

In The News

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The purpose of this column this quarter, as with the earlier numbers, is to bring to our readers a sampling of the large number of articles on evolution and paleontology that appear in newspapers, press reports and on the internet. Those listed are selected for their general interest and diversity and are selected by the compiler to show the broad range of discoveries and discussions in these fields of science. They are a snapshot of the reports and the reader is urged to look at the full article. It also points the way for further research on part of the reader by examining the various sites listed with the articles for additional reports of discoveries.

As reported earlier, dinosaurs rank as one of the most popular fossils, not only among children but also adults. With that in mind, take the worldwide interest in the auction of a 7.5-m-long skeleton of *Triceratops horridus* Marsh 1889, the three-horned dinosaur discovered in North Dakota in 2004. The story was reported by Reuters, <http://www.reuters.com/article/ScienceNews/idUSL144149620080414>, April 14, 2008. The auction will take place in Paris at Christie's, but how many buyers are willing to bid on the specimen that has an estimated value of 500,000 euros (\$790,900) remains to be seen. Unlike the famous dinosaur Sue, *Tyrannosaurus rex*, which was sold in 1997, this dinosaur does not have a nickname. The new owners will have naming rights, although it seems that *Triceratops* is an excellent name. In addition to the skeleton, many other parts of dinosaurs, including teeth, will be auctioned off at the same time.

Another dinosaur fossil made the news world wide when a 19-lb-package was found in the cargo bay of a bus in the mountains of Peru. Because the contents of the package were not listed, the authorities opened it to find what was tentatively identified as a triceratops, even though this type of dinosaur has never been found in Peru before. The bus was on the way to the capital, Lima, when it was intercepted. Reuters, <http://www.reuters.com>, sent the report out and it was picked up by newspapers around the world, such as the *Khaleej Times*, United Arab Emirates, <http://www.khaleejtimes.com>, on March 26, 2008. Trafficking and removal without permission of fossils and artifacts has been a problem in Peru for many years and recently Yale University agreed to return thousands of specimens taken from the ancient Inca citadel of Macchu Picchu in Peru.

And, in the United States, Congress had urgent reasons for expanding the boundaries of Petrified Forest National Park in 2004, to protect resources outside the park that were even richer than those within. But, alas, as reported in *The Arizona Republic*, for April 7, 2008, <http://www.azcentral.com/arizonarepublic/opinions/articles/0406sun1-06.html>, Congress still hasn't taken the final step: actually acquiring the land. About half of the 125,000-acre expansion is federal and state land while the rest is private ranchland with four major owners. They all supported the boundary change and are willing to sell or make a trade and they have all been waiting. Here the fossil record goes back more than 220 million years to the Triassic Period when northeastern Arizona was a tropical swamp with 200-pound ancestors of frogs and salamanders that mingled with early reptiles during the dawning of the age of dinosaurs. Now, land prices are higher, looters are pillaging sites, and one exasperated landowner is putting his property on the market. "Arizona has a world-class treasure. We can't afford to leave it unprotected."

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As you can see, interest in dinosaurs is not a recent pursuit. In 1898, a newspaper headline trumpeting the discovery in Wyoming of the most “colossal animal ever on Earth” stoked the competitive fires of Pittsburgh steel magnate Andrew Carnegie. After initially failing in his attempt to buy to buy the fossil, a sauropod thigh bone, he hired a leading paleontologist from the American Museum of Natural History to head an expedition to Wyoming. The results were impressive: In 1899, the Carnegie team unearthed the bones of two long-necked, plant eating dinosaurs and named the species for its benefactor. To house an 84-foot-long *Diplodocus carnegii* skeleton, Carnegie built Pittsburgh’s Dinosaur Hall which opened in 1907 and drew enthusiastic crowds. The above quotation from Julia M. Klein on page D6 of the print edition of *The Wall Street Journal* on January 15, 2008 was a way to introduce the opening, a century later, of a much anticipated new \$36 million exhibition, “Dinosaurs in Their Time.” She reports that dozens of dinosaurs appear in ecologically precise dioramas filled with recreated ferns, gingkoes and conifers, and against the backdrop of colorful, superbly executed murals. These and other dioramas as well as the collections are admirable in the way they were painstakingly reassembled and presented to the public. She, however, criticizes the labeling as too complex in places, the type too small as well as confusing in some instances. But “for all its limitations ‘Dinosaurs in Their Time’ remains a rewarding experience.”

