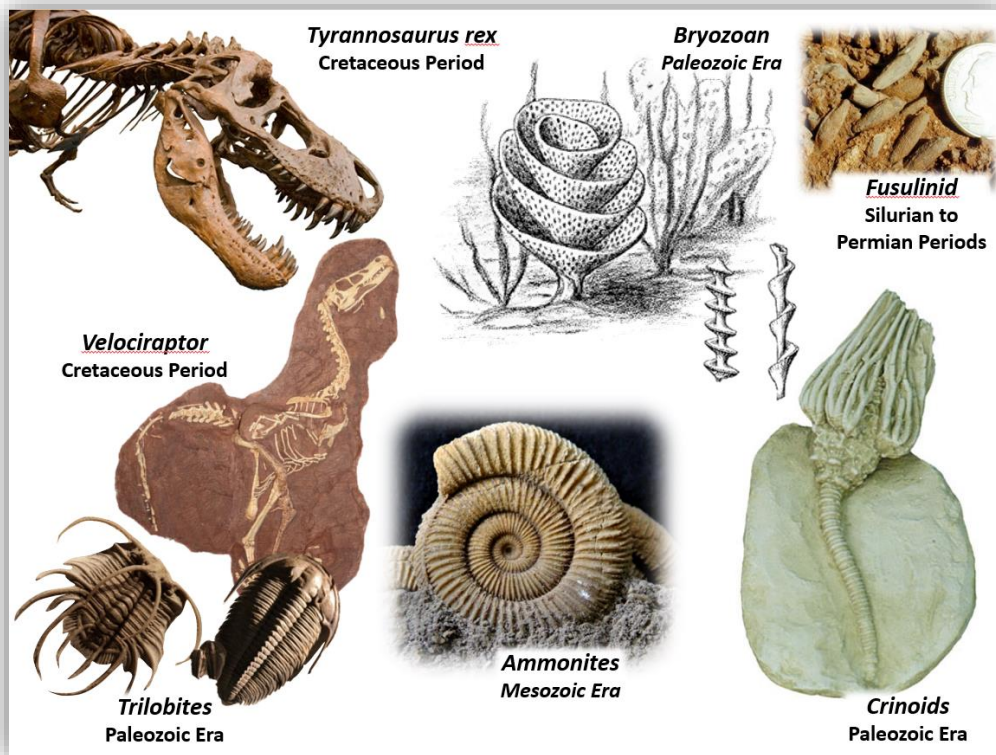


Issue #4: Fossil Record

Stephen Mitchell

June 1, 2021

Email: Jesus.inHistandS@gmail.com



from Mitchell (2018)

Assertions:

1. We observe changes in the fossil assemblages through the stratigraphic record.
 - Modern species do not appear until the most recent levels.
 - Earliest species are not found at all today.
 - Species appear at specific levels, are found for a period of time and then disappear
 - The oldest levels, not only do not have mammals or modern invertebrates, but do not include calcareous nanofossils or microfossils such as are extremely common in later deposits
 - We are able to develop global stratigraphy utilizing this faunal succession and physical stratigraphic relationships, regardless of what caused the changes.
2. The YEC models predict that God created all of life 6000-10,000 years ago essentially as mature species. (Some believe some sort of hyper-evolution took place after the fall, developing the modern carnivores.)

3. Flood geology proposes that the global flood caused all of the flood deposits to be formed in one year, causing the death of all land creatures except for those preserved on Noah's ark. The proposed catastrophe and hypothesized tsunamis would have caused dramatic deposition swept from continental shelves into deepwater, resulting in fossils from all of the life existing at the time.
4. The fossil record is not consistent with a global flood origin.
 - We do not observe the homogenizing of life that we should see from a catastrophic event deposit.
 - At least some modern species should be present throughout the record. (Just one modern guppy fossil in the Cambrian would be amazing.)
 - Other older species also should be present throughout. (For example, dinosaurs, and ammonites, etc. should have been found in the Paleozoic and Cenozoic sections.)
5. The fossil record is not consistent with a 6-10,000-year-old earth.
 - The progression of life reflects a much longer time when the many populations lived and died
 - For lifeforms to have grown to maturity as reflected in all of the layers took significant time.

Key Assumptions:

- a) The fossils in the rock are real.
- b) We can recognize the basic order of deposition.
- c) When the same pattern is found on every continent, this is not a local effect.

