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Creation Science dialogue

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Creation Weekend October 26 & 27/2018

Creation Science Association of Alberta is delighted to announce that our featured speaker is biologist Dr. Gordon Wilson. Dr. Wilson is well known in creationist circles for his insightful discussions of living creatures. A regular contributor to *Answers Magazine* and also *Answers in Depth* from Answers in Genesis, his objective in his college teaching and other endeavours is to stir up long lasting wonder and curiosity about life and a greater desire to praise the Creator. To this end, Dr. Wilson has authored a recent textbook on foundational biology called *The Riot and the Dance*. The title references the beauty of creation in its cycles, diversity and relationships (the dance) while at the same time acknowledging the impact of natural evil, a result of God's curse after the fall of man, which results in predators and diseases (the riot). Most recently Dr. Wilson is the narrator of a full length film of the same title as the book, *The Riot and the Dance*. The film is a cinematic celebration of creation in which he showcases beautifully intricate creatures of the world and the good and bad (but always interesting) interactions thereof.

Creation through New Eyes

Dr. Wilson began his career by studying insects (M.Sc. at University of Idaho) and later by studying the reproductive ecology of the Eastern Box Turtle (Ph.D. in Environmental Science and Public Policy from George Mason University in Virginia). Since then he has taught biology at Liberty University and since 2003 at New St. Andrews College (Moscow, Idaho) where he is Senior Fellow in Natural History. Dr. Wilson is active in the community of Christian biologists and in 2005 he hosted a conference on created kinds at New St. Andrews. So, plan to come to Creation Weekend to be informed and delighted with Dr. Wilson's lectures!

The schedule for the weekend is as follows. Following his keynote lecture *Predators, parasites and pathogens: biological evil and the goodness of God* on Friday evening (7:30 p.m.), on the next morning (after light refreshments at 9 a.m.) Dr. Wilson is scheduled to present *The magnificence of the mundane: seeing creation through new eyes* at 10:00 a.m.

With the objective of providing a new more convenient format,

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Sloths

Like no other Animal Family

by Jerry Bergman

Tree sloths are one of the strangest families one could imagine and seem to have very little in common with any other animal kind (Edmonds, p. 38). They are the world's only inverted quadruped (Cooke, p. 52). Sloths are almost comically slow-moving mammals, deliberately moving so slowly that it looks like a movie of them is being played in slow motion. Neither prodding nor threats will make them move much faster, partly because when on the ground, their small legs are so weak that they have to drag their heavy middle along the surface (Cooke, p. 51). A tortoise would easily beat them in a race. Their cruising speed is a mere 0.19 miles per hour, but they can climb a tree at a fairly good clip, for a sloth that is. They often sleep, or appear to sleep, one cannot always tell, about 10 hours a day in trees in the Central and South America rain forests. In contrast to most mammals, they are neither strictly nocturnal nor diurnal, but frequent nappers instead (Hoke, p. 88).

As semi-nocturnal animals, sloths have very large eyes like lemurs. They have poor hearing and comparatively poor sight, and are solitary creatures except for mating and

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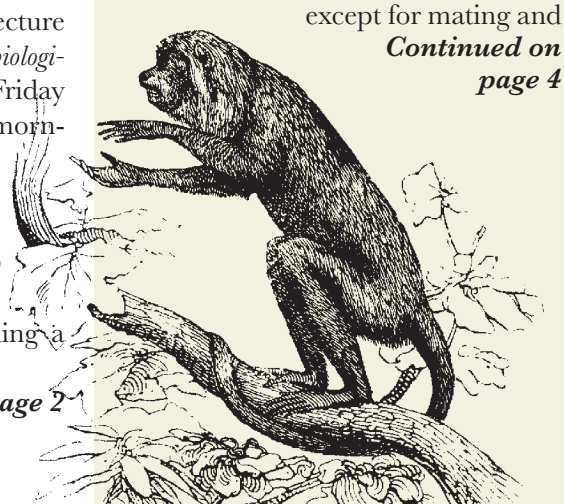

Dicot Dreamers vs Monocot Meanies

Two "teams" of plants compete for popularity

One evening after dinner at our Opa and Grandmum's house, Grandmum told us that we were going to do an experiment called Monocot "Meanies"

vs. Dicot "Dreamers". We each took two styrofoam bowls and put holes in the bottom, and then put in some soil. In one bowl, we planted two soaked bean seeds and two dry bean seeds. In the other bowl, we planted two soaked corn seeds and two dry corn seeds. Grandmum said, "Some plants are Monocot Meanies and others are Dicot Dreamers." She didn't tell us which was which, but that we would know when they came up.

