Geological time or God's time: What the sedimentary record says

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PhD in evolutionary biology, from Cornell University, 1970. I later retrained in geology, and have been teaching at LLU since 1969. I have taught classes in mammalogy, vertebrate paleontology, animal behavior, and Philosophy of science and origins, I have published 8 books, and conducted research resulting in over 45 published research papers.

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Abstract: The secular (materialistic) geological model is based on two primary assumptions: 1) Catastrophes are rare, and most sediment accumulated very slowly. 2) The second primary assumption is that the radiometric time scale gives accurate dates for geological events, and these indicate millions of years The biblical geological model is also based on two primary assumptions: 1) time – a few thousand years since creation - not millions of years. 2) catastrophe – some time after creation there was a major geological catastrophe, the global flood. If we leave assumptions aside, and examine the evidence, comparing the secular geological model, and the biblical geology model – which does the evidence favor? The more we study the geological record, the more evidence is found that is far more compatible with the biblical geology model – rapid catastrophic processes. Many types of evidence are not compatible with long time periods.

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Introduction

Radiometric dating – this process has reached a position in the scientific community of a seemingly unchallengeable geological framework. It is assumed to be based firmly on well-known, solid principles of physics. So how can we question it?

We are discussing this topic because among Christians with awareness of the scientific issues, this is perhaps the biggest obstacle to faith in the biblical scenario of creation, global flood, and a short time since creation week. It would not be wise to use careless arguments against the radiometric (geological) time scale, but it can be challenged. Although we do not yet have an adequate alternative explanation for the radiometric dating *process*, the Bible account of history challenges the *resulting time scale* very directly. The Bible is not the only challenger. In a variety of ways, geological and biological evidence poses serious objections to the reliability of the radiometric time scale for geological history.

The Bible and geological time

A previous paper introduced the following two prominent worldviews, and focused on item two. The present paper will address especially item one – time, and how the amount of time in geological history affects processes in geology and paleontology.

Secular worldview (materialism, or naturalism):

Foundation of the worldview has two pillars:

1. Time: hundreds of millions of years. No creation.
2. Catastrophe: limited catastrophes. No global catastrophe.

Uniformitarianism – geological processes were only like modern processes.

Short age biblical worldview:

Foundation also has two pillars:

1. Time: only thousands of years since creation.
2. Catastrophe: a global geological catastrophe.
   After that event, geological processes more like modern processes.

I will not try to directly challenge the radiometric time scale, but will present several types of evidence that are increasingly incompatible with this time scale. I encourage opening our minds and asking new questions – questions about whether the accepted time scale can be reconciled with the hard evidence in the rocks and fossils. I encourage you to consider the possibility that they cannot be reconciled.

In the Bible we don't find terms like Paleozoic, Coconino Sandstone, sedimentary rock, or glaciation. The Bible has left it up to us to figure these out. The biblical record assists us as we seek to understand the rocks, especially by giving us the two pillars presented above: a time of thousands of years since creation, and a catastrophic flood some time after the creation. These two pillars provide a framework essential for finding answers to many basic geological questions. Since I believe these two pillars are true, I suggest that even mainline scientists would be more successful in their research if they took these seriously, as a help in broadening their geological understanding.

The process of dating rocks

A rock sample will contain original isotopes of certain elements (the parent element), and the elements or isotopes that resulted from radioactive decay (the daughter product). The physics of these processes underlying radiometric dating are portrayed by science as factual and firm. The elements and isotopes involved, and the decay processes that occur in these elements, used in the laboratory analyses

underlying the dating process, do seem to be, as far as I know, well understood (Dalrymple 1994; McRae 1998). However, that is not all we need to know.

The dating process begins with rock samples that are collected in the field and then analyzed in the lab. Every one of these rock samples had a long history in the earth, before being collected. We don't know what chemical and physical factors have affected that small piece of the earth during the thousands of years before it was collected. We don't know how these factors could have altered the sample's physical makeup and the elements we are analyzing in the lab, and affected its apparent age. It is possible that processes during the global flood, or other factors, may have had serious, systematic, influences on the sample's apparent age.

