



GEOSCIENCE NEWSLETTER

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2014 "BY DESIGN" TEACHERS CONFERENCE

Plans are well under way for the 2014 GRI Field School for Teachers, to be held in Denver, Colorado, July 13-24, 2014. The Field School will feature teaching tips for the new science textbook series, *By Design*, along with several excursions to nearby points of interest.



Dinosaur bone in sandstone at Dinosaur Ridge, near Denver, Colorado. This is one of the excursions planned for the 2014 Teachers Field School.

Teachers are urged to contact their school principals or Conference Superintendents regarding financial arrangements. Further information is available at <http://www.grisda.org/2014-gri-field-school-for-teachers-denver-colorado/>

GRI ACTIVITIES

Creation Weekend in Brazil

A special creation weekend was held at Brazil Adventist University, Engenheiro Coelho campus, May 24-26, 2013. The meetings were organized by Nahor Neves, the Director of the GRI Branch Office for Portuguese-speaking South America.

Speakers included Ruy Viera from the Brazilian Creation Society, Jim Gibson from the GRI home office in the US, and representatives from two GRI Resources Centers, Wellington dos Santos Silva and Marcia Oliveira de Paula.



The new GRI resource center at UNACH features fossil displays and a collection of relevant books and other materials.

Two New GRI Resource Centers in South America

Two new GRI Resource Centers were opened in May, coinciding with a visit by GRI Director Jim Gibson. The two centers are located at the Adventist University of Chile, and Northeast Brazil College, respectively. These Centers add to the two Resource Centers already established at the Peruvian Union University and Brazil Adventist University, Sao Paulo campus. These centers will facilitate interest in creation and research in topics related to origins.



The new Resource Center at Northeast Brazil College, featuring photos and fossil displays.



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GRI Visits West Africa

Origins seminars were held at Valley View University, in Ghana, and Babcock University, in Nigeria, during the month of June. Ben Clausen and Ronny Nalin were the main lecturers at both events. After the seminar at Babcock, Dr. Clausen remained to teach an intensive course in faith and science.



Ben Clausen and Ronny Nalin pose with the group at Babcock University.

GRI Participates in LLU EXSEED Program

Tim Standish and Jamey Cooper of GRI organized two seminars for the ExSeed Program sponsored by Loma Linda University. The first seminar met on June 26 and discussed fossils; the second took place the following day and included a field trip to the San Andreas Fault.

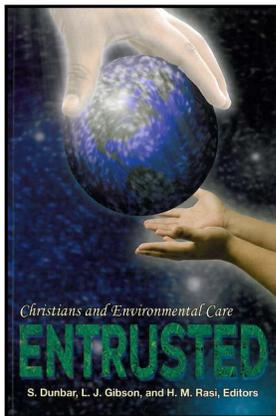


GRI Educator Jamey Cooper explains the significance of the Pelona Schist in the Cajon Pass, near Loma Linda.

CREATION AND ENVIRONMENTAL CARE

Dunbar S, Gibson LJ, Rasi HM, eds. 2013. *Entrusted: Christians and Environmental Care*. *Adventus21*. 286 pages. \$19.95. Available thru <http://adventus21.com/>

This is the first scholarly book by Adventist authors on the relationship between biblical creation and care for the environment. Written by twenty authors, in 23 chapters, the book covers a wide range of topics. Here is a sampling of chapter titles and authors: “How can environmental care be grounded in biblical theology?” by Rahel Schafer; “What



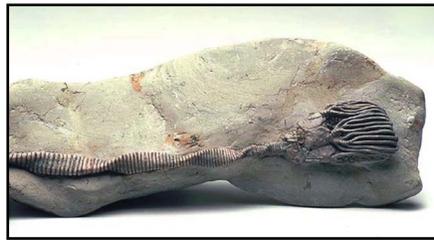
is the relation between the Sabbath and ecology?” by Sigve Tonstad; “What are the ethical issues related to the livestock industry?” by Sandra Blackmer; “How do ecosystems and biodiversity impact human health?” by Stephen Dunbar; and “How do our building practices impact the natural environment?” by Andrew Maur. This book will be useful for Christian university classes dealing with environmental care, and will be of interest to anyone interested in the relation between Christian faith and the environment.

SCIENCE NEWS

Fossil Molecules

O-Malley CE, Ausich WI, Chin Yu-P. 2013. *Isolation and characterization of the earliest taxon-specific organic molecules (Mississippian Crinoidea)*. *Geology* 41(2013):346-350.

Summary. Organic molecules have been recovered from three different



Elegantocrinus, one of the fossil species in which fossil organic molecules were discovered. Photo courtesy of the Childrens Museum of Indianapolis, used under license <http://creativecommons.org/licenses/by-sa/3.0/deed.en>

species of fossil crinoids buried in Mississippian (Lower Carboniferous) sediments in Indiana. The molecules resemble aromatic quinones, similar to those found in living echinoderms. These molecules appear to be the geologically oldest known paleomolecules that are specific to a single taxon, in this case, the echinoderms.

Comment. Preservation of fossil organic molecules seems to be common, much more common than one would expect from the estimated geological ages of the samples. This report, along with hundreds of other reports of fossil organic molecules, suggests a possible basis to question the standard methods of dating fossils.

Genes Out of Place

Walsh AM, Kortschak RD, Gardner MG, Bertozzi T, Adelson DL. 2013. *Widespread horizontal transfer of retrotransposons*. *Proceedings of the National Academy of Sciences (USA)* 110(3):1012-1016.

Summary. Similar genes are sometimes found in species that are unrelated. Since genetic similarity is thought to reflect common ancestry, some explanation is needed for genes that give discordant results. The usual explanation is horizontal gene transfer – that a gene has been transferred from one species to another, generally by a parasite or virus. The repetitive sequence *BovB* is found in many species, including some but not all mammals, lizards, snakes, fish, and other species.

Two types of *BovB* were distinguished. One type was found in many

different lizards and snakes, many marsupials, and sheep and cows. It was also found in two species of ticks, *Amblyomma limbatum*, and *Bothriocroton hydrosauri*. The authors suggest that the *BovB* gene may have been transferred from one species to another by ticks such as these.

The other type of *BovB* was found in an African elephant, rock hyrax, tenrec, platypus, echidna, horse, one type of gecko, zebrafish, sea urchin, and silkworm. No potential vector is known that might have transferred the gene among this disparate group of species.

BovB varies a great deal in its abundance within different genomes. It was not found in tuatara, turtles, birds, or most species of mammals. In horses, it comprises about 0.1% of the genome, while in cows it is more than 18% of the genome. If degenerate copies of the gene are included, it would account for almost 25% of the entire genome. It will be interesting to study the extent to which other genes may have been transferred among species by horizontal transfer.



A female tick, *Amblyomma variegatum*. Use governed by Creative Commons license <http://creativecommons.org/licenses/by-sa/3.0/deed.en>

Comment. The hypothesis of horizontal gene transfer opens up some interesting questions. Where did such DNA sequences originate, and why are they so unevenly distributed among different species? How reliable are molecular phylogenies, which are based on the similarity of DNA sequences? Might horizontal gene transfer have affected embryological development, resulting in change of body form or characteristics? Answers to these questions might have profound implications for both evolution and creation theories.