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RESOURCE NEWS

In the News...1 March 2007

Sidney Horenstein
American Museum of Natural History,
New York, NY 10024
(horenst@amnh.org)

The public's interest in all thing dinosaurs continues to capture the imagination of the old and the young. So every discovery that has something to do with dinosaurs will make it into at least local newspapers. Take the article in the Hindustani Times (Bhopal Edition)(www. hindustanitimes. com) on Thursday February 22, 2007 which contained an article about the discovery of two dinosaur eggs discovered on a field trip to the Simla Hills (Jabalpur) by a geology professor and his student from the Government Science College. Keep in mind that about 100 eggs were discovered recently in the Dhar District of Madhya Pradesh. Actually, finding dinosaur fossils is not new to this area—dinosaur bone fragments were found in 1828 and kept in the British Museum of Natural History. The former head of the Geology Department indicated that the eggs belonged to a herbivorous species because the shells were smooth. Carnivorous dinosaurs, he stated, have long ridges on their shells.

Finding where dinosaur fossils may be located will become easier once the *OneGeologyProject* gets underway. As reported in the Daily Telegraph (Sydney, Australia), March 9, 2007 (www.news.com.au/dailytelegraph/), geologists from 55 countries met and agreed to pool their national geological information and present it on the internet on a scale of 1:1,000,000 when possible. Not only will the project give access to people who want to know what is below their feet, it will also point out where information is missing. Look for the first postings in mid-2008 when the maps will be presented on a virtual globe, much like the way Google Earth presents satellite images.

Fossils that have transitional features showing how particular bone structures evolve are greatly desired, and one such discovery is a nocturnal mammal about the size of a chipmunk, *Yanoconodon*, revealed in northeastern China. This 125 million-year-old Cretaceous specimen was reported on by Anita Srikameswaran, in the Pittsburgh Post-Gazette (www.post-gazette.com) on March 15, 2007, and possesses a middle ear structure that is between mammals and near-relatives of mammals. It was suspected that middle ear bones evolved from the jaw hinge of reptilian relatives, and this find contains middle ear bones that are partly separated from the jaw by remains connected by ossified cartilage. Now, paleontologists have an insight into the acutely sensitive hearing developed by mammals. Dr. Zhe Xi Luo, curator of Vertebrate Paleontology at the Carnegie Museum of Natural History published the study results in the journal Nature. The specimen was discovered in Hebei Province where recently, so many interesting fossils have been studied and described. Dr. Luo actually went to China to study the specimen because of the unusual number of thoracic and lumbar vertebrae (26, instead of the usual 20 found in most extinct and living mammals). As he was working on the fossil he found that the transitional middle ear structure was preserved.

While studying the arm movements of the dinosaur *Bambiraptor*, a rather small 2-ft tall carnivore, Phil Senter at Lamar State College discovered that the animal would have been able to hold its prey with both arms or even use its arms to bring food to its mouth, unlike other dinosaurs that grab with their mouths. Senter told New Scientist, January 29, 2007, (www.newscientist.com) that "'Caterpillars would be perfect to grab between claws' and drop into its mouth." His investigation also revealed that the birdlike dinosaur "would have been able to put the tips of the outer two of its three fingers together", a characteristic "not known in any other dinosaur." One could imagine *Bambiraptor* grabbing a frog or a small mammal with one hand and using "sharp claws on its finger tips" to "impale prey from both sides and prevent it from escaping."

Equal in interest to dinosaurs by the public are our ancestors, and seeing them has been made easier with the newly opened permanent exhibit at the American Museum of Natural History, The Anne and Bernard Spitzer Hall of Human Origins. In a review of the exhibition by John

Wilford Noble on February 9, 2007 in the New York Times (www.nytimes.com) he states that "Some of the most striking displays are the reconstructions from fossils and other evidence of what these ancestors probably looked like." Nowhere else can one see so many specimens of our ancestors in one place. In addition to reconstructions, computer animations, there is an education laboratory with microscopes and laptops designed for young people and student groups to learn how to decode DNA and examine fossils. "These two scientific threads", paleontology and genetics, "run through the exhibition like strands of DNA double helix."