If two leaves (or cotyledons) are present when a flowering plant first begins to grow it is a dicot, if there is only one leaf (or cotyledon) present when a flowering plant first begins to grow, it is a moncot. A week later when the plants came up we could see that corn is a monocot and beans are dicots. The corn won that round because it came up first! We noticed that the soaked seeds came up faster than the dry ones, and that the plants we took better care of were stronger than the others.

Grandmum told us you can still tell if it is a monocot or a dicot when the plant is big. If the flowers have 3 or 6 petals, or multiples of 3 petals, it is a monocot. It if has any other number of flower petals, it is a dicot. When the leaves have straight veins the plant is a Monocot Meanie, and Dicot Dreamers have veins that go in random directions. After a few weeks, we got together with Grandmum and looked at many plants in her backyard. We found that plants like grass are monocots and plants like petunias are dicots. Dicots can grow thick stems, and some become trees. Monocots with their thin leaves can squish close together and each leaf can still get lots of sunlight. In the end, we learned that Monocot Meanies and Dicot Dreamers both win because there is a place in the world for both these kinds of flowering plants!

By Karen, Joanna and Alisha Bain

Creation Weekend
continued from page 1

CSAA has scheduled a ticketed luncheon on Saturday in the noon hour rather than an evening banquet. The luncheon promises to be exceptional. Check our website for price and ways to prebook your tickets. Following the luncheon Dr. Wilson is scheduled to deliver his closing presentation at 2:00 p.m. The title is *A different shade of green: what does biblical dominion look like?*

The excellent presentations are free to all, so bring your friends and family!! The topics deal with important issues not previously covered in our programs. Creation Weekend Friday and Saturday, October 26 and 27 in Edmonton. Venue is Hope City Church (formerly Mill Woods Assembly), 2225 66 St. NW in Edmonton.

See you at Creation Weekend

dialogue

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Book Review

Reviewed by Margaret Helder

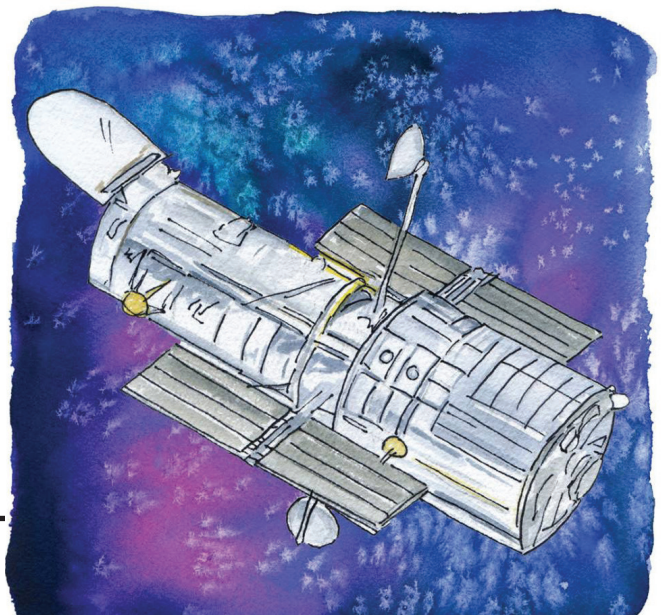
ICR Science for Kids

Space: God's Majestic Handiwork

We have seen it so many times. Eager children dance around their mother as they proceed to pick out books from the public library. The books all look so appealing! Little Johnny is a space fanatic since he has just acquired a new telescope. Ah, here we go, nice books on space! But mother shakes her head. Maybe we can find a book somewhere else that provides better information on space, information that conforms to the biblical record. Well, look no further! Institute for Creation Research has produced a very nice introduction to space for children of kindergarten age to grade 5.