One other important fact to understand is that there is no instrument known, or any instrument that could be invented, that could take a rock sample and measure its age in years. What is measured in a dating lab is the amount of each parent isotope and the amount of each daughter product that is in the rock sample. Then the ratio of the amount of parent to amount of daughter isotope is determined. Ratios are what is measured and provide the data for the dating process. Then some *assumptions* are made, and an age is *calculated* from those ratios. There are always assumptions, even in radiometric dating.

Those ratios change in a systematic way, from the bottom to the top of the geological column. Rocks deep in the earth, in lower parts of the column have different ratios of parent and daughter isotopes than rocks near the top of the geological column. The ratios change through the time when different rocks were deposited. What caused the ratios to change? If millions of years of time had passed, this would make the ratios change. But, what other influences could have systematically changed the ratios, even if the time had been short? We don't know the answer, but we can predict that there were other influences that affected the physical processes in the rocks, giving the appearance of long time, even if that time span did not exist.

We were not there during the thousands of years of earth history, to observe what was happening, and what affected the elements we analyze in the lab. It is dangerous to assume we can now determine, with confidence, what intimate physical

processes were occurring during all that time. In conclusion of this section, the evidence coming from radiometric dating labs follows a systematic pattern, and seems to mean something, but we don't know what it means. We cannot tell how old the rocks are, but we will now turn to a series of other processes that do not fit those long ages. It is not wise to think that physicists in the radiometric dating lab know more about earth history than the God who inspired the Bible writers.

Geological and paleontological data that contradict radiometric dates

In the previous paper in this series (Brand 2023), we learned that rock formations and the individual layers within them cover vastly more geographical area that would be expected by uniformitarian geological theory. We discussed the evidence that these sedimentary layers were deposited rapidly, but we will now examine additional features in these rocks that contradict the radiometric time scale.

When a large amount of time passes, specific processes occur that leave their marks in the sediment, and we can see whether the evidence of these marks, and the associated time, are present in the resulting rocks. These marks include the activity of the ever-present animals and plants, local erosion processes, and other physical effects that occur as time passes.

Many of those widespread geological formations contain hundreds or thousands of individual sedimentary layers, one above the other (Fig. 1). Each of these was deposited by a specific process, and almost all were deposited in some way by water. Secular geology theory is committed to the uniformitarian principle that ancient rock formations formed by the same processes that occur today, or are feasible in the modern world. We can study what happens today when sediment is deposited by rivers, streams, local flash floods, and nearshore ocean currents. Then we can look to see if evidence of the same effects is present in ancient rocks.

Figure 1

Figure 1. Rock formations with many layers. A – Paleozoic Grand Canyon; B – Triassic Moenkopi Formation; C – Jurassic Summerville Formation. Photos by the author.

Bioturbation and erosion

Bioturbation was introduced in a previous paper in this series. We will now look more closely at the process of bioturbation. Turbation refers to processes that disturb the sediment, and bio refers to living organisms. The resulting term bioturbation means disturbance of the sediment by the activity of living plants or animals. When a layer of sediment (mud, sand, etc.) is deposited today by ocean currents or by currents in a river, stream, or lake, those new layers are then occupied by innumerable little animals that walk over it, dig burrows in it, and or crawl through it, below the surface (Fig. 2). There is much more of this occurring than we normally observe, and this bioturbation process in the modern world destroys any layering in the sediment within days or weeks, or even within hours. Even when a hurricane deposits a thicker layer of sediment in a water body the bioturbators homogenize it in a surprisingly short time.

Figure 2

Figure 2. Beach bioturbators. Left – a crab by his burrow; right – bristle worm. Public domain images.

Some of the ancient sediment layers were deposited on land, rather than in a water body. Even those layers were deposited by water, and they do not escape the bioturbation process, but are occupied and bioturbated by the activity of mice, squirrels,

and millions of worms that churn the sediment and destroy evidence of the discrete layers of sediment. It may not occur as rapidly as in a water body, but the result is much the same.

The other group of bioturbators are plants, that send their roots down into the soil. Tree roots can go very deep, and the roots of trees and smaller plants leave their abundant marks in the soil.

The radiometric time scale calls for millions of years to pass while the layers in rock formations like those in Fig. 1 are deposited. If this were true, those layers should contain abundant evidence of bioturbation all through them, or, more likely, all evidence of separate layers should be destroyed. However, this is not what we find in the rocks. There is some evidence of bioturbation, and this is not surprising. Even during the biblical flood there were innumerable animals in the water, trying to survive, and they would no doubt burrow into the sediment when they had a chance, as their habit is.

