

GEOSCIENCE NEWSLETTER

Number 19 October 2009

ANNOUNCEMENT CREATION SABBATH

The Seventh-day Adventist Church has designated October 24 as a special Creation Sabbath. Churches who wish to hold a special service that day can find resources on the web at www.creationsabbath.net. One such service, sponsored by the Faith and Science Council, will be held in Loma Linda, California. More information is available at <http://fscsda.org>.

SECOND CONFERENCE ON TEACHING ORIGINS

The second Conference on Teaching Origins was held August 7-10, 2009, in Colorado Springs, Colorado. Attendees included approximately 50 college and university professors and graduate students, representing at least six countries and several academic disciplines.

A highlight of the meetings was a series of presentations by authors of a book being prepared for contemporary issues in biology. The book is expected to be available in 2011. Other topics included science and religion, death and sin, and the role of intelligent design in



Attendees hear a presentation at the meetings in Colorado Springs. Photo courtesy of Rick Seidel.



The protective cover is moved to reveal the famous Ordovician fossil site in the Harding Formation at the Indian Springs Campground. Photo courtesy of Rick Seidel.

science. Reports of research on fossils were also presented.

The final day of the conference was given for a field trip to the area around Cañon City, Colorado. The group visited a famous Ordovician fossil site, the Marsh-Felch quarry of the Marsh-Cope dinosaur-wars fame, Skyline Drive fossil site, and the Florissant Fossil Beds National Monument.

GEOSCIENCE WEBSITE

The News section of our website posts links to recent news in science and other fields relating to science and Christianity. Here is a sample of items you can access from our News section,

- Velociraptor's* "killing" claws were for climbing.
- Spare gene is fodder for fishes' evolution.

The above topics are included in the September 13 posting. They and others can be accessed at (<http://grisda.org/site/1/news/news.htm>).

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To subscribe, please contact us at newsletter@grisda.org.

BOOK REVIEW

Meyer SC. 2009. Signature in the cell. NY: Harper-Collins. viii + 611 pages. \$28.99.

Stephen Meyer is a leading proponent of intelligent design and Director of the Discovery Institute in Seattle, Washington. His PhD for Cambridge University was an analysis of the history of biological theories on the origin of life, and this book is based on that same topic. The book contains 20 chapters plus some supplemental material at the end. The book is an excellent read and is highly recommended for those with a good basic understanding of molecular biology and an interest in philosophical issues surrounding the origin of life.

Meyer's principal argument is that intelligent design is the best explanation available for the origin of life. He argues his case very effectively through the use of careful analysis, penetrating logic and explanatory stories and illustrations. He carefully reviews alternative hypotheses based on chance alone, natural law, and a combination of the two, and shows that these proposed explanations fail, not only because of a lack of evidence, but because of the very nature of the universe. After revealing the inadequacy of materialistic theories for the origin of life, Meyer deals with the criticisms of intelligent design, showing they are based either on misunderstanding or misrepresentation or both. Meyer's analysis of the nature of historical science, his analyses of chance and necessity as explanations for the origin of life, and his defense of the scientific status of intelligent design combine to make this book a must read for anyone interested in the origin of life or the history and philosophy of science.

SCIENCE NEWS

How heavy was the biggest dinosaur?

Packard GC, Boardman TJ, Birchard GF. 2009. Allometric equations for predicting body mass of dinosaurs. *Journal of Zoology* 279:102-110.

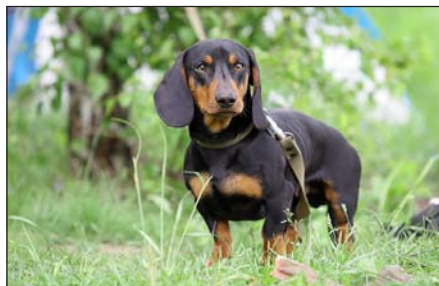
Summary. Recent research suggests dinosaurs may not have been as heavy as previously thought. Two statistical methods for estimating body mass were compared. One method uses a log transformation for analysis and the result is then transformed back to arithmetical measure. This method usually produced overestimates when applied to mammals with known body mass. The other method uses non-linear regression, and produced notably more accurate estimates of body mass when applied to the



Skeleton of *Apatosaurus*, a sauropod dinosaur. Specimen at College of Eastern Utah museum, Price, Utah.

same mammalian data set. The more accurate method was applied to dinosaurs, with the result that estimates of dinosaur body mass were considerably lower than previous estimates. The discrepancy was proportionally greater in larger than in smaller dinosaurs. The largest dinosaur in the study, *Apatosaurus*, was estimated to have a body mass of 18,000 kg, which is roughly half the previous estimates of 38,000 and 35,000 kg.

Comment. Even at 18,000 kg, *Apatosaurus* would be more than twice the 7,500 kg weight of an African elephant. Of course, one should keep in mind that it is not possible to confirm the calculated weight of dinosaurs, since there are none around to weigh!



A dachshund, carrier of a gene for short legs. Photo courtesy of: www.wikipedia.org.

Few Genes, Much Variation

Cadiou E, Neff M, Quignon P, et al. 2009. Coat variation in the domestic dog is governed by variants in three genes. *Science* (online August 27, 2009) DOI: 10.1126/science.1177808.

Summary. One thousand dogs from 80 breeds were studied to determine the genes associated with differences in coat color. Three genes were identified that account for the majority of coat color patterns. This shows that a large degree of variation can be produced by only a few genes.

Parker, GH, VonHoldt BM, Quignon P, et al. 2009. An expressed *Fgf4* retrogene is associated with breed-defining chondrodysplasia in domestic dogs. *Science* 325:995-998.

Summary. A study of 835 dogs from 76 breeds revealed that certain short-legged breeds, such as basset hound, dachshund, Pekinese and corgi, share a gene not found in the other breeds. The extra gene is a retrogene, formed by duplication of an existing gene by retrotransposition. Dogs with the extra gene copy have shorter than normal legs.

Comment. Both studies strengthen the hypothesis that different combinations of a relatively small number of genes may produce a large amount of variation. A 2007 study (*Science* 316: 112-125) showed that a single gene may account for most variation in size of dogs. Perhaps the genome is designed to produce variation by having a small number of genetic "hotspots" that produce many different combinations of genetic factors.

Non-biogenic Petroleum?

Kolesnikov A, Kutcherov VG, Goncharov AE. 2009. Methane-derived hydrocarbons produced by upper-mantle conditions. *Nature Geoscience* 2(8):566-570. DOI: 10.1038/ngeo591

Summary. Petroleum is known to be produced from biological materials, but whether it can be produced inorganically, such as from methane, is unknown. Scientists subjected methane to extreme pressure and temperature in a laser-heated diamond anvil cell. Short-chain saturated hydrocarbons (ethane, propane, butane) were produced at pressures above 2 GPa and temperatures from 1000-1500 K. Above 1500 K, the methane tends to decompose into elemental carbon and hydrogen. The conditions needed for production of hydrocarbons in this experiment are reproduced at depths of 70-150 km in the earth's mantle. Similar conditions are known to support generation of methane by chemical reaction of water, iron oxide and carbonate. This combination of conditions could provide an environment in which inorganic petroleum could be formed. This discovery could aid in locating new sources of oil.



A pumpjack or oil well in Texas. Photo courtesy of www.enermaxinc.com.

Comment. Oil has been assumed to be produced from decomposition of buried organic material, and the large amount of biomass required has been proposed as a problem for creation theory. The discovery that oil might be produced inorganically could provide a partial resolution of this question.