This little book is written in clear language with a larger font size. Colourful drawings illustrate each topic without providing confusing detail. And the issues discussed are comprehensive indeed. We start with creation week and then turn our attention to outer space. A list follows of "smart guys" who studied the heavens in the past. These people helped us understand what we see in the sky. Space is very big, but the Big Bang does not explain it, only Genesis gives us a good understanding of its origin.

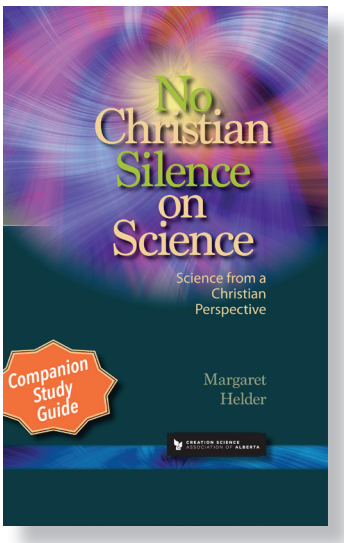
Soon we are conducted through the solar system from the sun, proceeding outward. For each solar body, we learn its significance and other details such as diameter, distance from the sun, is there a ring system, is there a global magnetic field and so on. Past Pluto, the authors discuss asteroids and comets, stars, galaxies, black holes, meteors, auroras, and eclipses. They conclude this section with a discussion of our young universe. Very young children will not care about detailed numbers, but as they grow older, this information provides food for thought and for further reflection.



The beauty of a book like this is that it encourages the reader to see the heavens as a wonderful testimony to the work of our creator God. A glossary, index and lists of further resources encourage us all to continue to learn more about the awe inspiring heavens.

Coming Soon

Companion Study Guide to No Christian Silence on Science



Margaret Helder has developed a guide to enhance the learning opportunities and appreciation of the message in her book (which is to encourage everyone to critically evaluate scientific pronouncements). For each chapter there is a brief overview statement. Brief paragraphs follow for each subsection in each chapter with key concepts introduced. There follows for each chapter a list of questions, many of them involving the key concepts. The next section provides detailed answers for each question. A sure to be popular section follows on resources. These are provided under topical headings. Books, articles (all obtainable) and especially video clips on-line, are certain to be useful for any biological studies, not just for this book. Lastly for each chapter, a section on extension is provided. This booklet of about 60 pages, will be available on line (free download) and in hard copy. Inquire through our website for your copy as soon as it is available.

Sloths

Like no other Animal Family

Continued from page 1

caring for their young. They lack cutting teeth and other defense systems like most mammals. They lack most forms of vocalization except for females that, during mating season, will climb a tree and let out ear piercing shrieks that travel for miles to attract a mate (Cooke, p. 66). Ironically, Hoke claims that they "thrive on human companionship as much as dogs do. Our young daughter found the sloth to be the truest of teddy bears—and one that played *back*" (Hoke, p 91).

by Jerry Bergman

These normal herbivores spend the majority of their time hanging upside down from the branches of the trees they both live in and feed on. They have comical monkey-lemur like faces but are not monkeys. Their faces appear to wear a perpetual silly smile. They live in the branches of many tropical tree types, but their preferred type is the cecropia tree, referred to as the sloth tree for this reason.

The six species are grouped in two families: two-toed and three-toed sloths, which are so similar yet as different as cats and dogs. Thus, they are hypothesized by Darwinists to have co-evolved (Cooke, p. 55). The idea is that these creatures branched some 70 million Darwin years ago, and, evolutionists speculate, their way of life "must have its benefits as it was worth evolving twice." (Cooke, p. 55).

All sloths actually have three toes, but the three-toed type have three 8-10 cm long hooks, for hanging on tree branches and two-toed sloths have two hooks on each forelimb. Their "digits terminate in huge hooked claws, which are effective structures for suspending the animal from a tree." (Whittow, p. 60). Their circulatory system is designed like the flippers, fins, and flukes of marine animals. This system is specially engineered to insure good circulation in their hands and feet while spending most of their time upside down (Whittow, p. 62).

The main problem biologists have with both their classification and evolution is that no other animal is like them, not even close. Designed to live upside down, they are nearly helpless when on all fours, which they rarely are (Hoker, p. 89). They eat, sleep, mate, and even give birth upside down while hanging by their three-inch claws that firmly lock onto tree branches.

