GEOSCIENCE NEWSLETTER

Number 11 October 2007

GRI CALENDAR OF EVENTS

2008 Faith & Science Seminar

A faith and science seminar is scheduled from 13-25 July, 2008, in Loma Linda, California. The seminar is especially designed for teachers of courses involving issues in origins. For further information, see: *http://www.grisda.info/main/for_teachers/faith_and_science_seminar.html* or contact jgibson@llu.edu.

2009 Field School for Teachers

A field conference for teachers is planned for the Denver, Colorado, area from 12-23 July, 2009. More information is available at: *http://www.grisda.info/main/field_trips/teachers_2009.html*.

GRI WEBSITE

For speakers of Spanish, the most recent issue of *Ciencia de los Origines* is available in PDF format at: *http://www.grisda.org/ciencia/73.pdf*

Portuguese translations of our newsletters are available. For example: *http://www.grisda.org/newsletter/07_port.pdf*.

The latest issue of *Origins*, #61, is on-line at: *http://www.grisda.org/origins/ndx-yr.htm#61*. The main article, by Dr. Leonard Brand, discusses the possibility of pre-flood geological activity.

Geoscience Newsletter is an e-publication of the Geoscience Research Institute, 11060 Campus Street, Loma Linda CA 92350 USA.

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

GRI EDUCATIONAL ACTIVITIES

Dr. Earl Aagaard of Southern Adventist University addresses the group.

Origins Symposium, Utah

In July 2007, GRI sponsored a symposium on teaching faith and science. The meetings were held in Salt Lake City, and featured two full days of presentations.

Participants examine a fossil crocodile.

On the final day, the group traveled to Fossil Butte National Monument, in Wyoming, where they could view fossils from this famous Eocene deposit.

Science & Faith, Kenya

Drs. Ben Clausen and Timothy Standish co-taught a course in science and faith for the Adventist University of Africa during the month of July, 2007. The course was presented on the campus of the University of Eastern Africa, Baraton, in Kenya.

The combination of a physical scientist and a life scientist provided an interdisciplinary flavor to the course, and will help equip African graduate students to deal with issues of science and faith.

Graduate students in the science and faith course, with Dr. Tim Standish.

Teachers' Meetings, China

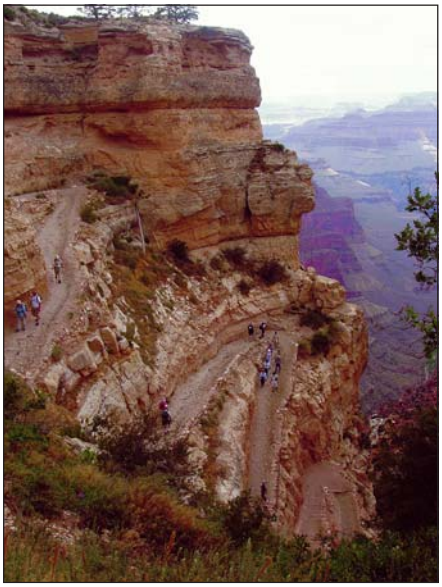
On behalf of the Seventh-day Adventist educational system, a conference on teaching origins was held in August in Kunming, Yunnan Province, China.

Lectures were given by Drs. Tim Standish, Jim Gibson, John Choi, and Miguel Luna to the teachers from Korea, Japan, Hong Kong, and Taiwan.

The group enjoyed a field trip to the famous "stone forest," a region of highly eroded karst formation near Kunming.

A portion of the karst formation known as the "stone forest."

SCIENCE NEWS



The Grand Canyon is formed largely by erosion of Paleozoic sediments.

Paleozoic Sediments Differ from Cenozoic

Peters SE. 2007. The problem with the Paleozoic. Paleobiology 33:165-181.

