

GEOSCIENCE NEWSLETTER

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SEMINAR, NE BRAZIL

Some two hundred individuals attended a seminar on creation and science at Northeast Brazil College, from 10-12 November 2010. Five GRI



Presenters at the Creation Seminar at Northeast Brazil College.

scientists from the US and South America presented lectures on topics ranging from fossil whales to world-views.

Immediately after those meetings, a second conference was held in nearby Salvador, the third largest city in Brazil.



Raúl Esperante responds to a question during the discussion period. Photo by Welton Araujo.

Approximately 250 individuals attended as the GRI team presented a series of talks similar to those at the College, but designed for a wider audience..

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Pioneer Memorial Church at Andrews University. Photo by Tim Standish.

CREATION CELEBRATIONS

A "Celebration of Creation" was held at Andrews University, in Berrien Springs, Michigan, from October 22-23, 2010. Twenty different speakers presented short talks on a variety of biblical, scientific and philosophical topics relating to creation. This was the second Celebration of Creation weekend sponsored by the Faith and Science Council (FSC); the first was presented at Loma Linda University in October, 2009. The next Celebration of Creation program, sponsored by the FSC, will be presented at Avondale College in Australia, from May 6-7, 2011.

Local churches are encouraged to celebrate "Creation Sabbath." See: <http://creationsabbath.net/> for more infor-



Children participating in a Creation Sabbath celebration at the Port Macquarie (Australia) SDA church. Photo by Margaret McKay.

mation and suggestions. The Port Macquarie SDA Church in Australia recently held a Creation Sabbath celebration, and graciously provided us with a photo of the event.

DARWIN VIDEO ONLINE

"Darwin Revisited" is a video prepared by the British Hope Channel, and features interviews with four British scientists. The video has been divided into six segments, which can be accessed on YouTube, as follows:

Part 1: <http://tinyurl.com/4ky9wwu>

Part 2: <http://tinyurl.com/4c4gqke>

Part 3: <http://tinyurl.com/4ccas2s>

Part 4: <http://tinyurl.com/4ap2pm8>

Part 5: <http://tinyurl.com/4vmdlx5>

Part 6: <http://tinyurl.com/46xhdpv>

CREATION STATEMENTS

In view of the attention given in the public media to the topic of origins, stimulated in large part by the anniversaries of Charles Darwin's birth and publication of *The Origin of Species*, various entities within the Seventh-day Adventist Church have determined to speak out about creation. One of the most important statements is that prepared by the SDA Theological Seminary of Andrews University and voted by the Seminar faculty on April 30, 2010. The text of the statement is found on-line at <http://tinyurl.com/4foszw7>.

An earlier statement on creation was voted by the faculty of Southern Adventist University in September, 2004. That statement may be found online at <http://tinyurl.com/4vged5d>.

Our own informal statement affirming creation can be found on our website at <http://www.grisa.org/>.

BOOK REVIEW

Fodor J, Piattelli-Palmarini M. 2010. *What Darwin got wrong*. New York: Farrar, Straus and Giroux. 264 + xx pages. \$26.00 hardcover, \$16.00 paper.

The point argued in this book is that natural selection is not an adequate explanation for the origin of the diverse forms of life. This is a risky claim for anyone in academia, as the typical response is to vilify the reporter and marginalize the complaint as contaminated by religious concerns. The authors attempt to avoid this diversion by emphasizing their commitment to atheism and the non-religious basis for their position (p xiii).

Jerry Fodor teaches philosophy and cognitive science at Rutgers University, while Massimo Piattelli-Palmarini teaches cognitive science at the University of Arizona. Both authors are conversant with evolutionary biology, both believe that evolution did occur, and both hold that there is no need for anything supernatural to explain evolution. One might then wonder what their reason is for doubting natural selection. The answer, according to these authors, involves both logic and evidence.

With respect to logic, the authors criticize the neodarwinian belief that “evolution is a process in which creatures are selected for their adaptive traits” can properly be inferred from the statement that “creatures with adaptive traits are selected” (p xv). Selection works on entire organisms, not on individual traits. The tendency to regard selection acting on individual traits is compared to the “beanbag genetics” criticism made by Ernst Mayr (p 25).

