret  
Helder

who discovered various moons of the planet Saturn. After a seven year cruise to Saturn, the spacecraft which had been launched in October 1997, arrived at the planet in June 2004. The four objectives of the project were to study the planet, her rings, the large moon Titan, and the small icy satellites in the rings. Some of the highlights of this presentation included: Enceladus with a diameter of 505 km. This is

*Continued on page 7*

# DIG THROUGH THIS DVD

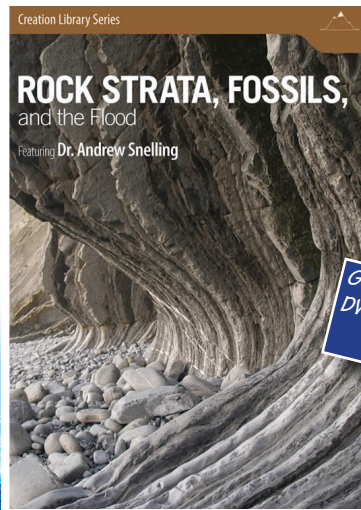


This DVD features discussion by Dr. Andrew Snelling, author of *Earth's Catastrophic Past*, an 1100 page work which discusses multiple issues connected to the worldwide flood of Noah. This man is well known for his work on radiometric dating, some of it with the RATE project from Institute for Creation Research, which examined the significance of various dating techniques for conclusions about the age of the earth. He declares firstly that we only think of the earth as old because we expect the rocks to be old, based on a comparison with geological processes going on today. However instead of the present interpreting the past, we should rather turn our understanding around and realize that what happened in the past, explains what we see in the present.

A hard rock geologist with a Ph.D. from University of Sydney, Australia, in this video Dr. Snelling considers several geological evidences connected to the

flood. For example, marine fossils in numerous rock layers found lying over continents demonstrate that ocean waters flooded over the continents. In addition, extensive fossil graveyards, and the exquisite preservation thereof, demonstrate the rapid burial of animals and plants. Next he considers examples of sediments that were rapidly deposited over vast areas, much more extensively than any normal flood today could achieve. In the same context, we find examples of sediments which were carried across continents. And the smooth deposition surfaces between rock layers indicate that the whole process took place very quickly before erosion had a chance to occur.

Dr. Snelling takes us to a number of interesting locations around the globe which illustrate his points. He also uses suitable diagrams. This 47 minute video is recommended for ages 12 and up, and is produced by *Answers in Genesis*.



## Dialogue

Volume 40 / # 1 / Winter 2013

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

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

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# Wonderful Animals

## The World of Animals

Martin Walters and Jinny Johnson. 1999. *The World of Animals*. Paragon Publishing (My Father's World) and Master Books. \$20.00 (full colour, hardcover with index and glossary)

Every family, whether into science or not, should obtain a copy of this book for the sake of their children (upper elementary through high school). This deluxe book, *The World of Animals*, is a wonderful reference book which describes anatomy and ecological significance of the main groups of animals.

What this book particularly achieves, is to demonstrate the astonishing diversity of animal life in the world. I personally was amazed at the many very different kinds of fish. It sometimes

appears to us as if all fish are basically the same, but this is not so. Of course there is huge diversity among animals without backbones, but we expected that. However even among these creatures, there are more amazing designs than we might have expected.

This book describes the anatomy and basic life cycle of each animal group, and it includes boxes which summarize taxonomic features and groupings, and other boxes which highlight economic significance,

world record holders for some feature such as size, or warnings of danger. The objective is to provide useful and interesting information without evolutionary speculations.

