Evidence News 28/12 – 7th November 2012

A dinosaur lover's heaven is this week's fare while John Mackay is in the Jurassic of Scotland (brrrr) where today he has found a fossil belemnite (marine squid) parallel to a fossil land plant in the same rock. Definitely a flood deposit. This site matches our Australian Gympie Jurassic Ark site with "southern conifer" trees in limestone. John came across it last year but didn't have time to do anything about it. Your funds help us do this vital research so click DONATE and help more now. Now enjoy Evidence News 28/12 with EDitorial COMment from the Creation Research Team worldwide.

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1. NEW QUESTIONS: GALAPAGOS ISLANDS: "I have recently returned from a tour of the Galapagos Islands where they showed proof that one finch had evolved just recently on the big Daphne island. How do you explain this?" ANSWER by Diane Eager.
ANGELS: "When did God create angels, before or after He made the earth?" ANSWER by John Mackay.

2. DINOSAUR DNA AND PROTEINS FOUND, according to Science 2.0 20 October 2012, North Carolina State University News 23 October 2012 and *Bone* 16 October 2012 doi: 10.1016/j.bone.2012.10.010. A group of scientists led by Mary Schweitzer of North Carolina State University have confirmed previous research that proteins can be found in dinosaur bones. Schweitzer

first identified preserved soft tissue in dinosaur bone in 2005. In 2007 she and her colleagues used chemical tests to confirm that fibrous material collected from a *Tyrannosaurus rex* dated as 67 million years old, and a *Brachylophosaurus* dated as 80 million years old was collagen, the tough fibrous protein found in bones, tendons and ligaments. The research team have now examined star shaped structures that look like osteocytes, bone cells, within the dinosaur bones.

Critics of Schweitzer's previous research had suggested that protein material found within the bones was from microbes that had contaminated the specimens. To answer this, the team used antibodies that bind to proteins found in vertebrate bone cells, but not protein found in microbes. One of the proteins they tested for is named PHEX and is found in osteocytes of living birds. Schweitzer explained: "The PHEX finding is important because it helps to rule out sample contamination. Some of the antibodies that we used will react to proteins found in other vertebrate cells, but none of the antibodies react to microbes, which supports our theory that these structures are surviving osteocytes. Additionally, the antibody to PHEX will only recognize and bind to one specific site only found in mature bone cells from birds. These antibodies don't react to other proteins or cells. Because so many other lines of evidence support the dinosaur/bird relationship, finding these proteins helps make the case that these structures are dinosaurian in origin". The team also tested for the presence of DNA by using an antibody that only binds to the "backbone" of DNA. They also got positive results using two fluorescent chemical dyes that attach to DNA. To confirm the DNA was not from contaminating microbes they also tested for histone proteins. These are proteins involved in the packaging of DNA but are not found in bacteria.

There is a great deal of scepticism amongst the mainstream scientific community that proteins, DNA and soft tissue could be preserved for 67 million years. Schweitzer's team suggest the proteins and DNA were preserved by the fact they are already embedded in a mineral matrix within the bone, and maybe iron from red blood cells formed cross-linking bridges between the proteins and other cellular molecules and made them resistant to being degraded. Schweitzer summarised the results: "The data thus far seem to support the theory that these structures can be preserved over time. Hopefully these findings will give us greater insight into the processes of evolutionary change."
Links: North Carolina University, Science 2.0

ED. COM. Six days before this study was released online in Bone, Morten Allentoft at the University of Copenhagen and Michael Bunce at Murdoch University in Perth, Australia published a study in *Proceeding of the Royal Society B* doi: 10.1098/rspb.2012.1745 claiming DNA has a half-life of 521 years. It most likely means that after 521 years, in 50% of the DNA in a normal environment, (not frozen in a laboratory) the bond breakage is so complete that it is no longer recognizable as DNA anymore. So long before Schweitzer's desired "67 million years" there would be none left. Recovering dinosaur DNA was the basis of the story in the film *Jurassic Park*, but according to Allentoft :"What we show here with the decay rate of DNA is that this is never going to be possible". (See *DNA dating study kills off 'Jurassic Park'*, ABC News in Science, 10 October 2012 here.)

When we combine this with the fact that Ronald Raines of University of Wisconsin–Madison reminded the scientific community in 2009, that proteins are subject to decay since proteins are held together by peptide bonds and each "peptide bond has a half-life of 400 years". (*Adv Exp Med Biol*. 2009; 611: xci–xcviii) Therefore, collagen and all the other proteins North Carolina scientists have found in dinosaur bones cannot last millions, but only thousands of years.