Another logical problem is the lack of “counterfactuals” in evolutionary theorizing. In order to show that a specific cause produces a specific effect, one needs to show also that lack of the cause results in lack of the effect.

But this requires controlled evolutionary experiments, which cannot be done after the fact.

Evolutionary theory is more a natural history than a science, and history is about unique events rather than general predictive laws. “Selection cannot, as a matter of principle, be contingent upon (merely) counterfactual outcomes. That, in a nutshell, is why we think that selectionism cannot be true” (p 112).

The lack of general laws governing evolution leaves it without any theory. “What had to happen is the domain of theory, not of history; and there isn’t any theory of evolution” (p 152).

The evidential problem with natural selection is, in part, that many genes are remarkably similar in all organisms. This is contrary to evolutionary expectations, in which genetic differences are thought to be the basis on which selection can produce new types of organisms.

Alternatively, genetic differences between species may not reflect selection after all. Biased gene conversion may result in genetic differences in species thought to be related. Further, many mutations have no phenotypic effect, so are not subject to selection.

Natural selection may operate in nature, but it does not explain evolution. Evolution is about development of body forms, and natural selection does not explain that. The real secret to evolution is change in form, or ontogeny, not variations in the frequencies of genes in populations. “We think of natural selection as tuning the piano, not as composing the melodies” (p 21).

If natural selection does not work as the cause of evolution, then what is the cause? The authors suggest (p 92) that optimization in evolution may be guided by “physics, chemistry, autocatalytic processes, dissipative structures and principles of self-organization, and surely other factors that the progress of science will in due

time reveal” (p 92). Despite this, the authors do not claim to know how evolution works. “Short answer: we don’t know what the mechanism of evolution is. As far as we can make out, nobody knows exactly how phenotypes evolve” (p 153).

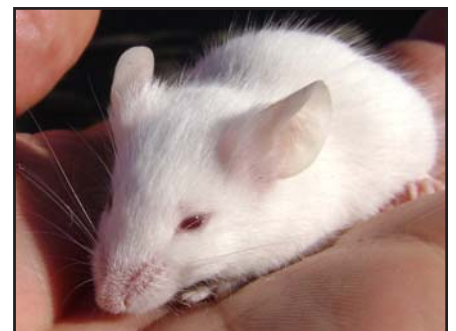
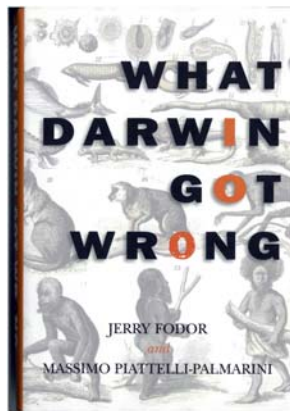
Although the views presented in this book are controversial, it illustrates that an increasing number of evolutionary biologists are willing to identify publicly some of the flaws in evolutionary thinking.

SCIENCE NEWS

Different Evolutions

Lio B-Y, Weng M-P, Zhang J. 2010. *Contrasting genetic paths to morphological and physiological evolution*. *Proceedings of the National Academy of Sciences (USA)* 107:7353-7358.

Summary. The relationship of genetic change to phenotypic change is a controversial topic. This study reports an analysis of mutant laboratory mice, based on 5,199 genes. Genes were compared for their effect on morphology versus their effect on physiology. “Morphogenes” more often code for transcriptional regulators, are more likely to be essential and to have multiple different effects (pleiotropy), and less likely to be active only in specific tissues. “Physiogenes are more likely to code for channels, transporters, receptors and enzymes. Thus there appears to be some molecular differences between the genes that cause morphological change and those that cause physiological change.

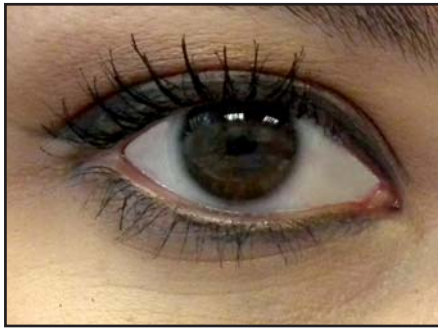


Laboratory mouse, the subject of the genetic study.