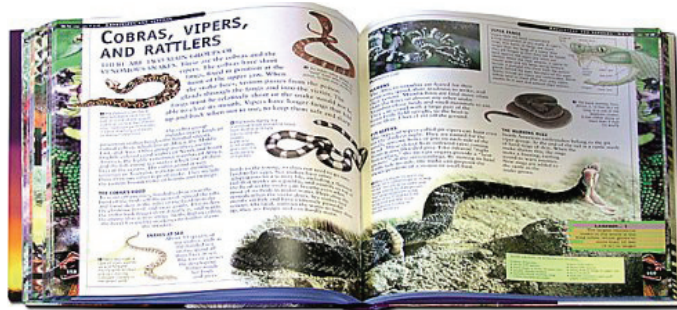
This book shines as a reference or as an interesting introduction to animal diversity. It does not however discuss special design features such as the amazing eyes of box jellyfish or of octopus or squid. It does mention tiny eyes in the mantle of scallop however. That certainly caught my interest, but the text does not elaborate on the feature. Obviously this is a topic for further research! That after all is the function of any reference or introductory book, to kindle interest and curiosity which leads to further research.

Highly recommended as a reference for families and students of all ages. The pictures are fun, the descriptions are not difficult, but the range of creatures described is sophisticated. Thus this book is useful at several levels of difficulty.

## The Fossil Record: Unearthing Nature's History of Life

John D. Morris and Frank J. Sherwin. 2010. *The Fossil Record: Unearthing Nature's History of Life*. Institute for Creation Research. 189 pages. \$14.00 (full colour, hardcover)

This is a very welcome new book. Our catalogues provide



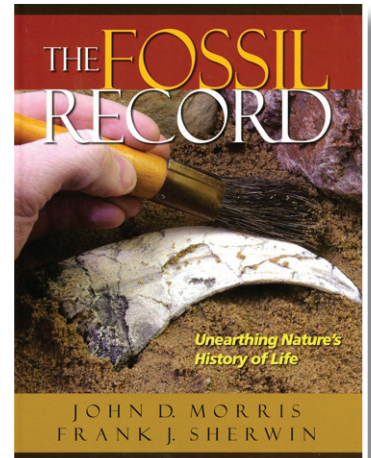
beautifully illustrated books on fossils for young students of the junior high variety, but little that is not highly technical for interested adults. Here we find a nicely illustrated book with discussion at an adult, but not overwhelmingly technical level. On each topic, the authors firstly present the evolutionary argument and then they show how this conclu-

sion does not actually represent the fossil description, location in the rocks and comparison with other fossils. The authors proceed in an organized fashion through the presumed evolutionary events of the past: microbes (said to represent earliest life), origin of animals without backbones, origin of animals with backbones, invasion of the land and special topics like whale origins. The discussion which they provide on these issues are certainly interesting and food for thought.

One highly useful piece of information that they provide is how to think through any issue to avoid being unnecessarily swayed by mere assertions masquerading as facts. One must be a critical consumer of information! Certain questions can be asked of a lecturer/presenter: What do you mean by that statement? What are the implications of that? What are the assumptions upon which those conclusions were drawn? Are there other studies in which different conclusions were drawn? (See p. 62 and p. 96-97). The objective is not to alienate any instructors, but to obtain information on the uncertainties associated with every scientific study. The student and perhaps others, will then be in a position to better evaluate the claims that are being made. If the statements are in writing in a textbook or whatever, then the student can use these questions to research the background to the topic.

This book is documented, but not exhaustively. For example, the authors describe nautiloid fossils in the Grand Canyon and provide no documentation at all. However there is a detailed appendix at the back of the book which does consider the validity of many so-called transitional forms among vertebrates. That section is strongly documented. The information on the connection of fish to four footed animals ("invasion of the land"), is particularly interesting.

Thus for high school students and adults seeking the creation based interpretation of the fossil record and the information on which it is based, this is a great introduction!



# ENCODE PR

You have to wonder how a big science project in biology, which involved 32 laboratories from 10 countries and 440 scientists, and which cost \$130 million, could be controversial with many other mainstream biologists. The lead articles were published in the journal *Nature* on September 6, 2012. What could be controversial about that? Well it transpires that many scientists, who were not involved, did not like the initial thinking on which the project was based, how the research was carried out, and how the conclusions were drawn. What certain mainstream scientists particularly did not like was that so many intelligent design and creation scientists were so pleased.

