



# GEOSCIENCE NEWSLETTER

Number 41 April 2015

## UPCOMING EVENTS

**July 2-11** - At the General Conference Session in San Antonio, Texas, please visit our booth, jointly sponsored by the GRI and the Faith and Science Council. Look for the skeleton of a whale!

**July 10** - While in San Antonio, see the world premiere of "Living Waters," the latest documentary by Illustra Media, featuring spectacular footage of design in whales and other marine creatures. Get free tickets for this event.

**October 24** - Creation Sabbath. Use this opportunity to feature the biblical story of creation. For ideas and more information, visit [www.creationsabbath.net](http://www.creationsabbath.net).

## GRI WEBSITE

Visit [www.grisda.org](http://www.grisda.org) for the latest news from science that relates to creation, updated list of resources, GRI activities and dates, and an updated and improved Spanish language section.

## NEW GRI BLOGS

The **March**, 2015 blog is on scientific revolutions – how the scientific community can change its viewpoint quickly.

The **February** blog was on "The role of catastrophes in scientific thinking."

The blog for **January** featured a discussion of "Christianity and the development of science."

## GRI ACTIVITIES

### Faith/Science Class in Cuba

GRI's Ben Clausen taught a course in faith and science for forty seminary students in Havana, Cuba in February, 2015. This is the first GRI visit to Cuba, facilitated by relaxation of travel restrictions by the United States.



*Ben Clausen and his students in Cuba.*

### GRI in Europe

GRI has been active in Europe during March.



*Ronny Nalin at Villa Aurora in Italy.*

Ronny Nalin visited the Italian Adventist Seminary at Villa Aurora in Florence, where he lectured on faith and science to a group of twenty-five faculty and students, and a wider audience following the event on live streaming.



*Raúl Esperante speaks to a group in Estonia.*

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Raúl Esperante and Tim Standish met in Tallinn, Estonia, with a group of about forty pastors and other church workers for a creation seminar.

After the Estonian meetings ended, Dr. Standish visited the Adventist church and school in Tampere, Finland for a



*Tim Standish with Finnish students.*

weekend seminar. Then he reunited with Dr. Esperante in Norway for a meeting on creation and science with some two hundred fifty pastors, teachers and church workers from Norway, Sweden, Denmark and Iceland.

Such visits are useful in preparing church leaders and members to face questions about creation and its relationship to science.

### Visitors Tour GRI Building

GRI welcomes visitors to our offices in Loma Linda, California. Recently GRI hosted a group of students from Cedarville University in Ohio, a group of high school students from Japan, and a group of teachers from Loma Linda Academy.



*Jim Gibson with students from Japan.*

## SCIENCE NEWS



*Geospiza conirostris*, the large cactus finch.  
By Erik (Picasa Web Album) CCbySA3.0

### Galapagos Finch Genetics

Lamichhaney S, Berglund J, Almen MS, et al. 2015. Evolution of Darwin's finches and their beaks revealed by genome sequencing. *Nature* (19 February), 519:371-375. doi:10.1038/nature14181.

**Summary.** "Darwin's finches" includes a group of 14 species of birds restricted to the Galapagos Islands, together with a single species on Cocos Island. All 15 species are believed to share a common ancestor from South America. Whole-genome sequencing was conducted on 120 individuals representing all fifteen species.

Results indicate extensive interbreeding among the different "species," and suggest that some "species" are the result of hybridization. The "species," *Geospiza difficilis*, present in the highlands of six islands, appears to be three separate "species," each of which is more closely related to other species than to other populations of *G. difficilis*. Another "species," *Geospiza conirostris* has populations on Genovesa and Española Islands that are more similar to other "species" than to each other.

Beak shape is important in species identification. The genetic basis of beak shape is not well known, but a gene, ALXi, is correlated with beak differences and thought to be an important genetic factor in determining beak shape.

**Comment.** Interbreeding, hybridization and speciation among Darwin's finches may provide a small window into the kind of diversification of species into different habitats after the flood. As species dispersed from the ark, they would encounter different environmental

conditions, and would have to adapt or go extinct. The results may be seen in the frequent examples of clusters of similar species in different areas, collectively inhabiting those portions of the earth's surface they were able to colonize.

### Synthetic Chromosome Works in Yeast

Annaluru N, Muller H, Mitchell LA, et al. 2014. Total synthesis of a functional designer eukaryotic chromosome. *Science* (4 April), 344(6179):55-58. doi:10.1126/science.1249252.



Bread made with yeast. Photo Daniel J Layton, CCbySA3.0

**Summary.** The yeast *Saccharomyces cerevisiae* is used in baking and winemaking, and as a model laboratory organism. It has 16 chromosomes, with around 6,000 genes. The third smallest chromosome has 316,617 base pairs and probably around 200 genes. Scientists have produced a synthetic chromosome, known as synIII, consisting of 272,871 base pairs, and have shown that it is functional in a living yeast cell.

**Comment.** The ability to manipulate gene activity continues to increase, and we are now approaching the technical ability to design organisms for specific purposes, and even to "create" new kinds of organisms. Some creationists have thought that God would not permit humans to "create" new forms of life. This belief needs to be reconsidered. It appears to be within human technological capacity to modify organisms intentionally. Some creationists have insisted that God would not permit Satan to genetically modify (or "create") new types of organisms. The ability of humans to do this should put to rest such notions. Underlying all these concerns is the question: To what extent is it ethical

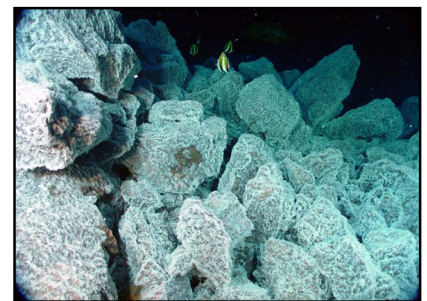
for humans to re-design the Creator's handiwork?

### Stasis Is Evolution?

Schopf JW, Kudryavtsev AB, Walter MR, et al. 2015. Sulfur-cycling fossil bacteria from the 1.8-Ga Duck Creek Formation provide promising evidence of evolution's null hypothesis. *Proceedings National Academy of Sciences (USA)* 112(7):2087-2092. doi:10.1073/pnas.1419241112

**Summary.** Sulfur-cycling bacterial communities are known from the modern deep-sea off the west coast of South America. Similar fossil communities have been discovered in Paleoproterozoic sediments in Western Australia, in sediments dated at 2.3 billion years, and now, at 1.8 billion years in the Duck Creek Formation. Comparison of cellular morphology, community structure and chemical analyses in fossil and modern communities supports identification of the Duck Creek fossils as a sulfur-cycling bacterial community, and shows no evidence of evolutionary change. This is a remarkable example of stasis, and may be attributed to the physical stability of such sub-seafloor environments.

**Comment.** Stasis is the lack of morphological change. The authors suggest this is due to lack of environmental change, but stasis is a common feature of the fossil record. This observed fossil pattern is directly contrary to Darwin's predictions that every geological stratum should show evidence of slow, gradual evolutionary changes. These sulfur-cycling bacteria are striking examples of the failure of Darwin's prediction.



Boulders covered with bacterial mats on East Diamante Volcano, Mariana Islands. Note fish for scale. NOAA.