If you cannot get to the museum soon, in the meantime, take a look at "Faces of the Human Past" by Richard Millner and Ian Tattersall, *Natural History*, February, 2007 (nhmag.com). Many of the portraits and sculptures that are part of the exhibit are illustrated in the article, including a brief history of paleoartists whose paintings and sculptures create accurate and realistic reconstructions of these early humans in their appropriate settings through the artists' knowledge of primate anatomy and behavior.

It was about a month after the opening of the exhibit that F. Clark Howell died, a paleoanthropologist who stands out because of the way he studied human origins. Instead of the traditional "stones and bones", he took a broader approach which included many disciplines drawing on biology, geology, archeology, ethnology, and primatology, said Tim White, a colleague and professor of integrative biology at the University of California Berkeley, in a press release (www.berkeley.edu/news/) March 13, 2007. He worked with the Leakeys, Louis and Mary, and their son Richard in Africa and with them believed that east Africa was the "likely nursery of human evolution, as opposed to other regions of the continent." Many Africans were trained by him, fulfilling his desire for their full participation in fossil hunting projects. He also investigated numerous digs around the world that were potential sites for early human remains.

Not all interesting and compelling fossils are dinosaurs and primates. Take the news item in Reuters, Friday, March 2, 2007 by Will Dunham (today.reuters.com) who described a "spiky oddball" that is a half billion years old. The fossil was discovered in the Burgess Shale of British Columbia, Canada, so well-known for its diversity of Cambrian soft bodied animals. But this animal "...a tiny beast" about one-half inch long, had 'long, curved spines protruding from its armored body." The fossil fits within the Cambrian's reputation of not only hosting the first great proliferation of life but many forms that are considered to be a sort of "evolutionary experimentation" that appeared and then disappeared rapidly.

Always on the lookout for examples that could shed light on evolutionary processes, it sometimes takes investigators to obscure places in the world to find them. The TimesOnLine (www.timesonline.co.uk) on March 16, 2007, summarized a report that appeared in the journal Science about Soay sheep on the island Hirta in the Outer Hebrides, Scotland. It turns out that because of global warming (or just climate warming) more of the smaller sheep are now surviving the winter. Because there are a greater number of smaller sheep, the average size of the animals decreases. As a result, "there will be reduced natural selection for the larger animals...and there will be changes in the size of the sheep due to natural selection, which could have a significant impact on the population dynamics of the Soay sheep overall." The author of the study added: "What this study means is that we are going to leaving an evolutionary legacy. We are changing the way animals are being selected." Obviously, because *we* are altering the climate.

Many people think that the current news about global warming (climate change) is a new revelation. But read the page 4 banner in the May 15, 1932 *New York Times* (www.nytimes.com)—"Next Great Deluge Forecast By Science." The reports state that a number of scientists such as Professor Sir Edgeworth David of the University of Sydney, Australia, Dr. William J. Humphreys of the United States Weather Bureau, and many others have been modifying their old views about melting glaciers in light of information gathered by the Byrd Expedition to Antarctica and Professor Alfred Wegner in Greenland. "Very slowly the great ice sheets in the Arctic and Antarctic regions are melting and pouring their torrents into the oceans. The earth must inevitably change its aspect and its climate." So they have come to the conclusion that the earth is steadily growing warmer and that sea level will rise at least 50 ft but as much as 151 ft leaving only higher land dry. Holland will be inundated, fish will swim in Buckingham Palace and in New York; only upper stories of tall skyscrapers will be out of water. But, unlike the present views of relative rapid sea level rise, they believed it would take about 40,000 years. As climate changes, they report that man's food supply would not be what it is now. "No one can tell what may happen if a new carboniferous era should follow the warming of the earth."

Sir Edgeworth David is not well known outside of Australia, even though his accomplishments were quite extraordinary, as commemorated in a New York Times obituary, August 29, 1934 (www.NYTimes.com). Among his accomplishments were the discovery of the South Magnetic Pole, a member of the first expedition to climb the Antarctic volcano, Mount Erebus, a member of the Shackleton Expedition to Antarctica, and the discovery of what was thought to be at the time the oldest fossils from the Flinders Range and Mount Lofty in South Australia (New York Times, June 8, 1928).