Fossil range extensions continue

Michael J. Oard

Archaeological and palaeontological activity results in a continuous flow of new discoveries that are often subjected to dating estimates. These discoveries, sometimes involving new dating techniques, not infrequently result in an extension of previously accepted date ranges for some fossils and artifacts. The author details the impact of this on uniformitarian suppositions.

Archaeological and palaeontological activity results in a continuous flow of new discoveries that are often subjected to dating estimates. These discoveries, sometimes involving new dating techniques, not infrequently result in an extension of previously accepted date ranges for some fossils and artifacts. As a result, the ranges of fossils within the geological timescale continue to expand.[1,2] Changes of index fossils, in particular, create doubt in biostratigraphy. At the same time, dates for various human activities get pushed back in time.[3] These suggest that the fossil timescale, and its evolutionary evidence, is less well known than commonly taught. Continual reporting of these new problems and exceptions to the established timescale will only serve to weaken its reliability.

Pottery pushed back 10,000 years

Pottery is a unique and fundamental human activity that shows a high level of technical sophistication.[4] Over the past 20 years, pottery has been found in numerous caves in East Asia, pushing its age back 10,000 years.[4–6] These dates, based on ^{14}C, are also about 10,000 years before the 'evolution' of agriculture. It was assumed that pottery 'evolved' because of agriculture, but apparently that is not true of the 'hunter-gatherer' societies in East Asia. If it predated agriculture in East Asia, then why is that not true elsewhere?[4] Is the account of the evolution of pottery another just so story of evolution? It appears that man was technically proficient from the beginning, just as the Bible infers.

Cave art also pushed back 10,000 years

Cave art is notoriously difficult to date, but new uranium-series dates on calcite coatings on top of cave art now give ages of over 40,000 years.[7,8] Uranium-series dating depends upon the migration of ^{234}U (a decay product of ^{238}U) out of the rock by water, and into the thin calcite coating, where it decays radiometrically to ^{230}Th. The dates are considered minimums because the calcite coating overlies the art. They are also considered very accurate and push back the origin of cave art by over 10,000 years:

> "An improved technique that dates mineralized surface deposits finds that European cave art started earlier than researchers have assumed—at least 40,800 years ago, say archaeologist Alistair Pike of the University of Bristol in England and his colleagues. Previous estimates suggested that cave paintings began no earlier than about 30,000 years ago."[9]

This discovery not only shows that humans were more sophisticated at an early age, but also raises the possibility that the cave art was drawn by Neandertals.[7,8] The new dates also endanger the evolutionary explanation of how artistic styles evolved, since styles once thought widely separated by time could have overlapped: "Researchers are often limited to reconstructing drawing styles and, where available, creating sometimes tenuous links to other dated human remains or artifacts … ."[10]

Acute vision with compound eyes pushed back to early Cambrian

Compound eyes with acute vision have been long documented in Cambrian trilobites. Now they have also been discovered in an early Cambrian Anomalocaris from South Australia, dated 515 Ma within the evolutionary uniformitarian timescale.[11] Anomalocaris is a 1-metre-long predator first found in the Burgess shale of southeastern British Columbia (figure 1). Each of the compound eyes had at least 16,000 hexagonally packed lenses, rivalling the most acute compound eyes in modern arthropods!

The new find is claimed to reinforce the origin of compound eyes in arthropods to a time before the 'evolution' of hardened exoskeletons:

> "These fossils also p rovide compelling evidence for the arthropod affinities of anomalocaridids, push the origin of compound eyes deeper down the arthropod stem lineage, and indicate that the compound eye evolved before such features as a hardened exoskeleton."

However, hard parts may have evolved earlier (see below).