Even their hair grows upside down, which is necessary to drain water from their body and prevent them from getting soaked. After a rainstorm, their hair parts down the middle which allows rain to easily run off their wiry hair. In all mammals, hair grows toward the extremities, but sloth hair grows *away* from the extremities. Almost every inch of their body, including their limbs, and excepting only their face and toes, is covered with long, thick coat of hair not like that found on tropical animals but rather Arctic mammals. Their second inner hair coat is very fine downy hair.

The sloth fur can be a small ecosystem of its own. Many sloths have a symbiotic relation with some species of commensal arthropods as well as the blue-green algae (now called cyanobacteria) that thrive on its coat, giving it a greenish color (Perman, p. 35). The algae provide critical nutrients which the sloth absorbs through its skin or by licking its fur.

On the ground, sloths are awkward, but in trees, and even in water, they move slowly, but gracefully. In water, sloths can reduce their normally slow metabolism even further, slowing their heart rate to less than a third of normal. This allows them to hold their breath underwater for up to 40 minutes. They also have an amazing ability to survive severe injuries, such as being attacked by dogs, hit by cars, or zapped by electrical powerlines. Reports include one of falling close to 100 feet to the forest floor without injury and of another surviving for 24 hours in a refrigerator (Cooke, p. 62). How they can survive major trauma that would be lethal to most mortal animals is a mystery. Understanding this feat could be of enormous value to humans.

Digestive System

One of the most unique aspects of a sloth is its digestive system. Its food source consists of leaves that are very difficult to digest, and some kinds that are very toxic. To utilize this diet its stomach is a "multi-chambered monster much like that found in cows" (Cooke, p. 58). Its food may take as long as a month to digest in its multi-chambered stomach.

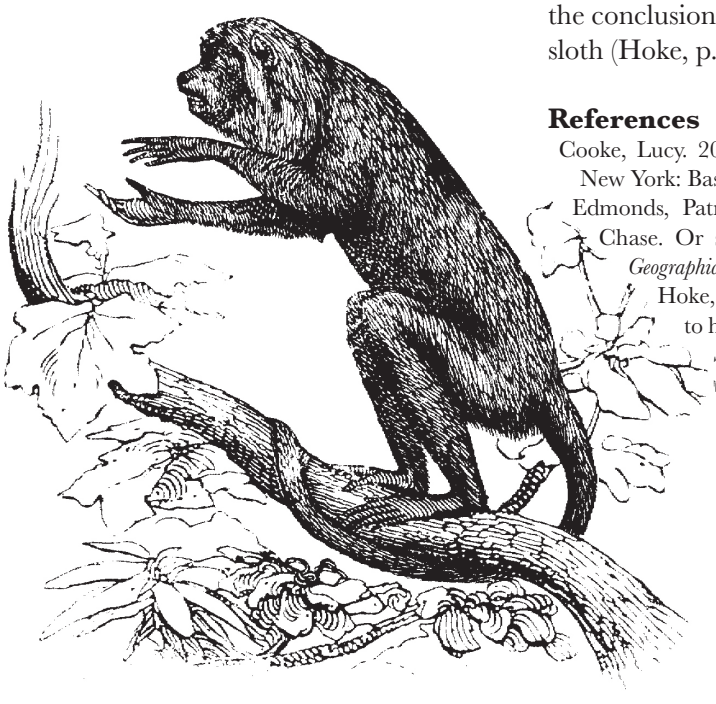
Two-toed sloths have a diverse diet of insects, carrion, fruits, leaves and even small lizards. Conversely, the three-toed sloths usually have a diet limited to leaves from only a few trees. They do not chew very assiduously, and the three-toed sloths even lack front teeth. As a result, the animal requires gut bacteria to break down its barely masticated leaves (Cooke, p. 59). For the gut to work requires a lot of time, clocked by scientists to be a full fifty days from ingestion to excretion.

