



January 2016

LOS ANGELES BASIN GEOLOGICAL SOCIETY MEETING ANNOUNCEMENT

January 28 (Thursday)

Donald Prothero, Ph.D.

EVOLUTIONARY NON-RESPONSE TO CLIMATE CHANGE IN RANCHO LA BREA MAMMALS AND BIRDS

Abstract

The Rancho La Brea tar pits in Los Angeles are legendary late Pleistocene fossil deposits, yielding over 5 million fossils of mammals, birds, and many other organisms from about 35,000 years ago until about 9000 years ago, spanning the last glacial-interglacial transition. Conventional evolutionary theory has long argued that organisms should be highly responsive to such large changes in climate and environment. We tested whether there were any size or shape changes in all the most common birds and mammals from La Brea, using the large samples from all the pits which have good radiocarbon dates. The mammals included predators such as the dire wolves, saber-toothed cats, and Ice Age "lions" or "jaguars", and herbivores such as the bison, horses, camels, and ground sloths. Among birds, we examined all the most common species: golden and bald eagles, turkeys, caracaras, barn owls and great horned owls. In every case, there was no statistically significant difference (as measured by ANOVA) between sequential samples

through time in either size or robustness of limb and foot bones, even during the dramatic changes between the peak glacial climates 20,000 years ago (when ponderosa and piñon forests blanketed the lowlands) and the warmer times before and after 20,000 years ago. This calls into question how sensitive organisms are to climate change, and is consistent with other paleontological studies showing that most do not respond with any morphological change at all.

Speaker's Biography

Donald Prothero taught college geology and paleontology for 37 years, at Caltech, Columbia, Cal Poly Pomona, and Occidental, Knox, Vassar, Glendale, Mt. San Antonio, and Pierce Colleges. He earned his B.A. in geology and biology (highest honors, Phi Beta Kappa, College Award) from University of California Riverside in 1976, and his M.A. (1978), M.Phil. (1979), and Ph.D. (1982) in geological sciences from Columbia University. He is the author of over 35 books (including 6 leading geology textbooks, and several trade books), and over

300 scientific papers, mostly on the evolution of fossil mammals (especially rhinos, camels, and horses) and on using the earth's magnetic field changes to date fossil-bearing strata. He has been on the editorial boards of journals such as Geology, Paleobiology, Journal of Paleontology, and Skeptic magazine. He is a Fellow of the Linnean Society of London, the Paleontological Society, and the Geological Society of America, and also received fellowships from the Guggenheim Foundation and National Science Foundation. He served as President of Pacific Section SEPM (Society for Sedimentary Geology) in 2012, and served for five years as Program Chair of the Society of Vertebrate Paleontology. In 1991, he received the Charles Schuchert Award for outstanding paleontologist under the age of 40. In 2013, he received the James Shea Award of the National Association of Geology Teachers for outstanding writing and editing the geosciences. In 2015, he received the Joseph T. Gregory award for service to vertebrate paleontology. He has been featured on numerous TV documentaries, including Paleoworld, Walking with Prehistoric Beasts, Prehistoric Monsters Revealed, Monsterquest, Prehistoric Predators: Entelodon and Hyaenodon, Conspiracy Road Trip: Creationism, as well as Jeopardy, and Win Ben Stein's Money.

Meeting Time, Place, Cost and Reservations

Time:

Thursday, January 28, 2016

Meeting Agenda

Lunch Served: 11:30 AM to 12:00PM
Announcements: 11:45 AM to 12:00 PM
Guest Speaker: 12:00 PM to 12:45 PM
Questions/Close: 12:45 PM to 1:00 PM

Place:

The Grand at Willow Street Conference Center located at 4101 East Willow Street, Long Beach, CA. (562-426-0555). Take Lakewood Boulevard south from the San Diego Freeway (405), turn west onto

Willow Street and turn right onto Grand Avenue at the sign for the Center. Park free in the garage structure.

Cost:

Lunch and Speaker: \$25.00 with reservations
\$30.00 without reservations
Retired: \$20.00
Student: \$5.00

Meeting Reservations:

Make your reservations using our web site at www.labgs.org, or by calling Graham Wilson (562)-326-5278, or emailing gwilson@shpi.net.

PLEASE Make:☺ Reservations must be made by 10:00 AM Tuesday morning prior to Thursday's meeting to receive discount price noted above. As always walk-ins are welcome.

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Looking for Student Lunch sponsors. If you or your Business/Organization would like to become a Student Lunch Sponsor, please let us know.

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