Comment. This report raises the intriguing question of a possible genetic basis to distinguish microevolutionary genetic changes (within a population) from macroevolutionary changes. If morphological changes are more likely to have side-effects (pleiotropy), there might be limits to the amount of change a species could tolerate. This may be an important clue to explain the observed distinction between microevolution and macroevolution.

Seeing Intelligent Design

Labin AM, Ribak EN. 2010. Retinal glial cells enhance human vision acuity. *Physical Review Letters* 104:158102.



Human eye. Photo by Ronny Nalin.

Summary. The structure of the vertebrate eye has been criticized as suboptimal because light entering the eye must pass through layers of nerve cells and glial cells (Muller cells) before striking the light-sensitive cells (rods and cones). Earlier research showed that glial cells act as optical fibers, guiding light to the rods and cones. The present report is based on a model of retinal function, investigating the efficiency of the glial cells in guiding light. Results indicate that the glial cells actually enhance visual acuity by improving light focus and reducing chromatic aberration. The retina is described as “an optimal structure designed for improving the sharpness of images.”

Comment. The eye has long been used as an example of design, but more recently it has been criticized by evolutionists as too poorly designed to be the work of an intelligent Creator. The problem is that light must pass

through layers of tissue before being processed by the receptors, supposedly decreasing the efficiency of vision. This report, with previous research, shows that the eye structure improves sharpness of vision by focusing the light through the glial cells, thereby improving vision rather than impairing it.

Vital Pseudogenes?

Poliseno L, Salmena L, Zhang J, Carver B, Haveman WJ, Pandolfi PP. 2010. A coding-independent function of gene and pseudogene mRNAs regulates tumour biology. *Nature* 465:1033-1038.

Summary. Short RNA sequences known as micro RNAs (miRNA) can regulate the activity of messenger RNA (mRNA) by binding to it and reducing its activity. The experiment reported here involved the mRNA for PTEN, a protein that reduces tumour growth in humans. Messenger RNA from a processed pseudogene, PTENP1, competes for the miRNA that binds to the PTEN mRNA, freeing the PTEN gene to produce PTEN that acts against the tumour. Micro-RNA binding sites are conserved between the PTEN and PTENP1 genes, and also in other studied examples of gene-pseudogene pairs. Regulation of mRNA expression is another example of a hitherto unknown function for pseudogenes.

Comment. Pseudogenes have been assumed to be defective copies of functional genes. In several instances, pseudogenes have been discovered to add another layer of complexity to the molecular activities of the cell. Thus,



Human parotid tumour. Photo courtesy of Wikimedia Commons.

many pseudogenes may turn out to be evidence for intelligent design rather than evidence against design.

The Importance of a Good Raft

Ali JR, Huber M. 2010. Mammalian biodiversity on Madagascar controlled by ocean currents. *Nature* 463:653-656.



Ring-tailed lemurs, *Lemur catta*, native to Madagascar. Photo courtesy of Corel Professional Photo Library.

Summary. Madagascar has a unique fauna of terrestrial mammals, comprising mostly lemurs, tenrecs, small carnivores and rodents. These must have crossed the ocean to reach Madagascar. If a land bridge existed, many other types of mammals should have used it. Rafting would be impossible under present conditions, because ocean currents are directed toward Africa and away from Madagascar. However, computer simulations indicate that Eocene ocean currents flowed in a different direction, because Madagascar was in a different location. According to the simulations, Eocene currents flowed from Africa toward Madagascar, so that rafting could have brought land mammals to the island. Rafting may have been a major factor in over-water dispersal when ocean currents were different from today.

Comment. Dispersal by over-water rafting is rarely observed today, and is often considered only as a last resort in biogeographic explanations. The presence of a group on two separated continents, such as South America and Africa or Australia, is often explained as the result of splitting the range of an ancient fauna by movement of the continents. Very often, this scenario is

inconsistent with small molecular differences between the species on different continents. Rafting might be an important explanation for such divided ranges, especially in the aftermath of a global catastrophe.