On the webpage of the *Sunday Times*, <http://www.timesonline.co.uk/tol/news/uic/article/3736226.ece>, Chris Gourlay reports that Britain was dinosaur heaven 140 million years ago. A “census” carried out by paleontologists at Portsmouth University listed 108 species of dinosaurs found since the first discovery was named in 1824 by William Buckland for the skeleton *Megalosaurus* excavated in Oxfordshire in 1819. A great number of the species come from Middle Jurassic and Early Cretaceous period rocks. Perhaps the large number of species found in Great Britain “may be partly explained by the long standing popularity of dinosaur fossil hunting.”

The Alberta oil sands noted for its deposits of fossil fuel has yielded the oldest and most complete plesiosaur fossil. Originally dug up 14 years ago it was only now described formally as *Nichollisia borealis* and reported on March 20, 2008. It lived 112 million years ago during the Cretaceous Period in a sea known as the Cretaceous Western Interior Seaway, which once split North America in two. The specimen was extracted from sandstone in a mine 200 ft underground by using a 100-ton electric shovel 22 miles north of Fort McMurray near the Athabasca River. For some, <http://www.thedailygreen.com/environmental-news/latest/oil-sands-fossil-4732008>, this find is a rare bit of good news from an area that has “produced a massive

burden of pollution.” It has been called the most destructive project on earth, that is, the extraction of the oil from the oil sands. Plesiosaurs are marine aquatic carnivorous reptiles that lived during the Jurassic and Cretaceous Periods. The fact that it was preserved in sandstone and not shale means that it was not crushed as most specimens are, allowing its three-dimensional skull to be CT-scanned, which revealed many features inside its braincase. The specimens were named after Elizabeth Nicholls who is credited with transforming the understanding of prehistoric ocean life.

In 2006, a 150-million-year-old plesiosaur, a short-neck form of plesiosaurs, was found in Svalbard and nicknamed “The Monster” because of its enormous size, 50 ft from nose to tail. But another plesiosaur just found and probably the same species as The Monster is probably just as large. The flipper, for example, is 3 m long, with just a few parts missing. These specimens are part of a treasure trove of 40 sea reptiles uncovered on the island which includes plesiosaurs as well as ichthyosaurs. Paul Rincon reported the discoveries for BBC NEWS, <http://news.bbc.co.uk/1/hi/science/nature/7264856.stm>, on February 27, 2008. One hundred and fifty million years ago, Svalbard was not so near the North Pole, there was no ice cap and the climate was much warmer than it is today. The fossils were found in black shale. When the animals died they sank to the bottom of the sea and were covered over by mud. The oxygen free, alkaline chemistry of the mud explains the fossils’ remarkable preservation.

On March 19, 2008 Stony Brook University Medical Center, <http://commcgi.cc.stonybrook.edu/>, reported that the studies of William Jungers of Stony Brook University and Brian Richards of George Washington University indicate that upright walking in pre-humans, or hominins, began six million years ago and that the result of the study was going to be published in the March 21, 2008 issue of the journal *Science*. Their findings indicate that the fossil of the most complete femur of one of the earliest known pre-humans, *Orrorin tugenensis*, when compared with the femurs of living apes, modern humans of all body sizes, and other fossils such as *Australopithecus*, indicates that very early humans walked upright right after the split between human and chimpanzee lineages.

We do not know if these early humans spoke, but Robert McCarthy, an anthropologist at Florida Atlantic University, believes that Neanderthals did 30,000 years ago. He has used new reconstructions of Neanderthal vocal cord tracts to simulate the voice from 50,000 year old specimens from France. This study was reported by Ewen Callaway on April 15, 2008 for NewScientist.com news service. By accessing <http://www.newscientist.com>, you can not only hear a simulation of a Neanderthal voice as well as a human voice but read a special report on human evolution. McCarthy

reports that ancient human speech lacked the “quantal vowel” sounds that underlie modern speech. “In contrast to a modern human ‘E’, the Neanderthal version doesn’t have a quantal hallmark, which helps the listener distinguish the word ‘beat’ from ‘bit.’ Though subtle, the linguistic difference would have limited Neanderthal speech. Neanderthals were a dead-end offshoot of the human line that inhabited Europe and parts of west and central Asia. Researchers believe that they survived in Europe until the arrival of modern humans about 30,000 years ago.

According to Casey Dunn of Brown University in Rhode Island, he and his team analyzed massive volumes of genetic data and found that the earliest animal was not the lowly sponge but the ocean-drifting comb jellyfish. The discovery was so surprising that the headline of the story in <http://news.yahoo.com> on April 10, 2008 announced “Shock: First Animal on Earth Was Surprisingly Complex.” Although the team of scientists involved in the project have indicated which animal branched off first they cannot date precisely when the comb jelly diverged away from the base of the tree of life. There are just no fossils of the oldest comb jelly. Although comb jellies are a common animal in the seas today, these modern forms probably looked very different from their early ancestors. “This finding suggests either that comb jellies evolved their complexity independently from other animals, or that sponges have become greatly simplified through the course of evolution.”