It all began in the year 2003 when a smaller consortium set out to discover why so much human genetic information seemed to have no function. When scientists in the 1990s set out to document the entire 3 billion nucleotides (like alphabet letters) in human DNA, they expected to find about 100,000 protein coding genes (lengthy pieces of DNA that each determine the structure of one protein). But when the human genome was finally more or less fully described by 2003, scientists declared that the number of genes was much lower. Today the number is placed at about 20,000 genes which occupy only about 1% of the entire collection of 3 billion nucleotides. So what was the rest of the genome doing? Many scientists declared that the rest was 'junk DNA', discarded during the long process of trial and error in evolution. Others cautioned that at least some of the non-protein-coding DNA must have a purpose. Intelligent design and creation scientists, for their part, declared that these "gene deserts" must have a purpose and that we should try to find out what the purpose is.

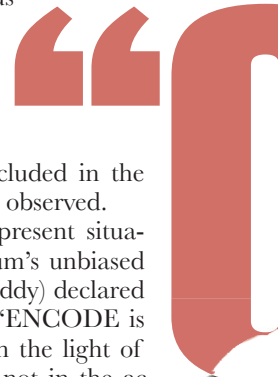
Driven by curiosity about the nature of the genome, in 2003 an international consortium began a systematic survey of 1% of the human genome. This is like looking at everything in a small segment of the night sky. Such a study should give a representative indication of what occurs in the sky as a whole. So it was in 2007 that the ENCODE [Encyclopedia of DNA Elements] consortium released their results.

The initial ENCODE report was interesting enough to encourage the US based National Human Genome Research Institute to fund a study of the whole human genome. As a result, in 2012, a new larger ENCODE consortium published its results in 30 articles. In summary, they found that: "The vast desert regions have now been populated with hundreds of thousands of features that contribute to gene regulation. And every cell type uses different combinations and permutations of these features to generate its unique biology. This richness helps to explain how relatively few protein-coding genes can provide the biological complexity necessary to grow and run a human being." (*Nature* September 6/12 p. 47).

What really annoyed many biologists was the repudiation of the concept of widespread "junk DNA" in the human genome. Commentary on behalf of the consortium had after all declared: "One of the more remarkable findings described in the consortium's entrée paper (page 57) is that 80% of the genome contains elements linked to biochemical functions, despatching the widely held view that the human genome is mostly 'junk DNA'" (*Nature* September 6/12 p. 52). So the good news was that the 'deserts' in the DNA were not junk after all. Another conclusion was that the regulatory system of gene expression in humans is vastly more complicated than we ever imagined!

A large number of other scientists in the field of DNA studies, now objected to every aspect of the ENCODE study. For a start, they did not like the systematic nature of the research. Systematic studies mean that the investigators approach the research without expectations as to what they will find. You might call their attitude neutral for purposes of the study. Thus every observation is equally welcome. Many scientists however prefer to see investigator initiated, hypothesis driven, more "creative" projects. In this case the investigator is asking a specific question and presumably hopes for a specific answer. Details not included in the scope of the question, will not necessarily be observed.

Closer examination reveals that in the present situation, many scientists object to the consortium's unbiased approach to the data. One scientist (Sean Eddy) declared in his blog "ENCODE Says What?" that: "ENCODE is not actually trying to interpret their data in the light of current thinking about junk DNA, at least not in the actual paper." (*Cryptogenomicon* September 8/12 p. 2) The current thinking, of course, is evolution based. He continued: "Personally, I don't think we can understand genomes unless we try to recognize all the different, noisy, neutral evolutionary processes that work in them." (p. 4) In a response to this blog, Gaudiu Bandea concurred: "Surprisingly, ENCODE theory is not explicitly immersed in one of the fundamental tenets of modern biology: Nothing in biology makes sense except in the light of evolution." Yet another scientist (Phil Green) suggested that "We don't exactly look competent when we confidently say first "junk" then "oops, no



# PROJECT

## DISCARDING 'JUNK DNA' FOR GOOD!

By  
Margaret  
Helder

junk,” particularly when we were right the first time.”