Discussion:

Imagine one of these headlines in a scientific news journal: Fossil dolphin skull found in Cambrian fossils from China; Or perhaps a rat fossil from a Carboniferous coal deposit; Or perhaps a dinosaur skeleton from the Oligocene. Any such discovery would make the discoverer famous. Paleontologists have recorded fossil assemblages from around the world in great detail. The succession of lifeforms that has resulted is very real, regardless of the time period or the cause of it. Organic matter preserved in rocks has been really important in our society. Coal, oil and gas are directly derived from it and such deposits are not randomly formed. Petroleum geologists use fossil data in their studies primarily to identify the geologic age (the relative age), and to characteristics of the depositional environment. It is an important characteristic that key fossils, known as index fossils can be correlated globally. In practice the microfossils are particularly critical. These can be identified in drill cuttings. We use microfossils to understand the paleobathymetry and many details about the environment. We find fossils from every different type of ecological niche throughout the record but the species change. For instance, it is true that we find forams that float along the surface that change through time, but we also find bottom dwelling species, benthonic forms, along the water bottom that changed both with water depth and with the environment, such as deltaic or open marine today. We see the same progression of assemblages in the rock record as well. But the species changed through time. Geologists use this

information on a daily basis to recognize the water depth at the time of deposition. We don't find forams at all in the oldest rocks.

Another floating species example is ammonites. They changed progressively through microevolution throughout the Mesozoic. (**Figure 1**) Yet they are absent in the older Paleozoic rocks and in the later Cenozoic rocks. We see this pattern of appearance and disappearance over and over. Trilobites are a great example of this. (**Figure 2**). These complex wonders, in some cases with compound eyes, similar to modern insects, appeared suddenly in the Middle Cambrian with the "Cambrian Explosion". They lived primarily in marine saltwater environments of many depths all around the world. FG needs an explanation for why ammonites and trilobites are restricted to certain parts of the record, not just as the level of class but as individual species that appear consistently over very broad area and can be used to work out the detailed stratigraphy of areas.

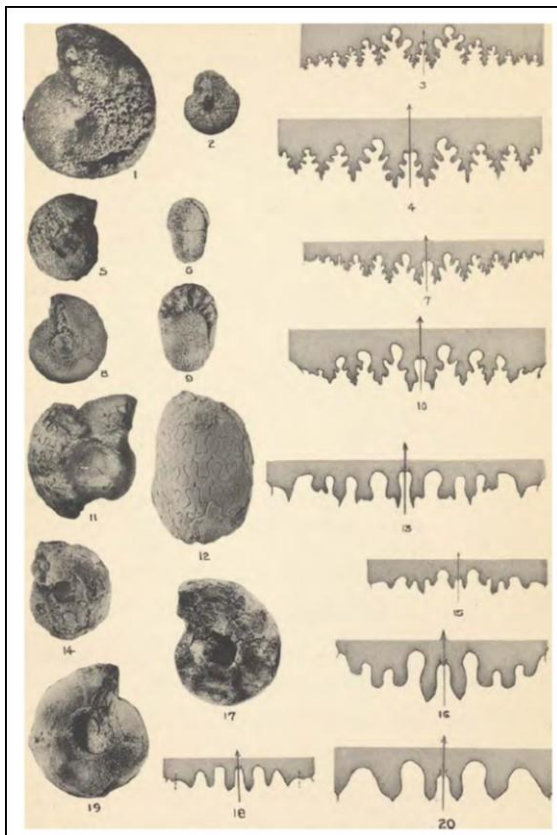
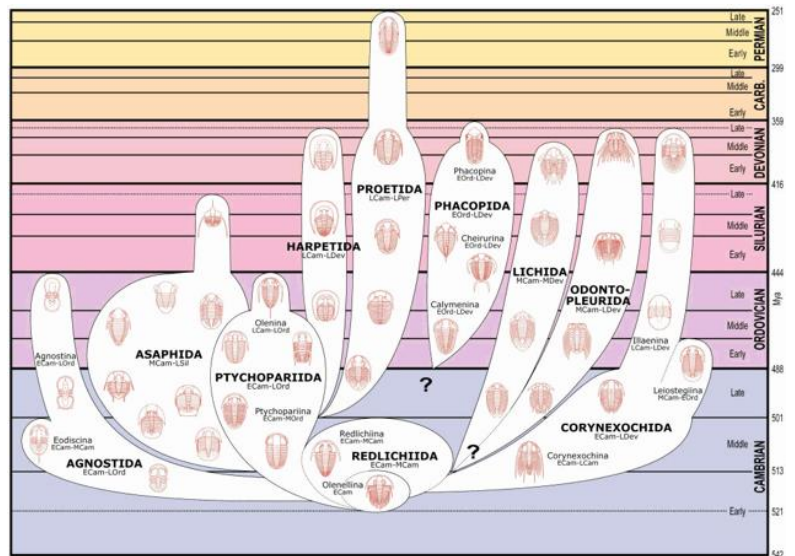