This, the slowest digestion rate of any mammal, turns out to be ideal because if the digestion was much faster the liver, which detoxifies toxins, could not cope. Self-poisoning could result from the toxins the plants in their diet produce (to protect them from insects) in the food they ingest. Also, the digestion system requires about only ten percent of the physiological work required for a mammal the size of a sloth. Given that their diet provides only about 160 calories for an average day, it is clear that their entire digestive system is very well designed for their lifestyle. Their metabolism, as would be expected, is freakishly low, about half as fast of that expected of a mammal their size. Furthermore, their "blood vessels and throats are uniquely adjusted to swallow food and circulate blood against the force of gravity." (Cooke, p. 59). Although not cold blooded, they can deal with rather large body temperature fluctuations that would kill many mammals. One way is to regulate their metabolism rate. The sloth's body temperature range is greater than that of any other known mammal, from 75 to 91 degrees. They are heterothermic somewhat like reptiles. One reason for the low body temperature is that they have very little muscle mass, thus not much insulation, and their small muscle mass produces less heat than most mammals of their size. Muscles make up only 25 percent of their total body weight compared to most other mammals, which is about twice that of the sloth (Whittow, p. 62). To help keep warm, it can curl up into a ball shape like an armadillo.

Also, like no other mammal, about once a week three-toed sloths climb to the ground to urinate and defecate, digging a hole near the trunk of their tree, helping to fertilize it, then covering it up afterwards. Some research has concluded this ritual is part of their mating behavior.

Taxonomy

Sloths have proved very difficult to classify. Taxonomists did not know where else to put them, so this forced them into the superorder family xenarthral along with two animals that seem to have very little in common with them, anteaters and armadillos. Moreover, the anteaters and armadillos also seem to be so different from each other that evolutionists are baffled as to where all three could have evolved from. So, they were grouped together in one strange unlikely family that is so different they do not even look like distant cousins.



About the only thing these three creatures have in common is an unusually flexible spine (Cooke, p. 56).

For example, the three toed sloth can turn their heads close to 270 degrees, in either direction, useful for consuming a meal while hardly moving their body. Their necks are this flexible because they have "more neck vertebrae than any other mammal's, even a giraffe" (Cooke, p. 62).

No Evidence for Evolution

Darwinists claim they lived at the time of the dinosaurs 65 million years ago (Cooke, p. 60). In spite of being around for a very long time, according to evolutionists, no evidence exists of their evolution (Perman, p. 36). The best guess of Darwinists is that these animals, which are the size of a house cat, are related to non-arboreal land dwelling animals about the size of bears. Another guess is they are related to a *Megatherium*, an extinct species about the same size as an elephant.

They are clearly "an aberration of evolution" (Cooke, p. 54). Although the scientific literature on the animal is sparse, we know more than enough to conclude that no better evolutionary common ancestor has been located after decades of looking, leading to the conclusion that the first sloth was a sloth (Hoke, p. 92).

References

Cooke, Lucy. 2018. *The Truth About Animals*. New York: Basic Books.

Edmonds, Patricia. 2018 The Joy of the Chase. Or sex at high Speeds. *National Geographic*. 234(1):38. July.

Hoke, John. 1987. Oh, it's so nice to have a sloth around the house. *Smithsonian*. 18(1): 88-90.

Perman, Craig. 2016. The Sloth. *Creation* 38(4): 34-37.

Whittow, G. Casey. 1977. Night Shift for Sloths and Other Sluggards. *Natural History*. 87(1): 66-73. January.

Why Fur Coats?

