

GEOSCIENCE NEWSLETTER

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Price Hall, the home of the natural science departments at Andrews University, named for pioneer creationist George McCready Price.

LECTURES AT ANDREWS UNIVERSITY

A series of lectures on science and faith was presented by Geoscience Research Institute staff members at Andrews University in October. Tim Standish, Ben Clausen and Jim Gibson each presented lectures to the students at the Theological Seminary, on such topics as design, time and catastrophe.

CREATION WEEKEND IN GERMANY

A weekend symposium was held at Blaubeuren, near Stuttgart, Germany, 9-11 December 2011. Speakers included Martin Probstle and Frank Hasel from Bogenhofen Seminary, Reinhard Junker from Wort und Wissen, and Jim Gibson from the Geoscience Research Institute. The theme of the symposium was "Creation Week: Fiction or Reality?" Speakers discussed the biblical support,



Participants enjoy an outdoor lunch.

theological significance and philosophical importance of creation week and the evidence of supernatural activity in the origin of life.

LECTURES IN THAILAND

In January Ben Clausen visited Asia-Pacific International University in Thailand. Presentation topics included physics and religion, southeast Asia geology and plate tectonics, his geology research on granites and plate tectonics in California and Peru, evil and the power of God, and personal experiences indicating that "believing scientist" is not



A view across the campus of Asia-Pacific University.

an oxymoron. On the weekend Ben talked at a Bangkok church about developing an origins model based on data from theology, history, physics, biology, and geology.

DVD: METAMORPHOSIS

Many organisms split their lives into different parts, alternating between startlingly different morphologies. However, few organisms do this as spectacularly as caterpillars which pass through metamorphosis into butterflies.

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Metamorphosis: The Beauty & Design of Butterflies takes viewers inside the chrysalis as what was once a caterpillar dissolves into molecular soup which then forms into wings, antenna, compound eyes, and all the other components of the flying masterpieces we call butterflies.

Metamorphosis is more than a fascinating film about the science of butterflies; it is also stunningly beautiful. The joy and wonder of studying such gorgeous creatures comes through in amazing photography and interviews with eminent experts. The entire life cycle of monarch butterflies is covered from eggs laid on milkweed as far north as Canada through the adults' incredible migration down to Mexican wintering sites. Viewers join the butterflies along their flyways south and even on oilrigs where they rest while crossing the Gulf of Mexico.

Metamorphosis is among the best and most beautiful films ever made about design in nature and GRI is glad to have played a small role in its production by providing scanning electron micrographs used in the film. Watch for *Metamorphosis* on Hope Channel; to see previews or purchase a DVD, please visit <http://www.metamorphosisthefilm.com/>.



SCIENCE NEWS

Are Cycads “Living Fossils”?

Nagalingum NS, Marshall CF, Quental TB, Rai HS, Little DP, Mathews S. 2011. Recent synchronous radiation of a living fossil, *Science* 334(11 November):796-799.

Summary. Cycads are a group of plants that have long been regarded as “living fossils,” implying that they have existed for a long time without much morphological change. This view was tested by comparing DNA sequences of the nuclear gene, *phytochrome p*, for about $\frac{2}{3}$ of the living species.

Results showed that each genus is genetically quite distinct from the others, but the species within each genus are more similar than expected. The extent of differences among the species in each genus is similar to that for each of the other genera. This suggests that there was a burst of speciation within each genus at about the same time, worldwide. This may reflect a global change in environmental conditions. Thus, none of the species should be regarded as a “living fossil.”



Cycas revoluta. Photo by Daniel CD, used by permission from commons.wikimedia.org/wiki.

Comment. One would expect a global burst of speciation to occur after a global catastrophe, and this is consistent with what a creationist might expect. However, the timing of such postulated events is based on the notion of a “molecular clock,” which is suspect. However, one could postulate that similar species with small genetic differences may have speciated after the flood, while dissimilar species with large genetic differences might represent separate lineages.



Helophorus grandis, from southern Germany. This species is similar to the fossil species reported below. Photo by Siga, used by permission from commons.wikimedia.org.

Stasis in Water Beetles

Fikáček M, Prokin A, Angus RB. 2011. A long-living species of the hydrophiloid beetles: *Helophorus sibiricus* from the early Miocene deposits of Kartashevo (Siberia, Russia). In: Shcherbakov DE, Engel MS, Sharkey MJ (eds), *Advances in the Systematics of Fossil and Modern Insects: Honouring Alexandr Rasnitsyn*. *ZooKeys* 130(2011):239-254. Doi: 10.3897/zookeys.130.1378.

Summary. Water beetles in the genus *Helophorus* are distributed widely in the northern continents, with a few species in tropical Africa, northern India and Central America. Fossils go back as far as the Lower Miocene.

A fossil beetle has been found in Lower Miocene sediments near Kartashevo village in Western Siberia. The fossil has been identified as *H. sibiricus*. This species is still living from Scandinavia to Siberia and Alaska, with fossils known from Central Europe and the Great Lakes region of North America. The lack of change in this beetle may be due to stability of its habitat.

Comment. It is remarkable that beetles, with relatively short life cycles, could remain unchanged over long periods of time in contrast to mammals, with longer life-cycles. This beetle was found in Lower Miocene sediments, where mammals are typically quite different from any living species, almost always being classified in extinct genera. While habitat stability may be important, it does not seem adequate to explain the contrast of stasis in beetles and not in mammals.

Stasis in Lacewings

Peng Y, Makarkin VN, Wang X, Ren D (2011). A new fossil silky lacewing genus (Neuroptera, Psychopsidae) from the Early Cretaceous Yixian Formation of China. In: Shcherbakov DE, Engel MS, Sharkey MJ (eds), *Advances in the Systematics of Fossil and Modern Insects: Honouring Alexandr Rasnitsyn*. *ZooKeys* 130: 217–228. doi: 10.3897/zookeys.130.1576.

Summary. Lacewings are insects belonging to the Order Neuroptera. Psychopsidae is a small family of five genera found in southern Africa, southeastern Asia and Australia. Fossils of this family are found from all over the world. The oldest known fossil is from Triassic sediments in Australia. The newly described specimen was found in China, and is classified in a new genus.

Comment. Although this fossil is different from any living genus or species, it is interesting to compare the degree of differences among lacewings and among mammals. Here is a Lower Cretaceous insect that is similar enough



A silky lacewing, *Psychopsis insolens*, NSW Australia. Photo by John Tann; downloaded with permission from www.flickr.com.

to living species to be classified in or near a living family. In contrast, the fossil mammals in Lower Cretaceous sediments are generally so different from living species they are classified in different Orders. One would expect insects, with short life-cycles, to show greater differences between living and fossil species than would mammals, with longer life-cycles. This is not the pattern that is found, leaving the question as to why some types of fossil organisms are similar to living species and other groups are not.