It is evident that the consortium approached the study without expectations of what they would find, while the critics insist on an evolutionary interpretation. The latter are thus more closely wedded to the idea of “junk” DNA. The critics begin their discussion by noting that 50% of the genome consists of small pieces of DNA that occur in multiple repetitive sequences, some of which have presumably changed location in the genome multiple times. By definition, they declare that these sequences are junk DNA. Whether those sequences have a function now or not, they say, is irrelevant to the discussion. Any present function, they declare, came from “co-option” or drafting of something for a new function. For example, it is like drafting cardboard boxes to function as chairs and tables. The boxes did not start out with these functions and they were not produced for those functions. But this does not prevent an enterprising person from drafting them for that purpose.

It is true that a large proportion of non-coding DNA consists of pieces of DNA

that can move about (transposons) and other fragments that are repeated almost endlessly.

The initial reaction of scientists was that these phenomena must not have any function. Indeed evolutionary explanations were soon forthcoming for how these simple repeats appeared. Many speculate that moveable sequences are like parasitic viruses that somehow invaded the germ line (reproductive cells). Of course, the newcomer DNA would provide no

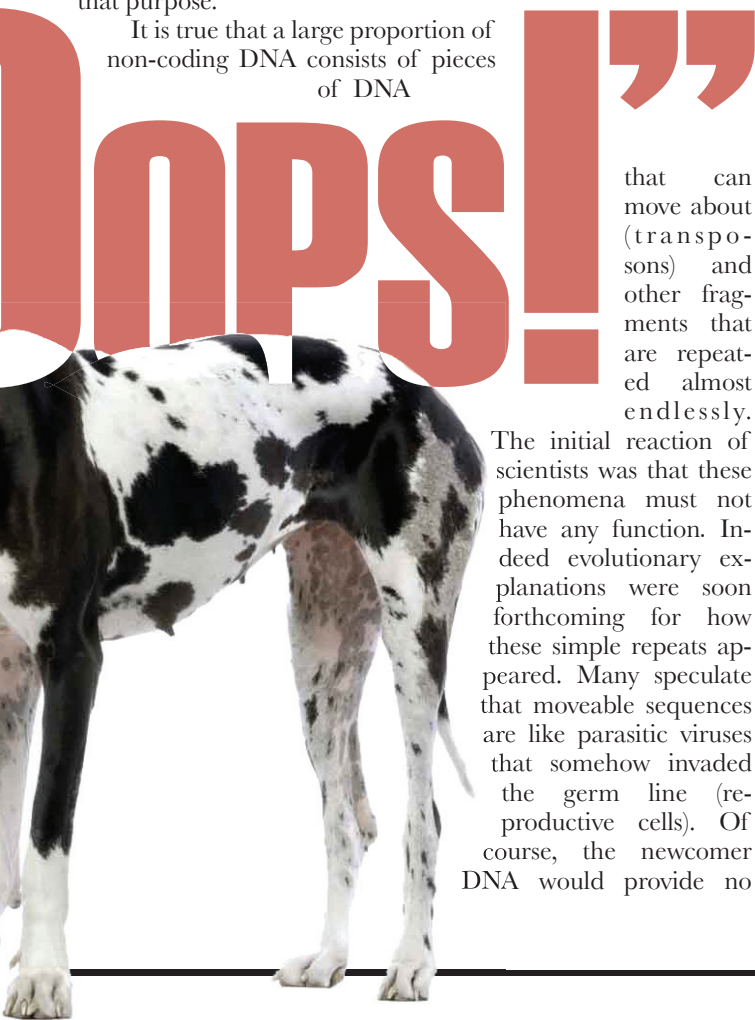
benefit to the cell and probably would exert at least a minor negative influence.

