How Old is the Earth?

The Strange Chaos of the Dating System

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We are on a remote, dusty plain in Montana. The Discovery Channel takes us breathlessly to view the excavation of the grave of a 65 million year old, Mama T-Rex. The intact, huge and heavy thigh bone of the weighty mom must be broken in half to enable a helicopter to pick it up, and by this serendipitous event, a researcher later discovers that the inside of the bone yet contains organic tissue! "Currently," a commentator opines, "the bio-chemical community estimates that protein structures can at best last 100,000 years. We will now have to start revising our model of the longevity of protein."

We can doubt this. This would be like the biologists revising the mutation rate of mitochondrial DNA simply at the behest of paleontologists who insist that the bones of the African Eve will certainly be found in the 1.8 million year old early Pleistocene strata of the earth. The mutation rate dictates that there is a 200,000 year limit on the age of this African Mother-Eve of our race, whatever geological layer her skeleton is discovered in. Likewise, there is a theoretical limit to the longevity of protein, and it is not 65 million years (see *Nature Reviews: Genetics*, May, 2001).

The Shaky Parameters of Age

The strange arrogance of the archeological community in this Discovery epic is at variance with the harsh truth underlying the reigning scheme of dating the ages of the Earth – the very scheme that supports the ubiquitous statement that the dinosaurs died 65 million years ago. It is the scheme that encourages the Arizona park rangers to paint a picture daily for rapt crowds, envisioning the Colorado river eating for ages at the rock of the Grand Canyon, creating a mile deep wonder which exposes wonderfully the myriad sedimentary layers that display the geologic history of the earth. This is the somewhat mythical "geological column," though the hundreds of strata that actually make up this theoretical column are found nowhere at any one place on the planet. The simple fact is that the dating of these strata has its origins in a circular logic. At the

time of Darwin's *Origin of Species*, the earth was believed to be 100 million years old, but geologists had no techniques for dating the various strata they observed. Key "index fossils" served the purpose. Trilobites were considered very early life forms. The rock strata (Cambrian) in which they are found, was given a certain age, allowing a guess for the previous time span needed to evolve trilobites. Since then, various dating techniques have arisen, advancing earth's age with scientific certainty to 1.6 billion years in 1934, to a certainty of 3.4 billion in 1947, and is now with certainty fixed at 4.6 billion years. The time span of evolution from one species to another has thus apparently been expanding as well. But due to weaknesses in the dating methodologies, and the simple difficulty of identifying some particular "strata" (of the possible hundreds in the column) under some lonely plain in Montana, the use of index fossils to determine the kind of the layer – Cambrian, Silurian, etc. – has not changed. The trilobite is found in the Cambrian layer, and this layer is (currently) 545 million years old. And if we ask, how do we know it is the Cambrian layer, the answer is: By the fact that we find trilobites in this layer. This circularity does not bode well for the soundness of the system.

Our carbon dating technology is powerless to reach back 65 million years. Carbon dating, is limited to organic material, and due to the intrinsic half-life of carbon at 5730 years, after ten half-lives there will so little carbon as to be undetectable, limiting the effective range to about 50,000 years. (We now have organic material for Mama T-Rex. It will be curious to see if evolutionists really want to know her age via carbon dating.) The method itself is beset with difficulties in practice. Any object that was subject to immersion in water is dated as older than it actually is, for water leaches out carbon, and the dating method relies for its very logic on a predicted rate of carbon decay, therefore a predicted amount remaining in a given chunk of carbon-bearing matter after a certain time. Water leaching destroys the predictability derived from this logic. And water is a big part of cataclysms.

Other methods have proven equally at risk. A very deep layer called the Cardenas Basalt in the Grand Canyon is measured by three different methods at .7 billion years, 1.1. billion years,

and 1.7 billion years – a "minor" discrepancy of 1 billion years. A recent lava flow layer on top of the canyon, at best thousands of years old, is also dated at 1.1 billion. The radiometric dating methods responsible for these dates rest on a decay process and assumptions now becoming ever more complex. When the atoms of the nucleus are excited, decay is much quicker, making things look vastly older. Cataclysms on a vast scale involve high energies that could easily alter "radiometric" clocks. The most heavily used method, potassium-argon (K-Ar), rests on the assumption that the daughter of potassium decay, namely argon, is dissipated away from the rocks of a lava flow at the time of their formation, *before* the decay process being measured begins. This argon "reset to zero" assumption has become increasingly questionable. Anomalies such as dating a 1801 Hawaiian lava flow at 1.2 million years, or 1972 Mt. Etna basalt at 150,000 years, or the new lava dome of Mount St. Helens at 350,000 years, occur regularly.