There is an obvious solution to this problem: *T. rex* and *Brachylophosaurus* bones are not 67 or 80 million years old, but at most 4-5 thousands of years old. What interesting times we live in for creationists. (Ref. age, dating, time)

SEE THIS ON "TIME'S UP DARWIN" the new Documentary DVD from Creation Research. Synthetic chemist Prof Ed Neeland explains the significance of this evidence from Dinosaur proteins, plus SEE lots more evidence that strikes at the heart of Darwin's evolution…the millions of years claimed by evolutionists don't exist. Available UK and Australia at present. Coming soon elsewhere.

FEATURES Geological Engineer Dr John Morris, Chemistry Professor Dr. Ed Neeland, Geologists Bob Powell, Robert Stewart and Liam Fromyhr, Forestry Expert Craig Hawkins, Medical Biologist Dr. Diane Eager, Fossil Man Joe Taylor, Science Coordinator David Harrison, and Creation Researcher Vance Nelson.

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3. THE EVOLUTION OF CREATIONISM: They must be getting worried if they have articles like this in the science news services - Science Daily. (Ref Philosophy, Theistic Evolution, Geology)

4. ICE ON GREENLAND ALL MELTED? (Ref Climate, Arctic, Weather)

5. VEGETARIAN DINOSAURS HAD COMPLEX TEETH, according to ScienceNOW and ScienceDaily and e! Science News. Evidence from fossilised stomach contents and wear marks on their teeth indicates the large Hadrosaurs found throughout North America, Europe and Asia ate a great variety of tough plants, including grasses, ferns, horsetails and conifers. To grind up this tough fibrous diet these dinosaurs had large numbers of flat teeth, very different from the pointed teeth seen in most reptiles. A team of palaeontologists and engineers have carried out a microscopic study of the structure of teeth from a Hadrosaur named *Edmontosaurus*, from the collections of the American Museum of Natural History in New York City. Most reptiles have only two kinds of dental tissues, hard enamel and bone-like dentine, but Hadrosaur teeth had a complex structure involving six different kinds of dental tissue. Furthermore, the organisation of the tissues within teeth varied within and between the teeth, allowing different parts of the teeth to be used for either grinding or slicing plant material. Hadrosaurs have been nicknamed "cows of the Cretaceous" but their teeth were more complex than any living cows, horses, or other grazers. A typical mammal has four types of dental tissue: enamel, dentine1, cementum and dentine2. Gregory Sawyer, a professor of mechanical engineering at University of Florida commented: "Hadrosaurs' teeth were incredibly complicated, among the most complex of any animal. These dinosaurs had developed a lot of tricks". The researchers were impressed by the preservation of the teeth. Gregory Erickson, a biology professor at Florida State University commented: "We were stunned to find that the mechanical properties of the teeth were preserved after 70 million years of fossilization". He went on to say "if you put these teeth back into a living dinosaur they would function perfectly." Mark Purnell, a palaeobiologist at the University of Leicester in the United Kingdom suggested these teeth explain why Hadrosaurs survived until the very end of the age of the dinosaurs about 65 million years ago. According to Purnell, the ancestors of the duckbills did not have such sophisticated teeth and the evolution of the six-tissue structure may have allowed hadrosaurids to diversify and "explode" across the landscape. He commented: "They were able to broaden their niche and grind up food that other species struggled to process. In times of real resource shortages, they had something to fall back on". Links: e! Science News, ScienceDaily

ED. COM. The researchers comment about the preservation of the teeth is a clue that the animal was buried rapidly. Check out sun and weather damage on any cow's teeth when the cow dies and "hangs around" even a few seasons above ground. These complex teeth may explain why Hadrosaurs survived, but survival does not explain the origin of either the teeth, or the dinosaur with them. Hadrosaur stomach

contents show they obviously did well when there was plenty of fibrous vegetation to eat, but if they didn't already have such complex grinding teeth they could not eat tough plants. But the presence of tough plants will never create genes for cementum, dentine and other tooth substances in dinosaurs that did not already have them. This study is a good example of the uselessness of evolution to explain the characteristics of living creatures. It is more logical to believe that Hadrosaurs were created as fully functional animals, complete with complex teeth ready to eat the abundant vegetation that grew in the original very good world that God created. (Ref. vegetarians, duck-billed dinosaurs, diet)