Although there is some evidence in the rocks of bioturbation, it is very sparse – there is only a minute fraction of what should be there if all that time had elapsed. Fig. 3 shows rocks with different amounts of bioturbation.

Figure 3

Figure 3. A – no bioturbation. B – medium bioturbation; three vertical burrows, that do not disturb the sediment layers. C – thoroughly bioturbated sediment. Scales are 10 cm. Photos by the author.

A colleague, Arthur Chadwick, and I surveyed the quantity of bioturbation in a number of rock formations, from Cambrian to Eocene. A vertical section was studied through each formation, and in each part of the section the amount of bioturbation was classified in one of four levels. Level one had no bioturbation, or a few burrows that did not disturb the sediment layers (A or B in fig. 3). Level four was thoroughly burrowed (C in fig. 3), and levels two and three were intermediate. At least 98% of the sediment

surveyed was in level one. The formation with the most bioturbation had about 2.6% in level four, and a slight amount in level two or three, and the rest was level one. Many formations had only level one bioturbation (unpublished data).

Such a low amount of bioturbation cannot be reconciled with the conditions required in the uniformitarian concept, with the expected hundreds of millions of years of slow deposition. The evidence is most consistent, and probably only consistent, with the conditions expected in the biblical flood.

In many environments, bioturbation by animals is accompanied by growth of plants that send their roots down into the earth. As the seasons and years pass, these roots disturb the sediment and may leave recognizable evidence of their presence, if that evidence was not destroyed by the animal burrowers.

When a sediment layer is deposited, and then long time periods elapse before the next layer is deposited, another process that is expected to occur is erosion of the surface. Every place on earth, as the years and centuries go by, is experiencing either deposition of sediments or erosion of the surface. There aren't many places where nothing is happening. Water moves and carves ditches, gulleys, or even canyons, or at least makes irregularities on the surface. We do see some of this in the rock record. During a geological catastrophe we would expect all of these processes to occur, including some serious erosion. The surprising thing is how often the layers of rock are flat and even, for long distances, with little or no erosion. This is not what happens today, even under modern conditions, and certainly does not match what we would expect to happen during millions of years of slow geological activities.

Very often in the geological record there also are sharp contacts between layers of sediment. These sharp, continuous contacts can be seen in Figs 1 and 3, above. If long ages had passed, with the expected persistent bioturbation and erosion, these sharp contacts should have been mostly destroyed, along with the evidence of layers within formations. The clear layers and sharp contacts are important parts of the evidence geologists use to understand what processes deposited the sediment, and in what ancient environment they formed. Why is there still enough of this evidence for

geologists to be able to understand the history of the rocks? Why wasn't all or most of that evidence destroyed by bioturbation?

A friend once took a geology class on bioturbation and related evidence. The teacher, a world expert in bioturbation, made the comment in class; "I don't lose sleep over it, but I wonder why there isn't more evidence of bioturbation out there." The answer, I believe, is that there wasn't nearly enough time in geological history for all that bioturbation to occur. There also is not enough sediment with evidence of conditions, such as a lack of oxygen, to prevent bioturbating organisms from being there.

Cross-bedded (eolian?) sandstone

A previous paper in this series, *Digging for fossils*, described research on the Coconino Sandstone, a body of cross-bedded sandstone in western USA. That paper focused primarily on the question of whether the sand was deposited in a desert or underwater. I will now discuss additional issues regarding how this cross-bedded sand originated, expanding on the implications for geological time.

A number of cross-bedded sandstones are interpreted as eolian (deposited by desert wind) formations. Two of the most prominent are the Permian Coconino Sandstone, and the Jurassic Navajo Sandstone, both in western USA. A similar formation is the De Chelly Sandstone, also in western USA. As we described before, the Navajo Sandstone covers a very large geographic area, and it is believed that it originally covered a much larger area, but much of it was removed by erosion before it became sandstone. These two formations, the Coconino SS and the Navajo SS are the focus of conscious controversy between secular geologists and short age flood geologists. The focus is on whether it was deposited by wind or by water, but this is also influenced by questions of geological time.