The Drumheller channels of Central Washington –
also caused by the Lake Missoula floods

Meanwhile, hanging over the head of the park rangers of the Canyon and their picturesque story, is the new consensus on the origins of the Scablands of Eastern Washington. The Scablands look suspiciously like a mini-version of the Canyon in areas. There are gorges with "layers" just like the Canyon. Its formation too was once vigorously held (against the cataclysmic view of Bretz) to require many millions of years. But the Scablands, the newly reached consensus says, were created at the end of the last Ice Age, perhaps 12,000 years ago. They were

created when a gigantic ice dam, over a mile high, holding back the waters of the Ice Age Lake Missoula in Canada, burst, sending a massive volume of 500 cubic miles of water, rushing south. The Scablands were created in a virtual instant of geologic time, in several repetitions over at best two thousand years. The Scablands were created by gigantic water flows.

Water flow. The physics of massive water flow, where the water is carrying huge volumes of silt, gravel and debris, demonstrates that the material is laid down in – layers! The layers are based on different densities of material. And as the materials dry, they form the distinctive layers that look exactly like the layers of the geologic column. And the animal life tend to be deposited in the layers that befit their ability to escape. The trilobites, bottom dwellers and slow, tend to be – on the bottom. But fish – more agile beings – tend to be on higher layers such as the Silurian (425 million years), except for sometimes…when caught by underwater avalanches and trapped in lower layers, such as the agnathan fish found in the lower Cambrian layer recently in China. Since evolution is now a vast presupposition, such findings cause only infinitesimal consternation in the evolutionary mindset, even though the now-Cambrian fish have suddenly lost the 150 million years of evolution formerly thought needed to evolve from trilobitehood.

It is an interesting question to ask how long the Canyon park rangers yet have to tell their story about the Colorado river. There is no handy body of water, such as Lake Missoula, above the Canyon (though it took some time to discover even this powerful source of the Scablands). Utah's Lake Bonneville, the size of Lake Michigan but much deeper, poured out 1000 cubic miles in a flash about 14,000 years ago, but in the other direction, into Idaho. The Grand Canyon's source would be something far beyond a lake. Brennan (*The Atlantis Enigma*), holding for a near pass of a star fragment from Vela – a supernova thought to have exploded around 14,000 years ago – along with many entrained companions, argued that the star's gravitational attraction drew the entire world ocean towards the north, creating a huge standing wave of water. The Hebrew Haggadah describes "waters piled to a height of 1,600 miles" and visible "to all the nations of the earth." As the star moved on and the field weakened, the wave broke. Navaho and

Choctaw legends tell a chilling tale of a period of darkness, followed by a light appearing in the North, and then the appearance of herds of animals fleeing south. Scouts returned with terrifying news of a massive mountain of water rushing down upon them. It soon filled the entire horizon on three sides. When the survivors emerged from their mountain top cave, the mount was completely surrounded with water.

We shall see, but there are many other anomalies that unsettle the vision of a 4-5 billion year old planet with patient Colorado rivers and dinosaurs roaming 165 million years ago. Let me note a few – of many.

Helium Levels of the Atmosphere

On our dear planet, helium is produced by radioactive alpha-decay. Radioactive elements in the rocks, for example, uranium and thorium, produce helium in this way, and it leaks into the air. Given the amount of helium in rocks and the rate of decay, one can extrapolate on the scale of the planet, and this gives 67 grams per second. There are roughly 3.71 billion tonnes of helium in the atmosphere. At 67 grams/second, it would have required 2 million years to reach this amount. This is not 4.6 billion years. And the current rate of decay is in fact slower than the earlier years of the planet as the radioactive sources are drying up so to speak. Is the helium simply escaping the atmosphere? But the probability of helium atoms achieving escape velocity from the earth's field too can be calculated, and the amount escaping is only $1/40^{th}$ the amount entering the atmosphere daily. Upper limit of the earth's age given helium levels: 2 million years.

Continental Erosion Rates

Continents erode. The rivers are the force, moving tons of material off the continents into the ocean day by day. The rate of continent removal can be computed. The average reduction of the continents of the world is 2.4 inches of top surface per 1000 years. At this rate, North America should have been leveled by erosion in 10 million years. The supposed age of the continents is 2.5 billion years. Has man increased the erosion rate? Estimates say that at best,

man could account for a 2X increase. Upper limit of the age of the continents: 10-20 million years.