The *Nature* article on ENCODE declared that “a large proportion of the transcripts in the human genome is thought to be initiated from repetitive elements” (September 6/12 p. 105). Obviously nobody really knows where these repeating sequences came from but, based on evolutionary explanations, they are typically judged to have originated outside the organism or its ancestors. Based on such assumptions, any observed functions would be after the fact, a case of the cell drafting a piece of code for a function. Such a suggestion ignores the difficulties of making something so random perform a function which is so precise. In any case, the evolutionists declare that, by definition, repeats and moveable pieces of DNA are junk whatever their role now is. Others, like the ENCODE consortium, declare that a phenomenon which exhibits a function, cannot be junk. Thus the consortium declares that human DNA appears to be at least 80% functional and could even approach 100%.

Publishing in 2005, James Shapiro of University of Chicago and Richard von Sternberg of National Institutes of Health, argued that instead of repetitive DNA functioning like parasites (as had been suggested by L. E. Orgel and Francis Crick in 1980 in *Nature* 284: 604-607), those repetitive sequences are “necessary organizers of genomic information” (*Biol. Rev.* 80 #2 p. 227). They further suggested that “we may come one day to regard erstwhile ‘junk DNA’ as an integral part of cellular control regimes that can only be called ‘expert.’” (p. 243)

Shapiro, in a blog posted by the *Huffington Post* September 12/12, declared about the 2005 article: “Our basic idea was that the genome is a highly sophisticated information storage organelle. Just like electronic data storage devices, the genome must be highly formatted by generic (i.e. repeated) signals that make it possible to access the stored information when and where it will be useful.” Now in retrospect, Shapiro declares that the mobile DNA is a “potent force for genome organization” and most emphatically not parasitic and not junk!

It is evident that the human genome is a highly coordinated information packaging and processing system. We owe the ENCODE consortium our gratitude for describing so many features of the cell, which testify to its wonderful design. These include several tiers of control, the fact that most “junk” DNA can now be defined as useful components (whatever the repetitive appearance it might assume), and that even the straightforward protein coding regions are compressed and highly complex. Who knew that the human genome project would prove to be so enlightening? It would be hard to find a clearer picture of wonderful design than the cells in our human bodies.





# You too can be a Dinosaur Detective!

## Continued from Page 1

That same year, American dinosaur expert Robert T. Bakker described the posture of a huge sauropod *Apatosaurus* (or brontosaurus) as contorted with neck and tail twisted above the level of the back. He declared that this posture provides “the strongest proof of a terrible drought.” It

was his contention that drying had tightened dead muscles and ligaments in the carcass and pulled the skeleton into this strange posture. He continued: “At Sheep Creek, the eighty-foot [24 m] body of a brontosaurus was twisted precisely in the manner of a drought victim. And at Dinosaur National Monument in Utah, a four-hundred-foot-wide stream preserves dozens of gigantic dinosaur bodies all twisted with the huge necks and tails over their backs. Similar scenes of Jurassic death by drying are repeated in quarry after quarry.” (Bakker. *The Dinosaur Heresies* p. 118).

It used to be that few dinosaur skeletons were displayed *in situ* (as found). Thus a bird mimic displayed in an obscure corner of the Great Dinosaur Hall (near the spooky Bearpaw Sea exhibit), was actually way ahead of its time. This *Struthiomimus* specimen was discovered in 1914 in Dinosaur Provincial Park by Barnum Brown. While the original was carted away to the American Museum of Natural History in New York, a cast of the nearly complete and very delicate specimen is displayed in the Royal Tyrrell Museum (as mentioned above). And there it is, the death pose! Until recently, an interpretive sign declared that the carcass had dried out and this was the cause of the strange posture.