Secular geologists object to those of us who think these sandstones were deposited during the biblical flood. I have also heard these geologists say that eolian, desert sandstones, like the Coconino SS and the Navajo SS, are the biggest embarrassment to flood geologists. A major, long-lasting desert would indeed be

difficult to explain in a global flood. Large deserts, like many in the modern world, take thousands of years to form. The winds that deposit them would not accomplish this quickly, but take very many years to pick up all that sand and bring it into one region and deposit it as dunes (Fig. 4).

Figure 4

Figure 4. Top – a modern desert. The wind moves the dunes around, but does not pile up stacked sets of cross-beds. Bottom – the De Chelly sandstone- a typical cross-bedded sandstone, with stacked sets of cross-beds. Photos by the author.

Sand is also carried, today, by flowing water and deposited in dune-like concentrations. This happens on a large scale in the ocean. It is difficult to do research on these deposits in the ocean, but they are closer to what we could expect to happen in a catastrophic flood. Most geologists are not willing to consider the underwater "dunes" as a possible explanation for the cross-bedded sandstones, because of a strong commitment to the desert, eolian theory.

Conventional, secular geology theory also claims that all the sand originated by granitic rocks being slowly broken down into sand grains, which are then carried by wind and smoothed into rounded sand grains. These processes would indeed take millions of years. There has to be a different process that produced the sand, and we will come back to that.

As indicated in the discussion above, the questions about wind or water deposition of the sand is intertwined with the question of time. An underwater environment is easier to fit in a catastrophic flood, and Is there evidence that is not compatible with a desert origin of the sand? Yes, there are several types of such evidence.

In the Coconino SS and the Navajo SS there commonly are two types of sand grains that should not be there. One is mica, as small, flat, mica grains. The mica is soft, and easily destroyed. Such mica grains are commonly found today in water that is carrying sand. When they are in water, the water cushions the soft mica from destruction when contacted by moving sand grains. However, if the sand is carried out of the water and deposited by wind in sand dunes along the shore, the mica is quickly destroyed by bombardment by sand carried in the wind. Thus, the mica is common in water, but does not last long in wind-carried sand. Because of this, those little flat mica grains should not be found in large eolian sand deposits. However, they are common in the Coconino SS and Navajo SS. If these sandstones were really eolian dunes, the mica should not be there. The research literature on these sandstones does not include evidence that eolian sand dune researchers are looking to see if mica is there. Why do they not look for mica, to test their eolian theory?

Another sand grain that should not be common in eolian sand is rounded grains of feldspar. Sand deposits are mostly quartz sand grains, but there is usually also some feldspar. Feldspar grains are softer than quartz, and in wind blown sand they become rounded by the same process that destroys the mica grains. Angular feldspar grains are common in underwater sand, but in wind-blown sand, as seen today, they are more often rounded. Why do sandstones like the Coconino SS and Navajo SS contain few angular feldspar grains? This can be explained if the sandstones formed in subaqueous conditions.

The previous paper on cross-bedded sandstones, introduced you to bounding surfaces, which are more or less horizontal boundaries between sets of cross-beds. There is a published paper describing how such boundaries are believed to form in deserts, as a set of sand dunes is carried by the wind, removing the tops of a previous set of dunes, and leaving a horizontal bounding surface on which a new set of dunes is deposited. That is the accepted theory, but in all the many modern deserts, around the world, *not one example* of that process forming bounding surfaces has been found. I have not found a paper discussing why we don't find such evidence. Perhaps one could argue that the process in modern deserts is a little different from what happened

in the ancient past. However, with so many deserts in our world today, that is not a convincing explanation, especially when that type of bounding surface can be easily produced underwater, experimentally, in a flume (Monte Fleming, personal communication). A catastrophic deposit of sand during a global flood offers a much more convincing explanation for these several types of evidence. In fact, I suggest that catastrophic flood conditions may be the only way to form so many distinct bounding surfaces.

Where did all that overwhelming amount of sand come from? Is there an alternative to the theory that sand forms gradually by breakdown of granitic rocks, over millions of years? That depends on whether we are willing to accept the possibility of miracles. If huge amounts of sand and clay were needed to make soil on the surface of earth, as it was remodeled during creation week, suitable for growing lush vegetation, where did all the sand and clay come from? During creation, miracles were necessary for the origin of animals and plants, so why not also for making the ingredients of a quality growing surface for plants?