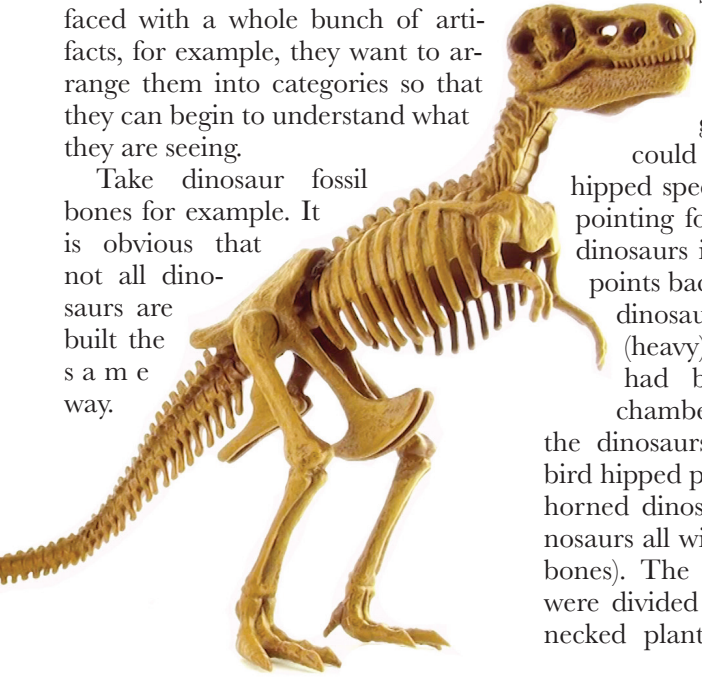
by Moxie

My husband and I recently visited the Philip J. Currie Museum at Wembley in northwestern Alberta. The rationale for building this beautiful new facility was the *Pachyrhinosaurus* bonebed at nearby Pipestone Creek. This horned dinosaur is very interesting, known from bonebeds in Alberta and the north slope of Alaska. The museum did not display a model of the highly concentrated bone bed (up to 200 bones per square metre), nor a skeleton of *Pachyrhinosaurus*, nor a model of the creature (that I saw). They did however display different sizes of one kind of arm bone to illustrate that animals of all ages were overtaken by the same watery catastrophe.

What the museum did display was a number of carnivorous (theropod) dinosaurs in fur coasts. "Why fur?" you may ask. Well this is an interesting story, important to Philip Currie, for whom the museum is named. So, let us begin ….

If you are like me, you probably like to categorize things. Even youngsters love to arrange toys into cars, trucks, blocks, stuffed animals, dolls and so on. Scientists are no different. When faced with a whole bunch of artifacts, for example, they want to arrange them into categories so that they can begin to understand what they are seeing.

Take dinosaur fossil bones for example. It is obvious that not all dinosaurs are built the same way.



Some are slim and trim (of various sizes), others are heavy with long necks, some have horns and huge ruffles and some, with beaky mouths seem moderately stream-lined. Obviously the first step is to group individuals with similar body plans together. As you well know from experience however, there are always a number of ways that one can designate basic categories in any collection. The dinosaur experts however have an additional objective. They want their categories to reflect lines of evolutionary descent.

Firstly, scientists have to assume that the dinosaurs did develop through an evolutionary process. They want to discover what the earliest specimens were like and where the process took them. In the past scientists made value judgments on these issues. Nowadays scientists rely on a mathematical process called cladistics. This is a technique for analysis of evolutionary relationships "that insists on recognizing natural groups only by newly evolved traits that their members uniquely share." [members of the group share the same exclusive trait] (*Nature* March 23/17 p. 494) One problem with this approach however is that many characteristics are not exclusive to only one group. Many features are considered to have arisen several times by "convergence", so they are not unique. So, does the new technique better demonstrate that evolution has occurred? Stay tuned.

In 1887 British Harry G. Seeley suggested that dinosaurs could be divided into lizard hipped specimens (with pubis bone pointing forward) and bird hipped dinosaurs in which the pubis bone points backward. The bird hipped dinosaurs had solid backbones (heavy) and the lizard hipped had backbones with hollow chambers (much lighter). Thus the dinosaurs were divided up into bird hipped plant eaters like duckbills, horned dinosaurs, and armoured dinosaurs all with solid vertebrae (backbones). The lizard hipped dinosaurs were divided up into the heavy long necked plant eating sauropods and the frisky meat-eating theropods like *Allosaurus, Tyrannosaurus rex*, and *Albertosaurus.* They all had chambered back bones. This seemed to work with both the old or new system of categorizing.

A German scientist Willi Hennig, in the 1960s, proposed that one can separate organisms into groups based on possession or lack thereof of any certain specialized condition. Then one looks at all those "haves" and separates them into "have" or "have not", for a further specialized condition. For example, one could separate dinosaurs into "have", or "have not", for hollow backbones. Then one could look at the creatures with hollow backbones and separate them into heavy four footed creatures or bipedal streamlined creatures. One could separate those with solid backbones into those with four footed lifestyles or basically two footed specimens etc. These latter groups would then be separated into new categories.

At each branch (diversification), the condition of the common ancestor indicates that all descendants whatever their further specializations, at least share the characteristics of the common ancestor. Thus if all descendants have hollow back bones, for example, it means that the common ancestor also had hollow bones. Hennig believed that he had demonstrated that you do not need a lot of examples to figure out lines of descent. This technique (cladistics meaning branching) seems very mathematical in that computers are needed to calculate the most likely branching pattern (evolutionary tree). However one *caveat* on the proce-

dure is that the scientists choose which features to include in the analysis and which ones to ignore.