There are now several examples of dinosaurs preserved *in situ* in the museum, which display the remarkable death pose. The signage does not call attention to this posture in any of the

other specimens. There is a *Gorgosaurus* (formerly *Albertosaurus*) and a bird mimic *Ornithomimus* displayed in the theropod pavilion (Naylor Hall). There is also a duck bill *Corythosaurus* opposite the *Centrosaurus* bone bed in the Great dinosaur Hall. A book for children, published by the museum in 1999, attributed the *Albertosaurus* (*Gorgosaurus*) posture to drought. A companion book on the *Ornithomimus* specimen printed in the same year, does not mention the posture, but does declare that the bones are extremely fragile and would require very rapid burial to be preserved. (Monique Keiran. *Ornithomimus* p. 21).

How many people have wondered whether the drying explanation was believable? Perhaps not too many. However in 2007, two palaeontologists tested to see if drought could cause a change in posture in a carcass. They found no change at all! The clinical literature instead indicates, they declared, that the animals died in agony, deprived somehow of oxygen. (Cynthia M. Faux and Kevin Padian. 2007. *Paleobiology* 33 #2: 201-226)

Returning now to the obscure *Struthiomimus*, displayed in a death pose, the interpretive sign now reads: “The original specimen, on display in New York .... Was found in this classic “death pose” position.... This pose was originally thought to have been a result of drying neck ligaments, but is now considered to be caused by loss of oxygen to the brain and uncontrollable muscle contraction.” Now what could cause such widespread asphyxiation?

So we can say “Wow!” again. These animals all drowned!! Can you imagine the flooding which could drown 26 m sauropods (very stable on four solid legs), duckbill dinosaurs, large meat eaters, and delicate bird mimic dinosaurs. Of course we have all seen such a posture in the even more delicate skeletons of *Archaeopteryx* from Germany. A terrible flood overtook these land animals large and small. They drowned in agony.

In visits to this or similar museums, be sure to look for *in situ* specimens exhibiting the death pose. Let your inner detective personality freely express itself!



# Creation Weekend

## Inspiring and Fun

### *Continued from Page 1*

the brightest object in the solar system, presumably because this moon is made of almost pure water ice. Plumes of crystals erupt at 120-180 kg/sec at the supersonic speed of 400m/sec. That requires a huge amount of energy. Where does it come from? Tidal friction, which is the usual explanation, is totally inadequate to explain this energy. The moon Mimas, has ten times the tidal friction of Enceladus, and Mimas is cold. Enceladus thus is an excellent example of rapid processes in the solar system which are unexpected if everything is very old.

Everyone agrees, David Coppedge declared, that the rings of Saturn are young. They show far more structure than theory can explain. Impacts are driving ring material outward (not inward) at a rate of 100 km/sec and so the rings are dissipating. One major surprise has been the discovery that break up of ice in the rings has resulted in an oxygen atmosphere in this vicinity. Inspired by these revelations, an even larger audience arrived Saturday morning to hear about evidences for youth in the solar system.

David Coppedge took us on a tour of the solar system beginning with Mercury and working outwards. At almost every point, there were unexpected surprises, an indication that theoretical predictions were faulty. Io, a moon of Jupiter, for example, is the most volcanically active body in the solar system. Here we see the greatest diversity of volcanic activity in the solar system. There are hot spots everywhere and the pattern of heat disposes of the generally accepted model for internal heating (gravitational compression which yields ten times too little energy). The most powerful eruption ever observed in the solar system occurred there in February 2001 and suitable explanations for the event have not been proposed as yet.

Then there is Titan, a moon of Saturn. Here we see methane in the atmosphere dissociating into component elements. When the methane is gone, the atmosphere is expected to collapse. Lead scientists have no explanation for why Titan still has an atmosphere. There is no global ocean and there are dry lake beds. Something is seriously out of sync with scientific explanations. Then there is Neptune, the

most remote planet. It has terrible weather, the strongest winds in the solar system, but the source of the energy is obscure if the planet is old.