There is another possibility to consider. If the universe was created long before the biblical creation week, then normal geological processes could have been allowed to make all that sand on the earth before creation. That doesn't really resolve objections to miracles, because it would still require miracles to arrange all that sand and clay into the needed composition of soil. That does not happen automatically.

Proteins and other molecules in fossils

In recent years there has been a rapid increase in discovery of proteins and soft tissues preserved in fossils. Those biochemical materials today are known to decay in a few thousand years. How could they be preserved after many millions of years in the earth? This incredible problem for the radiometric time scale will be discussed by Dr. Phillips.

Fossils and time

Those of us who study the fossil record are often awed by the amazing variety and the quality of fossils in the rock record. Some fossils are battered and broken, but so many are exquisitely preserved (Fig. 5).

Figure 5

Figure 5. well-preserved fossils. A – Permian amphibian, Germany. B – Eocene turtle, Wyoming. C – Eocene bat, Wyoming. D – Eocene fish, Wyoming. E – Cretaceous *Triceratops*, Wyoming. F – Eocene fossil horse, Wyoming. Photos by the author.

The study of what happens when animals or plants die, and how fossils are preserved is called taphonomy. When an animal dies, bacteria, mostly from inside the body, begin to break down the animal's tissues. This process proceeds fairly rapidly, and the tissue destruction is often accompanied by the work of scavengers.

After death of an animal, there is a sequence of processes (Fig. 6) that destroy the body. In an environment with many scavengers, they will likely strip the carcass of tissue in a few days. If scavengers are scarce, the carcass will first be invaded by smaller organisms. Insects lay their eggs, and larvae rapidly devour the flesh, aided by bacterial decay. Then scavengers and other processes break down the skeleton over time. These processes destroy a dead animal unless it is buried rapidly, to stop the decay and disarticulation process.

Even in the ocean, when a huge whale dies and sinks to the ocean floor, scavengers and bacteria remove the soft tissues in about six months. Then the bones are gone in a few years.

Figure 6

Figure 6. Partial decay sequence of a cow. Left – soon after death, part of the soft tissue has been destroyed by insect larvae. Right – Soft tissue is gone, and the skeleton is disarticulating. Photos by the author.

Only if animals or plants are buried quickly after death, will these processes be stopped, and a fossil be preserved.

Some fossils are sufficiently well preserved to indicate almost instant burial. In Brazil, in the Santana Formation there are numerous fish that are preserved in a three-dimensional state (Fig. 7E). The tissues and organs inside are preserved so well that their internal anatomy can be studied. A taphonomy researcher has suggested that mineralization (fossilization) must have begun within a few hours (Martill 1988).

Invertebrate animals do not have bones, but are entirely soft-tissues, with a covering of chitin and other materials. Even these invertebrates are often extremely well preserved as fossils (Fig. 7 A-D, F).

Figure 7

Figure 7. Soft-bodied fossils and others with especially fine preservation. A, B, C, D, and F – invertebrates with a chitinous covering, and no bony skeleton. A – trilobite, Paleozoic, Morocco; B – soft-bodied fly larvae; Eocene, Wyoming. C – horseshoe crab, at the end on its trail. D – dragonfly, Jurassic. Germany. E – a Santana fish, Brazil. F – a trilobite with soft-tissue legs and antennae preserved. Photos by the author.

If what I have said above is not correct – if organisms don't need special conditions (rapid burial) to be fossilized, it should be possible to find a lot of fossilization

occurring today. Do we find that happening? It does happen, but only in very rare and unique conditions.

There are places, like the La Brea tar pits in California, where tar is seeping to the surface, making pools of soft tar. Animals fall into the tar and are safe from scavengers, and are preserved by the tar. Or scavengers attack them and are themselves caught in the tar. Hundreds of complete skeletons, thousands of years old, are preserved in the tar.

In Europe there are some acidic peat bogs with human bodies, several thousand years old, preserved because of the acidic conditions in the peat. In the arctic, animals can fall into cracks in the ice and become frozen. Some very old frozen animal bodies are still fairly well preserved, although you would not want to eat them. In very dry desert caves there have been some animal bodies preserved by mummification in the dry environment. In these caves there are deep deposits of giant ground sloth dung, thousands of years old. It is not fossilized, but did not decay, because of the unique environmental conditions.