On February 2, 2008, BBC NEWS <http://bbc.co.uk/go/pr/fr/-/2/hi/science/nature/7251666.stm> reported that a 70-million-year-old fossil of a giant frog had been unearthed in Madagascar by a team of UK and US scientists. They report that the creature would have been the size of a “squashed beach ball” and that it was “strikingly different” from present-day frogs found on the island. It seems that this fossil frog is related to modern horned toads possessing a large mouth, short legs and a body length of 16 in. The team gave the frog a nickname, Beelzebufo, or “frog from hell,” and surmised that its diet would have consisted of insects, small vertebrates like lizards or even hatchlings or juvenile dinosaurs.

Less than 2 weeks later, February 13, 2008, another BBC NEWS report was directed at a fossil bat that was originally discovered in the Early Eocene Green River Formation in Wyoming in 2003, <http://bbc.co.uk/go/pr/fr/-/2/hi/science/nature/7243502.stm>. The 52-million-year-old bat, named *Onychonycteris finneyi*, stands alone among bats, as a new genus and new family. The significance of the find is that the researchers believe that bats flew first and then later developed echolocation to find their prey. There are over a thousand species of bats in the world today, and a great many of them echolocate to navigate and find food. The new fossil’s large claws, primitive wings,

broad tail, and underdeveloped cochlea—the part of the inner ear that makes echolocation possible—all set it apart from existing species. “The next big question to be answered was how bats made the transition from being terrestrial to flying animals.”

About 1 month later on March 5, 2008 a report in ScienceDaily, <http://www.sciencedaily.com/releases/2008/03/080304191213.htm> describes the discovery of six new bat species dating to around 35 million years ago from the Fayum district of Egypt. It took over 25 years of fieldwork to collect the 33 specimens that form the basis of the study. Among the species is a giant as bats go, weighing a little under a half pound. Fossil bats of Eocene age are rare in Africa, but the discovery of these bats illustrates the remarkably rich and previously unsuspected diversity of bats in Africa. It was thought that most Old World families of bats evolved and diversified in the northern hemisphere, but the new study indicates that many modern bat families only diversified and radiated after their initial dispersal into Africa. The newly discovered bats were similar to some modern day microbats, a group that uses sonar waves to navigate and hunt, but they seem to be primitive members of the group.

Meteor impacts are often associated with huge disasters, mass extinction and why the dinosaurs disappeared from the face of the Earth some 65 million years ago. However, the opposite may be true—that new and more varied animal life arises following such a catastrophe has been shown by researchers at the Natural History Museum of Denmark and Lund University in Sweden. They discovered that sometime in the Ordovician Period, 490–440 million years ago, Earth was struck by more than 100 meteorites at one time and in the wake of this event, new and more varied life evolved in the oceans. This study was reported in numerous newspapers including the *Mumbai Mirror*, India on March 17, 2008, <http://www.mumbaimirror.com>. Although the phenomenon has currently been researched only around the Baltic Sea, they plan to expand their study to craters and meteorites in China and the United States to determine whether this was a global phenomenon.

To put the Earth and all that came before in perspective, the report by Dennis Overbye in the *New York Times* on March 11, 2008, <http://www.nytimes.com>, states that we can kiss the Earth goodbye in about 7.59 billion years. At that time, the Earth will be dragged from its orbit by an engorged red Sun and spiral to a rapid vaporous death. In the end, there won’t even be fragments. But even before that, as the sun becomes larger and more luminous a billion years from now, the oceans will boil away. According to Dr. Robert Connon Smith of the University of Sussex in England, one of the scientists who made the calculations, it should be “an incentive to do something about finding ways to leave our planet and colonize other areas of the

galaxy.” “As for the sentimental attachment to any geographic features we might come to know and love,” Dr. Smith added, the Himalayas “didn’t even exist until India smashed into Asia less than 60 million years ago—the blink of an eye compared with the billions of years we are discussing.”

And 2 days before, again in the *New York Times*, Kenneth Chang, <http://www.nytimes.com>, reported that a study at Johns Hopkins University indicates that the universe is 13.73 billion years old, give or take 120 million years. The new data indicate that the earliest stars switched on about 400 million years after the Big Bang.