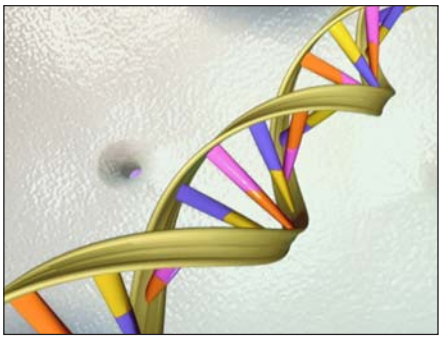
Summary. The problem with the Paleozoic is that Paleozoic depositional environments are so different from conditions existing today that it is difficult to interpret the Paleozoic record. Paleozoic marine rocks have a higher incidence of both unfossiliferous units and deep water environments than Cenozoic rocks. The abundance of unfossiliferous marine sediments might be due to environmental conditions in epicontinental seas, such as anoxia, hypersalinity, and higher rates of sedimentation.

Comment. The Paleozoic presents numerous challenges for understanding earth history. The abrupt change in fossil types between the top of the Paleozoic and the bottom of the Mesozoic layers is one of the most dramatic features of the fossil record. Most Paleozoic fossils are marine, but they are found only on the continents, which were apparently partially covered with relatively shallow seas. Hypersalinity may not be a good explanation for most unfossiliferous sediments. The hypersaline Red Sea has significant biodiversity, and burial would probably produce fossils. Modern epicontinental seas may have reduced salinity due to runoff from rain. Rapid sedimentation might be a better explanation, because it produces high turbidity, unstable substrates, and habitat destruction. Rapid burial and decay of organic matter could produce anoxia. Catastrophic deposition might erode sediments from source areas already depleted in living organisms and produce unfossiliferous sediments.

Comparative Genomics and Baraminology

The ENCODE project consortium. 2007. Identification and analysis of functional elements in 1% of the human genome by the ENCODE pilot project. Nature 447:799-816.

Summary. A systematically selected sample of some thirty million nucleotides was analyzed by the ENCODE consortium. Two especially interesting



DNA structure. Courtesy of: http://cancergenome.nih.gov/media/images.asp

results were that the human genome is mostly transcribed, and that many functional elements vary more than expected when compared among different kinds of mammals.

Comment. Discovery that most of the genome is transcribed, including DNA not coding for proteins, supports a newer view of the genome as highly dynamic, with complex regulatory systems. Such complex genetic interactions seem likely to constrain the kinds of genetic changes that could be viable, and thus limit the kinds of changes seen within a separately created lineage of organisms. Analysis of genetic dissimilarity of functional elements in different species might provide light on the question of how to identify separately created lineages.

For a more expanded comment, see *http://www.grisda.info/main/resources/commentary.html.*

Irreducible Complexity by Natural Selection?

Liu R, Ochman H. 2007. Stepwise formation of the bacterial flagellar system. Proceedings of the National Academy of Sciences (USA) 104:7116-7121.

Summary. The bacterial flagellum is a spiral structure that is used like a propeller in moving the bacterial cell through a liquid. A flagellum typically includes six components, made up of as many as 50 or more different kinds of proteins. Gene sequences for flagellar components from 41 different bacterial species were compared and a set of 24 "core" genes was identified. Sequence similarities among several of the genes are inferred to result from gene duplication and modification or one or more ancestral genes. This is interpreted to show stepwise evolution of the flagellum.

Comment. The evolutionary argument presented in this paper does not address the ID claim that there is no Darwinian pathway that leads to a flagellum through a series of functional intermediates. Rather, it assumes the flagellum evolved and proposes that genetic evidence is consistent with stepwise addition of genes to complete the structure of the flagellum.

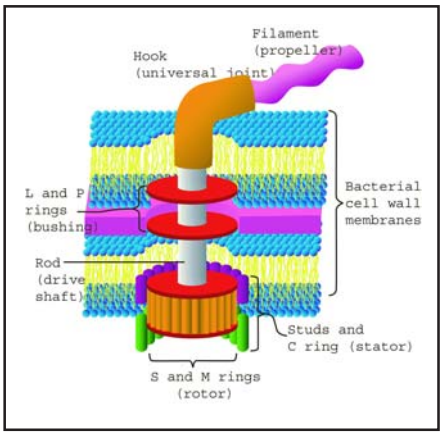


Diagram of flagellar structure. Copyright Timothy G Standish.