Distance of the Moon

The moon is receding from the earth. Yes, the rate of recession can be computed, and the rate is one and a half inches per year. The rate would have been faster in earlier times. The closest the moon could ever have been to the earth is determined by the Roche limit, and this is 11,500 miles (2.5 x Earth's radius). Closer than this, the earth's tidal forces would have ripped the moon apart. (This fact happens to preclude the hypothesis that the moon was born as an ejected chunk of the earth.) Given the moon's current distance and the current rate, it would have required a maximum of 1.3 billion years to recede to this point. This is the maximum time the moon could have been around. A vastly shorter time coordinate with thousands of years is more likely, for it is the presence of the moon, *in roughly its current position*, that is essential for the stability of the planet; it maintains the inclination of the earth's axis, with no further tilt. On the other hand, were it again upright, the ice regions of the poles (given they have already formed) could be vaster and colder, the equatorial regions so hot as to be unlivable, and due to the large heat/cold differential, the storms raging across the planet, enormous. In other words, the moon, in its current position, maintains the conditions for livability of many life forms on the planet.

Salinity of the Oceans

While many processes bring salt into the sea, few allow the salt to escape. The salt builds steadily. Of course, it builds at a computable rate. Every kilogram of saltwater contains about 10.8 grams of dissolved sodium ion (Na+) by weight, giving about 1.47×10^{16} tons of NA+ in the ocean. Some of this salt is supplied by rivers and some directly by ocean floor springs and sediments. It is calculated that 457 million tons enter the sea per year, while the minimum possible rate in the past is 357 million tons. A later study in *Nature* increases this 457 million figure, so we are talking conservatively. The exit rate of the salt is a maximum of 122 million

tons per year, and the maximum in the past, 206 million tons. Given all this, the maximum age of the oceans is 62 million years – not actual age – maximum age.

Other Radiometric Anomalies

It is a common occurrence to find ^{14}C (radio carbon) in samples of coal and oil, substances supposedly formed by processes millions of years ago. Even diamonds, supposedly billions of years old, have been found to contain ^{14}C. The interior of diamonds, with their incredibly dense lattice structure and bonds, would make it impossible for contamination to enter. But again the half life of ^{14}C should end in decay after some tens of thousands of years. Even the most sensitive techniques used today should find zero ^{14}C after 250,000 years. The diamonds carbon-dated at 58,000 years. Studies have yet to find any organic material, no matter how supposedly old, that lacks ^{14}C. Effectively, this limits the maximum age of any organic, buried biota to at most 250,000 years. This will include the T-Rex of Montana.

Zircons are crystalline formations found in granite at Precambrian "basement" layers considered to be billions of years old. Yet zircons usually contain helium, and as we have discussed, helium, being a very light atom, escapes rock very easily, and again at a certain rate. Given the amount of helium still in the zircons, the Precambrian basement granite could not be older than 14,000 years.

Radioactive uranium, as it decays in steps, generates a multi-ringed "halo." Such halos have been found in petrified logs discovered in uranium mines in Colorado, spanning geological formations supposedly ranging (according to radiometric dating) from 35 to 245 million years. Yet analysis of these rings showed a large amount of uranium-238 but virtually no lead-206 – the daughter of the U-238 decay process. If the halos were millions of years old, there should have been much more lead. In fact, using the same radiometric dating assumptions, the amount is consistent with thousands of years of decay, not millions. All three geologic formations show the same results, indicating that all are the same (young) age. That there are radiohalos in the wood at all means that the geologic process that stuck the wood in the coal mines happened at great

speed, for the half-life of polonium-210, responsible for the single ring halos discovered, is only 138 days.

Conclusion

It will not be surprising to see authors, even in this journal, continue to refer to ages of many millions of years. The indefatigable Michael Cremo argues for the age of man in terms of many millions of years, based precisely on the deep strata in which human remains and artifacts are found, to include coal mines. All this should change. The fact that there have been periodic, cataclysmic catastrophes involving massive geological forces is becoming well known. That these forces are quite capable of making coal and granite in relative geological instants is also true, but less well known. Firestone et al. (*The Cycles of Cosmic Catastrophe*) have demonstrated how the last Ice Age with its mammoths and its Clovis civilization came to an extremely violent, sudden end. Its about time. And there is not the time for Mama T-Rex to sleep 65 million years.