Figure 1: Ammonites (not the ancient enemies of the Israelites) were coiled cephalopods that were similar to the today's nautiloids. They floated at or near the water surfaces, and as an animal grew, it built new larger chambers separated by walls known as sutures. The suture patterns changed through time and are used to provide correlation, particularly through the Mesozoic era. Reproduced by permission of the Bureau of Economic Geology (Sellards, Adkins, and Plummer 1932).

Figure 2. Trilobites changed in form throughout the Paleozoic Era. Identifying the species provides a strong means of correlating strata deposited during this time. (Gon 2009).



Microfossils like pollen, forams and calcareous nannofossils are ubiquitous in modern fine-grained sediments, yet are not known or have changed dramatically from Paleozoic forms. Calcareous mud and tiny platelets or “coccoliths” were formed by algae and settled on the ocean bottom through the Late Cretaceous Period forming the chalk units such as along the coast of England today. **(Figure 3)** They are the most important of the microfossils known as “calcareous nannofossils”. They are also found in essentially marine shales from when they appear in the fossil record, though their shapes changed many, many times. Their first appearance is described here:

“First recorded occurrences of calcareous nannofossils (nannoliths) are from the late Triassic (Carnian). The locations from which the earliest nannofossils are found include; the Northern and Southern Calcareous Alps, Timor, North-West Australia and Queen Charlotte Islands (Canada), all low latitude sites at the time.” (University College London, nd)

These tiny marine algae were distributed over 4 continents, but never appeared in the Paleozoic. Why would that be? The individual platelets, known as coccoliths are found all around the world. Different forms of the coccoliths appeared through the late Triassic to the present, apparently changing through microevolution, and are used by biostratigraphers to help in building stratigraphic frameworks all around the world. FG really again needs to explain why they are not found in older strata and why these changes prove to be so valuable in detailed stratigraphic frameworks.

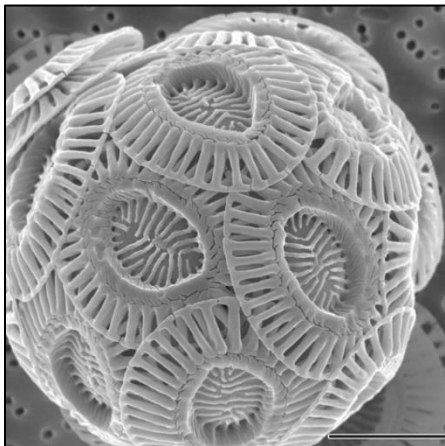


Figure 3. Scanning electron micrograph of an algal coccolith cell (By Alison R. Taylor (University of North Carolina Wilmington Microscopy Facility) - PLoS Biology, June 2011, Cover ([1]), CC BY 2.5, <https://commons.wikimedia.org/w/index.php?curid=15662212>)

Think about the popular YEC cataclysmic tectonic model. It proposes that the continents are battered by tsunami waves, as the continents moved around the globe at rapid rates. This would have dictated rapid deposits that would have mixed the sediments and lifeforms throughout. It doesn't really work to have this series of giant tsunamis around the globe resulting in the same order of fossil deposits on all the continents.

An additional question can be asked. Why would God create millions of species of magnificent life to have them live for just a few years? The YEC model means that many, many species ranging from truly strange Cambrian species to trilobites to crinoids to ammonites to dinosaurs and early mammals lived for 1656 (or maybe a few thousand more if the earth is considered 10,000 years old). Admittedly there are dangers in saying that we understand why God does or does not do something, but it would certainly be a strange plan to me.

YEC explanations:

Books by George McCready Price and Whitcomb & Morris (and the occasional more recent author) reject the fossil order as an artifact to support evolution. More modern authors, such as Snelling, Clarey, Austin, Gardner, and Oard recognize the validity of the observation of the faunal succession.

One YEC proposal to explain the fossil distribution has been **hydrodynamic sorting**. This proposes that the heavier and larger fossils would have settled first. This answers very little in the fossil record. Another proposal for some fossils is that that animals that were **more mobile** were able to run upslope to avoid the early flood. It also says nothing about the changes in species that attached to the bottom. Does this mean that ancient coral or crinoids were able to migrate upslope in a few days?