It has been noted that fossilization in the last geologic period, the Pleistocene, only occurs by very unique conditions, like those I just described. This seems to indicate conditions matching what happens now, in our modern world. Just below the Pleistocene, and in all the rest of the geological column, fossils occur only in water-deposited sediment, and these are the fossils that required rapid burial.

What happens to the millions of organisms that die in the modern world? They die, decay, and are gone. One careful study illustrates this process. In Africa there are herds of millions of Wildebeest that annually undertake long migrations, in the dry season, to find food and water. In this journey they must cross rivers, and in some years these rivers are a serious danger. In one year, it was documented that about 10,000 Wildebeest were drowned in these river crossings (Fig. 8). We should find a lot of Wildebeest fossils – right? The fate of these carcasses was documented, and after ten years, no more bones could be found. This is characteristic of what happens in our modern world – fossils do not form, except in those unique tar pools, peat bogs, etc.

Figure 8

Figure 8. A Wildebeest, and a group of drowned Wildebeest carcasses in a river. Public domain images.

Fig. 9 includes one more soft-bodied invertebrate, a Silurian eurypterid. The Silurian is dated at over 400 million years ago, and yet this eurypterid is beautifully preserved. Compare this to what a rotted Wildebeest would be like.

The other item in Fig. 9 is a coprolite, probably from a crocodile. Coprolite is a polite name for fossilized poop. The fossil is enclosed in finely laminated carbonate lake sediments (Fig. 9, lower right), and the laminations are each a fraction of a millimeter thick. The radiometric time scale would indicate that only one or a few laminae were deposited each year. The coprolite is enclosed in 180 laminations – I counted them under a microscope! Did this piece of poop lay on the bottom of the lake for a century, with no decay? Not a chance! Decay of animal tissue, including poop occurs primarily by anaerobic bacteria, which do not use oxygen. So, even if the water was anoxic, decay would be rapid. Such coprolites (there are millions of them) had to be buried and fossilized rapidly, which raises unsurmountable challenges to the time scale and to uniformitarian theories of how this sediment was formed. No one knows how the laminae were formed, but the fossils indicate there must be such a process. Why do not other geologists see this? Their worldview, with its assumptions, does not allow the radiometric time scale to be challenged.

Figure 9

Figure 9. Upper right – Eurypterid, Silurian. The others are a crocodile coprolite and a microscopic view of the sediment layers enclosing it. Eocene, Wyoming. Photos by the author.

There is so much more that could be said on this topic. I will present one more amazing feature of the fossil record. To get a more adequate understanding of the fossil record, visit the annual fossil and mineral show in Tucson, Arizona, USA. Hundreds of fossil dealers from over the world gather there to display and sell their fossils. Many of the photographs I am showing were taken there.

Besides the innumerable individual fossils, an awesome number of fossils are in mass mortality layers, which can be very extensive. The examples shown in these photographs, in Fig. 10, are very small samples of far larger accumulations.

Figure 10

Figure 10. Fossil mass mortalities. Right to left, top to bottom; ammonites, crinoids, clams, small ammonites, fish, starfish, nautiloids, squid, three photos of trilobites, sand dollars. Photos by the author.

These accumulations, often with one, or primarily one, species, massed together, do not represent normal living populations or environments. A much more likely explanation comes from the ability of fast flowing water, as in a significant flood, to sort items by size, shape, or other features, resulting in masses of similar organisms gathered in one place. These photos document catastrophic mass mortality events. Rapid burial in a catastrophic event is needed to explain much of what is in our magnificent fossil record. I suggest to you, that the only adequate explanation for our wonderful fossil record is the global, catastrophic, geological flood described in Genesis. If that event had not happened, we would have a very sketchy, inadequate fossil record.

Around the world there are a large number of fossil sites with so many well-preserved fossils, that there is a specific name for these sites – lagerstätten. The fossils in individual lagerstätten vary from small invertebrates to thousands of large whales (Benton and Harper 2009; Esperante et al. 2015).