6. CANADIAN FEATHERED DINOSAURS FOUND, according to BBC News and ScienceDaily25 October 2012, Fossil Science 28 October 2012 and *Science*, 2012; 338 (6106): 510 DOI: 10.1126/science.1225376. A team of palaeontologists led by Darla Zelenitsky from the University of Calgary and François Therrien from the Royal Tyrrell Museum of Palaeontology have studied three specimens of *Ornithomimus edmontonicus* found in Upper Cretaceous rocks in Alberta, Canada. The name *Ornithomimus* is derived from Latin for "bird mimic". They had long hind legs, short forelimbs, a toothless beak, large eyes and a long, thick tail. In the film *Jurassic Park* they were portrayed as scaly creatures that ran on two legs like an ostrich. The Canadian specimens are two adults and one juvenile, and the research team claim they were covered in short downy feathers, and one of the adults showed evidence of a pennibrachium - a structure with the form of a wing consisting of large long feathers. According to Darla Zelenitsky, "This is a really exciting discovery as it represents the first feathered dinosaur specimens found in the Western Hemisphere. Furthermore, despite the many ornithomimid skeletons known, these specimens are also the first to reveal ornithomimids were covered in feathers, like several other groups of theropod dinosaurs". The dinosaurs are too large to fly so the research team suggest the wing-like structures were used as courtship displays or for protecting young. Zelenitsky explained: "The presence of the primitive wings in these relatively large dinosaurs indicate that wings did not initially evolve for flight, and the occurrence of these wing-like structures in only the adult individual suggest that these structures were used later in life, perhaps for purposes like display or courtship". These findings fit with the belief (summarised by ScienceNOW) that dinosaurs "still walk and fly among us: we call them birds". The researchers suggest their findings show dinosaurs evolved feathers earlier than previously thought. Darla Zelenitsky told the BBC World Service programme Science in Action: "The specimens from China that show wings, are dinosaurs that are more closely related to birds". She went on to comment: "This particular dinosaur is a bit more distantly related to birds – it's a more primitive dinosaur... it indicates wings evolved earlier than previously thought".
Links: BBC, Fossil Science, ScienceDaily

ED. COM. We noticed that media reports of this story were not accompanied by any detailed photos of the "feathers". Instead they featured pics of the whole adult fossil, or an artist's reconstruction showing an adult dinosaur covered in downy fuzz with elaborate fan shaped feathered structures on its arms hovering over a juvenile also covered with downy fuzz. All their readers would have been just as unimpressed as we were when we looked at the photos published in the *Science* article. The juvenile fossil and one of the adult fossils have some fine filamentous material surrounding their bones. The other adult, the one featured in the news reports, has some carbonised lines on one of its forearm bones, but no filaments on its body. There is nothing on any of the fossils that looks like a bird's feather. This editor has seen not just the pics, but the original fossil and is equally unimpressed. In 2009 bird fossil expert Alan Feduccia University of North Carolina, Chapel Hill, published a report on "feathered dinosaurs" and stated that the filamentous material that is promoted as "proto-feathers" on dinosaur fossils is just collagen fibres from decaying skin. He commented: "Collagen is a scleroprotein, the chief structural protein of the connective tissue layer of skin. Naturally, because of its low solubility in water and its organization as tough, inelastic fiber networks, we would expect it to be preserved occasionally from

flayed skin during the fossilization process". (See our report *Dinosaur Feathers or Fibres?* here, and read Feduccia's article here.)
These new fossils fit Feduccia's description very well, and we repeat our previous comment about dinosaur filaments: if it wasn't for the current obsession to link dinosaurs and birds no-one who'd ever seen a bird would ever claim these are feathers. We also note that one of the adult fossils (the one pictured in media reports) has its head thrown backwards in what is technically described as the "opisthotonic death pose" seen in many fossils. Last year scientists carried out experiments with dead chickens and concluded that the posture resulted from sudden immersion of land dwelling creatures in cold fresh water. Such dinosaurs were not fossilised by slow and gradual deposition. They were suddenly and catastrophically drowned, then buried rapidly and deeply to preserve such odd death poses. See our report here. (Ref. fossilisation, skin, proteins)

7. FROM THE ARCHIVES: Each week we publish links to previous items related to this issue's topics: Feathered Dinosaurs, Bird Dinosaur Theory, Dinosaur Cells, Hadrosaurs
Remember also, all our news items and quotes are archived as individual items in the Fact File on our Evidence website here. Make the most of this useful resource.

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