For a change of pace, in the afternoon, our speaker discussed the art of baloney detecting. The objective of this light hearted discussion was to enable us all to critically evaluate claims by experts (scientific, political, commercial etc.) He thus defined and gave examples of half-truths, repetition, unflattering association (juxtaposition), loaded words, glittering generalities, ridicule, logical fallacies, pronouncements by "experts" (arguments from authority), ad hominem attacks (insults rather than discussing the issues), red herrings etc etc. One certainly has to be mentally sharp to recognize these tactics and thus preserve a clear understanding of the issues!

Lastly on Saturday evening we heard the keynote message on the Church and Creation. Our speaker began by pointing out that the concept of creation is referred to throughout the Bible. Therefore it is not

of obscure interest to the Christian but is rather foundational. He then discussed the beauty of nature and how Christians must make more effort to get out to enjoy the creation. Just as "nature deprivation syndrome" is a recognized problem today for inner city youngsters, Christians also can feel uplifted when they observe the beauty God has provided around them. Our speaker then discussed the nature of suffering, and how God provides solace. A lengthy list of relevant Bible verses on the topic was made available. On a more scientific note, David Coppedge also discussed biomimetics, amazing examples of design in nature, which technological man copies. The design patent in these cases certainly should not be held by the human inventor who merely copies concepts like the resilience of clam shells for strong materials or a bird's wing structure for aerodynamic flight. He then discussed a few examples of design which demonstrate the need for an intelligent designer.

Among the examples he discussed was the wonder of plant photosynthesis. God has not left himself without witness to his glory in the world.

David Coppedge left Edmonton after his very inspiring presentations. He then proceeded to Kelowna where he presented three lectures and then on to Surrey, where he presented the two lectures dealing with the Cassini program and our solar system.



*A captivated audience and educative discussions at the Creation Weekend 2013 in Edmonton*





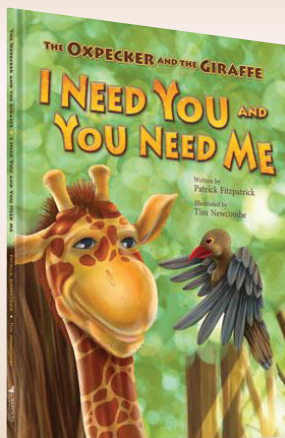
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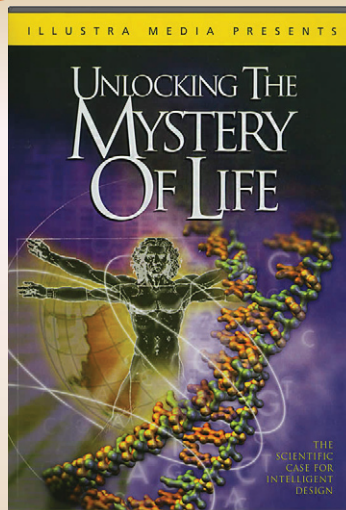
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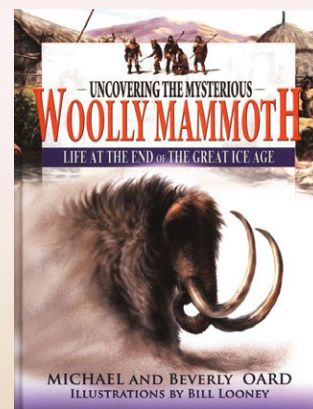
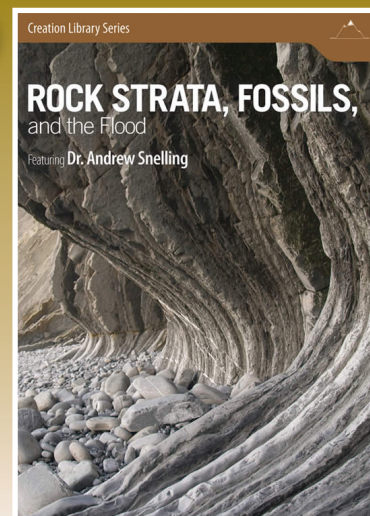
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