I have often heard that the dinosaurs were able to migrate away from the early deposits and the mammals went farther. The idea that the fast dinosaurs were slower or dumber than the sloths and other slow mammals doesn't really work. Kevin Nelstead (personal communication) described the differential mobility problems is this way:

- Dinosaurs and other large animals would have had to migrate hundreds of miles to get to those high points.*
- These migrations would have had to include small animals the size of a mouse as well as large animals. It also would have had to include slow animals as well as fast animals. I suspect an ankylosaur was not the fastest of critters.*
- It is not just bones and shells that are preserved in the fossil record, but nests and burrows. These indicate that creatures were not in a state of panicked migration when they were entombed.*
- Migrations would have had to occur very rapidly, as the YEC model does not allow for weeks or months for migrations.*
- It does not seem reasonable that all Cenozoic mammals outran all Mesozoic dinosaurs.*
- It does not seem reasonable that sparrows outflew pterodactyls.*

Does the fossil distribution represent different types of flora and fauna from different areas such as we have differences in North American animals compared to the other continents? George McCready Price proposed this early on. Again, Kevin Nelstead described the problems with this pre-flood ecological zonation like this:

- There are deep marine fossils in the Paleozoic, Mesozoic, and Cenozoic.*
- There are shallow marine fossils in the Paleozoic, Mesozoic, and Cenozoic.*
- There are shoreline fossils in the Paleozoic, Mesozoic, and Cenozoic.*
- There are terrestrial fossils in the Paleozoic, Mesozoic, and Cenozoic.*
- There are lake fossils in the Paleozoic, Mesozoic, and Cenozoic.*
- There are desert fossils in the Paleozoic, Mesozoic, and Cenozoic.*

Some YEC claim that the fossil record contains many “**out of order**” such as Gary Bates and Lita Cosner (2014). They give examples like early well-preserved jellyfish (505 mya) and an octopus (150 mya). Soft bodied fossils are rare and thus it is not surprising that we don't have a detailed picture of when such animals appeared. We certainly have had related fossils from these periods for a long time. They explain that “grass didn't evolve until at least 10 million years after dinosaurs went extinct”, but grass has been found in amber from 100 million years ago.

<https://today.oregonstate.edu/archives/2015/feb/amber-fossil-links-earliest-grasses-dinosaurs-and-fungus-used-produce->
[lsd#:~:text=CORVALLIS%2C%20Ore.,intertwined%20with%20animals%20and%20humans.](https://today.oregonstate.edu/archives/2015/feb/amber-fossil-links-earliest-grasses-dinosaurs-and-fungus-used-produce-)

It is true that it seems to have had very little impact until the Paleocene-Eocene, but more will be learned with time. All of the earliest evidence of grass comes from Asia, so perhaps started there. Paleontology is still learning.

Bates and Cosner give the example of the compound eyes of some trilobites. This may be a problem with the evolutionary model for the development of the eye, but the trilobites were in the proper position stratigraphically. I have no desire to defend evolution. Naturalistic evolution is not supported at all, and I doubt even theistic evolution is valid, but I am not a biologist.

We may continue to learn from new fossils about when the first appearance of animals and plants was. Finding a new mammal in the Cretaceous hardly upsets the apple cart. The type of fossil mixing that global flood models should have just don't exist. The early flood deposits should include a wide assortment of modern faunal orders. The top parts of the flood should include most of the species from the lowest part.

References:

Bates, G and Cosner, L., 2014, “*Are there out-of-sequence fossils that are problematic for evolution?*”
<https://creation.com/fossils-out-of-order#>

Gon, S. I. 2009. “Trilobite Biostratigraphy.” Retrieved from Trilobites:
<http://www.trilobites.info/biostratigraphy.htm>

Mitchell, SM, 2018, *A Texas-Sized Challenge to Young Earth Creation and Flood Geology*, Meadville, PA, Christian Faith Publishing, Inc

Price, G. 1913. *The Fundamentals of Geology and Bearings on the Doctrine of a Literal Creation*. Pacific Press Publishing.

Sellards, E., Adkins, W., and Plummer, F. 1932. *The Geology of Texas, Volume 1, Stratigraphy*. Austin: University of Texas Bulletin.

University College London, nd, “Calcareous Nannofossils”,
<https://www.ucl.ac.uk/GeolSci/micropal/calcnanno.html>