OK so let's try a little exercise. The bird hipped dinosaurs have solid backbones and are vegetarian. The lizard hipped dinosaurs have chambered backbones and some are vegetarian and some are meat eaters. The problem comes when scientists look for an ancestor of birds among the dinosaurs (a long-standing dream of scientists). Birds have bird hips and chambered backbones. They do not fit either of the above categories of dinosaur. Nevertheless specialists look for ancestors of birds among the lizard hips. But what about feathers and the wrong kind of hip? Some like *Deinonychus* and *Velociraptor* actually exhibit bird hips. So their backward facing pubis is something that does not fit the overall group of lizard hips. How did this bone with attached muscles get turned around?

Since the 1980s, when cladistics first became commonly used by many taxonomists, comparisons of bird and dinosaur skeletons convinced most of them that birds are an advanced form of "maniraptoran coelurosauran dinosaur." Maniraptorans are defined as "hand grabbers" with generally long arms. These are a subcategory of "coelurosaur" theropods that include *Allosaurus, Compsognathes, Ornitholestes, Tyrannosaurus* and maniraptorans like *Deinonychus* and *Troodon*. Evidently the coleurosaurs include the bulk of the theropods.

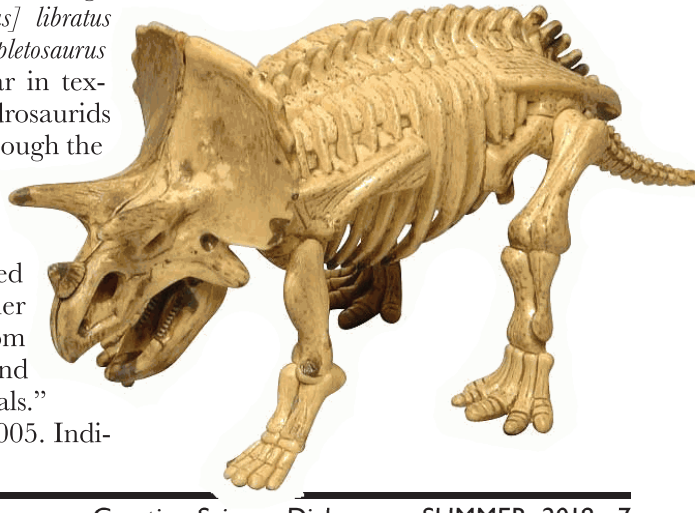
In 1996 a small fossil skeleton was found in China. [Such a specimen, in a death pose, is displayed in the museum.] The scientists called it a bird because it had some kind of smudge around the outside. What was that smudge made of? Examination under the microscope indicated that these were hollow fibres. Were these "primitive feathers" or hairs (polar bears have hollow fur), or what? The Chinese specialists named the creature *Sinosauropteryx* and considered it to be a bird. Later Philip Currie from Alberta, declared that this was a compsognathid dinosaur with "protofeathers". The term "protofeather" suggests that these structures were in the process of developing into true feathers. This is quite a leading assumption! These proto whatevers are "more primitive than any type of feather on modern birds – even the down of baby chicks – the fluff seems to represent an intermediate stage between true reptile scales and modern bird feathers!" (Thomas Holtz Jr. 2007 *Dinosaurs.* Random House Children's Books. p. 114)

Nevertheless in the maniraptorans, some specimens like *Caudipterix* (oviraptoran) and *Sinornithosaurus* (like *Deinonychus)* have been found with true feathers on arms, tails and maybe legs. Therefore "because compsognathids and maniraptorans have some sort of feather structure, scientists recognized that their common ancestor would have had protofeathers too. So if the common ancestor of birds and compognathids had protofeathers, then the tyrant dinosaurs were descendants of the same fuzzy common ancestor." (Holtz p. 119) The whole objective of the exercise is to include birds within the dinosaur category.