Conclusion

The prevailing scholarly world of today has chosen to accept the secular worldview described above, with its assumptions that the radiometric dating system gives true dates for rocks and fossils. We don't have adequate explanations why the system for dating rocks gives fairly consistent ages for these rocks. However, I have outlined some of the strong reasons why this dating system cannot be correct. In both biology and geology there is increasing evidence that something is seriously wrong with major features of the Darwinian theory of evolution, the accepted dates for the rocks, and the popular interpretation of the geological record. The evidence I am talking about comes from the advance of science. Our faith is not built on science, but God is revealing advances in science that support our faith. The more I study biology, paleontology, and geology, the more confidence I, and many of my colleagues, have in the literal interpretation of the creation week, the short time scale, and the global flood described in Genesis. The evidence presented here can encourage others to accept the Genesis record as reliable. Additional evidence and written material, videos, and other helpful material on this topic can be found in the separate document called *Origins Resources*.

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Appendix - figures

Figure 1

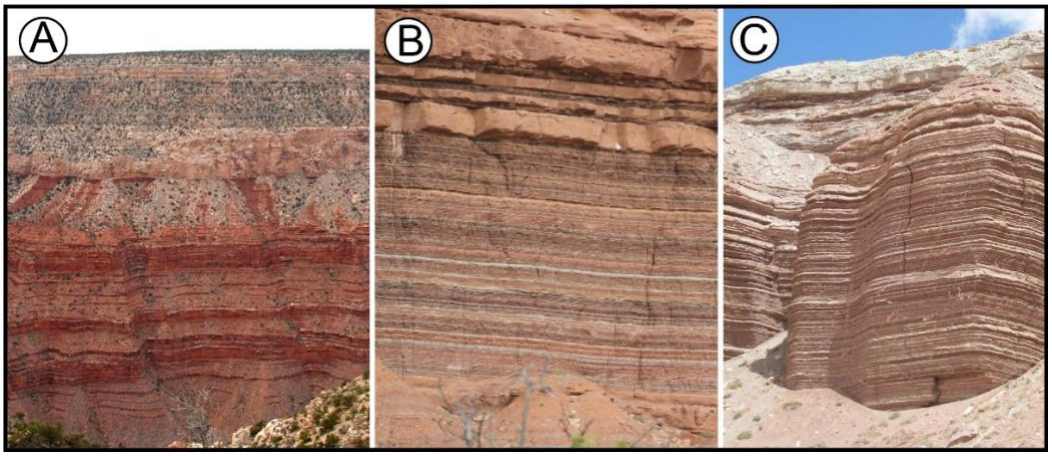

Figure 2

Figure 3

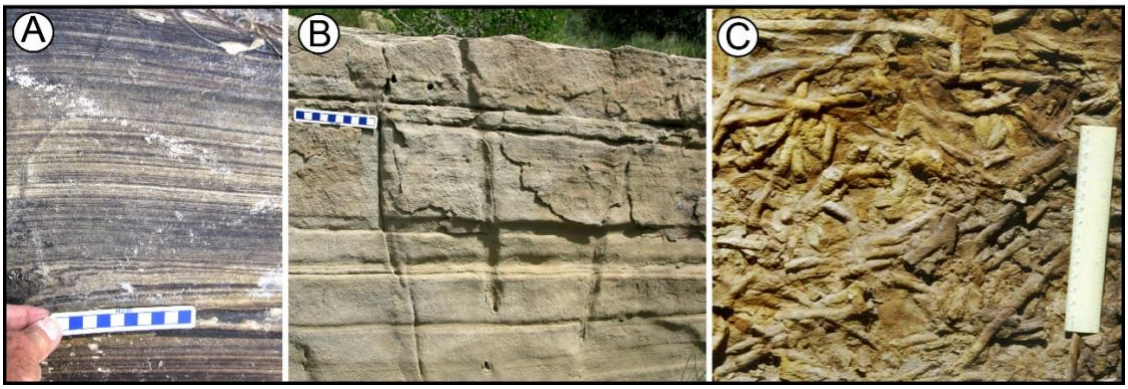

Figure 4

Figure 5

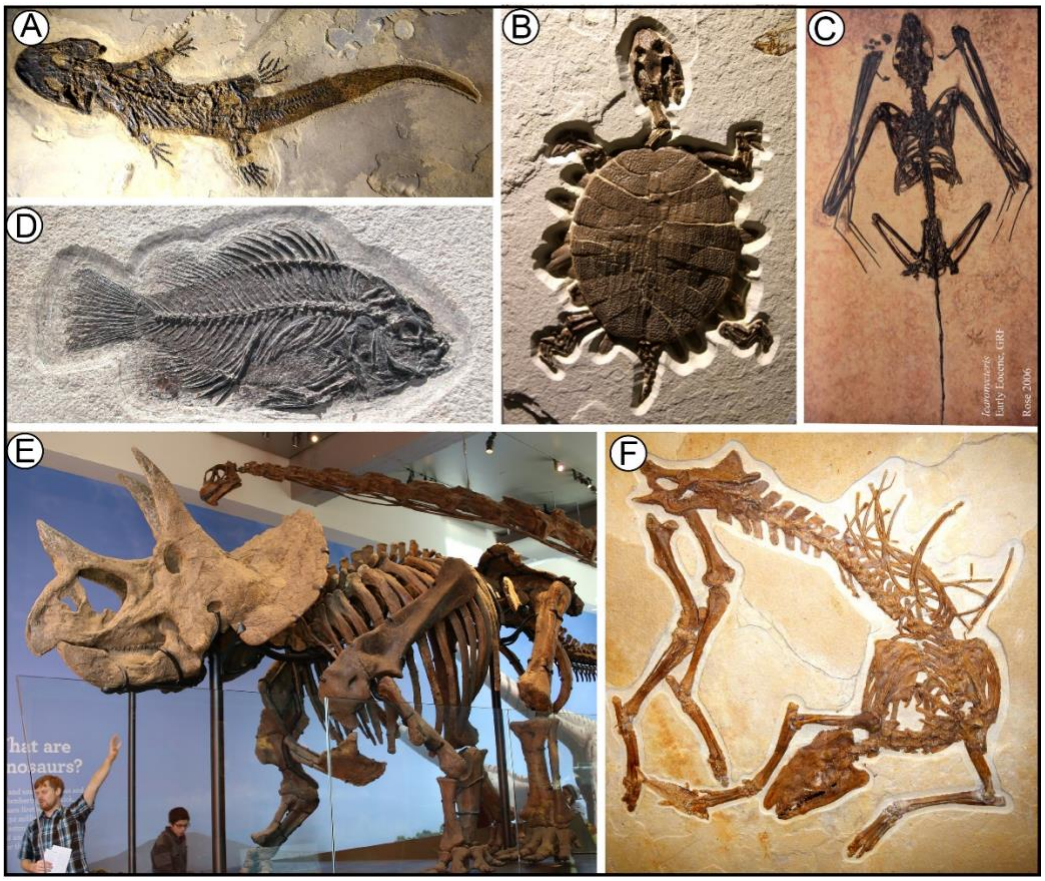

Figure 6

Figure 7

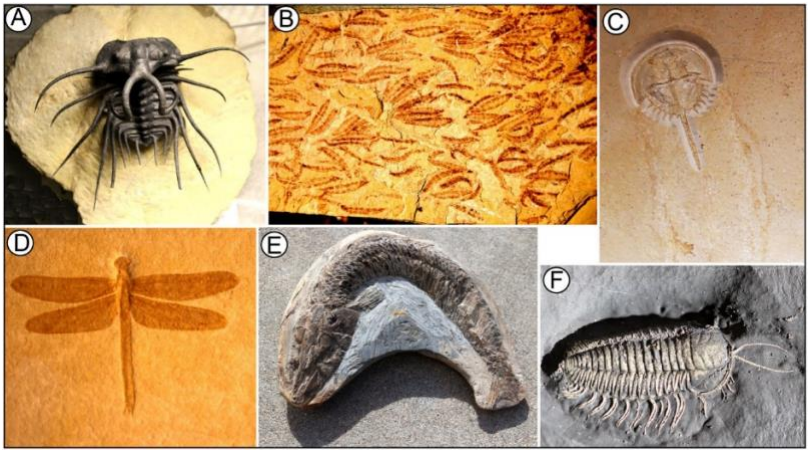

Figure 8

Figure 9

Figure 10