Rapid Canyon Erosion

Lamb MP, Fonstad MA. 2010. Rapid formation of a modern bedrock canyon by a single flood event. Nature Geoscience 3:477-481.

Summary. Canyon Lake Dam was constructed in 1964 on the Guadalupe River, Comal County, Texas. A flood in July, 2002 overflowed the spillway and carved out a gorge in only about three days. Canyon Lake Gorge is about 365 m wide just below the spillway, rapidly decreasing to about 50 m in width for nearly 1 km. This flow eroded the Glen Rose Formation, composed of limestone, to an average depth of 7.2 m.



A view of the Canyon Gorge with boulders broken and transported by the 2002 flood. Photo from: www.flickr.com/photos/12fh/2376068237/.

The lower end of the Gorge was eroded from a Quaternary fill terrace of the Guadalupe River. The upper reaches of the Gorge show a stepped surface pattern, apparently due to removal of limestone blocks by “plucking.” The rate of erosion seems to have been limited by the capacity of the water to carry the clasts rather than the bedrock’s ability to resist erosion. Despite the knowledge that the Gorge was carved rapidly under catastrophic conditions, there is little geological evidence to distinguish between formation by a single rapid flood or by multiple floods over a longer time period.

Comment. Perhaps the most interesting point of this study is the lack of clear indicators between single catastrophic events and multiple events over long periods of time. In the absence of clear distinguishing features, interpretations will naturally be strongly influenced by the presuppositional biases of the investigators. It might be enlightening to see how historical inferences would change under a different set of biases.

Rapid Change in Temperature Sensitivity

Barrett RDH, Paccard P, Healy TM, Bergek S, Schulte PM, Schluter D, Rogers SM. 2010. Rapid evolution of cold tolerance in stickleback. Proceedings of the Royal Society of London B doi: 10.1098/rspb.2010.0923. Published online 4 August 2010.

Summary. The potential effects of global warming include the likelihood that fish would be subjected to thermal stress, raising conservation concerns. The three-spined stickleback, *Gasterosteus aculeatus*, is distributed in both marine and cold freshwater lakes. Fish in the lakes are more tolerant to cold than are fish in the marine environment. Marine fish were transplanted into freshwater pools to see if they could adapt to temperature changes. In three years, the marine fish evolved tolerance to water 2.5°C colder than the ancestral fish. This rapid rate of response shows this fish is able to adapt to temperature change in a relatively short time.

Comment. Adaptation to changes in temperature is an example of microevolution. Such microevolutionary



Three-spined stickleback, Gasterosteus aculeatus. Photo courtesy of: <http://www.aquariumofpacific.org>.

changes have been observed to occur rapidly in a wide variety of observed examples. This rapidity of change is a contrast to the very slow rate of change inferred from the fossil record, and is consistent with the idea that the origins of higher taxa may involve different mechanisms than the types of changes that have been observed in nature.

Cambrian Explosion

Maloof AC, Porter SM, Moore JL, Dudas FO, Bowring SA, Higgins JA, Fike DA, Eddy MP. 2010. The earliest Cambrian record of animals and ocean geochemical change. Geological Society of America Bulletin 122(11-12):1731-1774.

Summary. The sudden appearance of most animal phyla and classes in the sediments of the Lower Cambrian has been called the “Cambrian Explosion.” This report concludes that the “Explosion” actually took about 20 million years, so was more gradual than previously believed. This conclusion is based on careful dating of strata independently of the fossils, and tracking first appearances of various groups of fossils. Instead of a single “Explosion”, three abrupt increases in diversity were identified, two in the Nemakit-Daldynian and one in the Tommotian layers, respectively. This analysis attempts to address the evolutionary problem of the sudden appearance of diverse types of organisms in the Lower Cambrian.

Comment. Evolutionary theory has been built on the supposition of gradual changes, as sudden large changes would be unlikely to be viable. The pattern of multiple higher taxa (“disparity”) appearing before diversity within each higher taxon remains contrary to evolutionary expectations. As noted in the article, this pattern (“disparity precedes diversity”) is also seen in plants, ediacarans, Precambrian microfossils, crinoids, gastropods, ungulates and others. Repetition of the pattern suggests that the problem lies in the (evolutionary) explanation rather than in the data.