And so, based on cladistics, the meat-eating theropod dinosaurs in the Wembley museum are dressed up in most improbable looking fur coats. If the common ancestor had feathers/fur, then they should have too. But is this conclusion reasonable? Philip Currie and Eva Koppelhus wrote: "Skin impressions have been found associated with at least one specimen of *Gorgosaurus* [formerly *Albertosaurus] libratus* and one specimen of *Daspletosaurus torosus.* The skin is similar in texture to that of the hadrosaurids [duck bill dinosaurs], although the individual tubercles are on average smaller and shallower. Patches of skin impressions recovered so far from these and other tyrannosaurs come from the flanks, hind legs and feet of mature individuals." (*Dinosaur Provincial Park.* 2005. Indiana University Press. p. 385) Although they did not observe any feathers, but only scales, Currie and Koppelhus try not to rule out protofeathers altogether. They suggest that these might have occurred on other parts of the body or on young individuals.

So are the fur coats on the theropod dinosaurs justified? One has to accept certain arguments to think so. Firstly one must assume that the dinosaurs are all related through lines of descent. Secondly one must agree that this system of cladistics adequately depicts those lines of descent. But a recent article in *Nature* proposed an alternative quite different separation of the dinosaurs into groups. (Matthew Baron *et al.* 2017 March 23 pp. 501-506.) A strenuous rebuttal, by a long list of experts, was published on-line at *Nature* on Nov. 2/17. Apparently both computer generated trees are equally reasonable from a statistical point of view. The point is that it depends upon the choice of characteristics included in the analysis what the resulting lines of descent are like.

The characteristics of the common ancestors (if any) could all be different depending on the branching pattern chosen and thus the conclusions as to what features these creatures would have shared could be different too. Therefore, it may not be too many years before the fur coats come off these dinosaur models! In the meantime, always ask on what basis were any scientific conclusions made. Arguments may initially appear impressive, but on further analysis, they may appear dubious indeed.



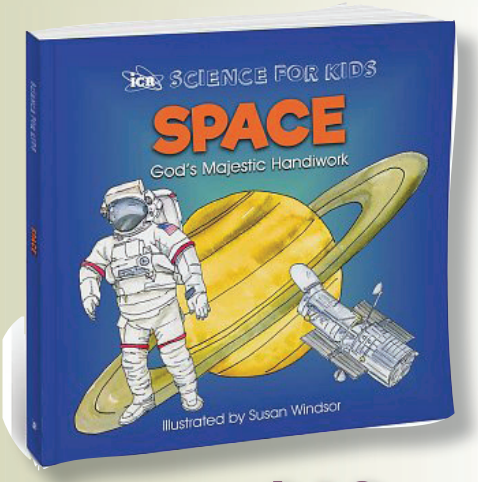
Time is God's way of preventing everything from happening at once! You have some time to read?

ICR authors

Space: God's Majestic Handiwork

The younger set (ages kindergarten to grade five) really love information about science, just not too hard. Here we have a wonderful introduction to all aspects of space, from our solar system to discussion of the whole universe. Fun illustrations and youthful descriptions of the issues are totally ideal for this audience!

Paperback/full colour
111 pages



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Answers in Genesis

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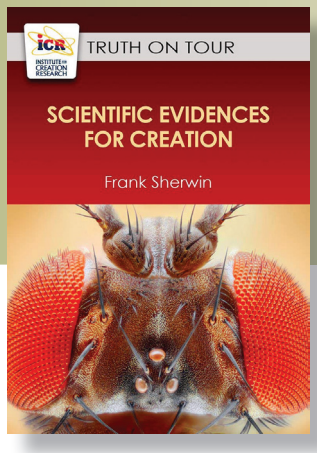

Frank Sherwin

Scientific Evidences for Creation (DVD)

Have humans always been humans? Were animals designed? How can we make sense of the evidence we see? In this presentation, Frank Sherwin explores the scientific wonders and mysteries of God's living creation.

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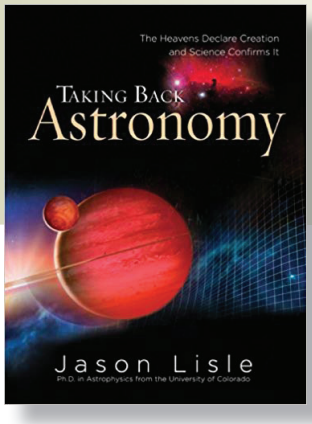

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