Hard parts pushed back to Precambrian

Hard parts for organisms supposedly evolved in the Cambrian. This is the usual excuse for why Precambrian fossils are not found, but apparently, hard parts of Ediacaran fossils (figure 2) from the Rawnsley Quartzite of South Australia have recently been discovered.[12] The Rawnsley Quartzite, itself undated, is from the Ediacaran period (635 Ma to 541 Ma). This is just before the Cambrian, although some rare examples of Ediacaran biota have been found in the Cambrian.[13] Clites *et al*. conclude: "Coronacollina has skeletonized components and represents both the oldest multielement and the oldest disarticulating fossil."[14]

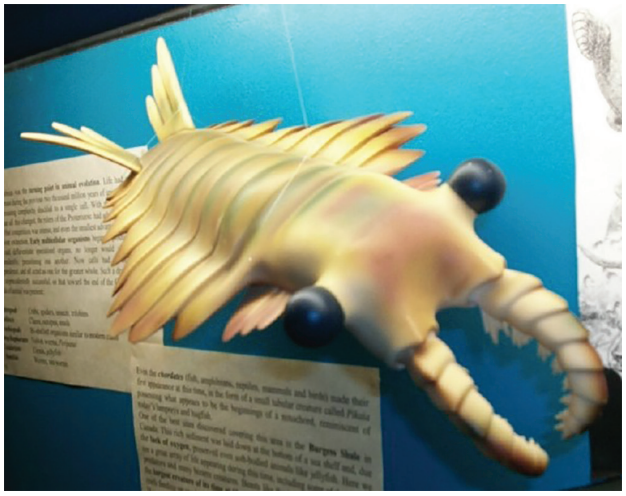

Image: Wikipedia

Figure 1. Anomalocaris model at Dinosaur Museum, Canberra, Australia. Anomalocaris is one of the new organisms found in the famous Burgess Shale of British Columbia, Canada.

If hard parts evolved earlier, then where are the ancestors of the animals from the Cambrian explosion? One of the reasons evolutionists have given for the lack of ancestors is that hard parts had not yet evolved. This explanation rings hollow when jellyfish from the Cambrian have been fossilized, indicating that soft parts can fossilize. But now that hard parts have been claimed in the Precambrian, this explanation is questionable.

A mayfly family pushed back about 30 Ma

A new mayfly from the family Baetidae was discovered in Burmese amber and dated to 97–110 Ma in the early Cretaceous.[15] It pushed the origin of this family back about 30 Ma from the late Cretaceous. It is also the first documentation of long antennae and a primary ovipositor in the order Ephemeroptera of which the family Baetidae is a member.

Fleas now found about 110 Ma earlier

The oldest flea had been dated as early Eocene until giant fleas were recently discovered in the Middle Jurassic and Lower Cretaceous of China.[16] This pushes the origin of fleas back 110 Ma in the evolutionary uniformitarian timescale. Fleas are specialized blood suckers, indicating that bloodsucking as a trait 'evolved' earlier. Moreover, these fleas were giants with females as long as 14–20.6 mm and males 8–14.7 mm, which raises the interesting problem of how such large fleas could feed on early, small mammals.[17] It is also suggested that dinosaurs with scales would have been impervious to these fleas, and that perhaps they drew blood from 'feathered dinosaurs'.[17]

Giant tyrannosauroid found earlier in the fossil record

Large tyrannosauridae (adult body mass greater than 1,000 kg) are thought to have lived in the late Cretaceous. *T. rex* is the most popular member of this group, supposedly living in the very late Cretaceous. Now giant tyrannosauroids have been discovered in the early Cretaceous of China.[18] This pushes large tyrannosauroids back about 35 Ma.

These new tyrannosauroid fossils also have filamentous integumentary structures and so the fossils are claimed to be gigantic feathered dinosaurs. This is highly questionable as such integumentary filaments are very likely collagen fibres.[19–22]

Moss now found back to early Carboniferous

Mosses are very common in wet environments today; they are found in a diverse number of habitats.[23] Sphagnum moss (figure 3) is the almost exclusive denizen of the vast modern peat bogs of the northern hemisphere. Consequently, the rarity of Paleozoic mosses is a bit of a mystery, especially in the 'swampy' Carboniferous Period. That has all changed with the discovery of three types of fossil moss found in middle to late Mississippian strata of eastern Germany, dated at 330 Ma old within the evolutionary uniformitarian timescale.[24] The previous unequivocal fossil moss had come from the early Permian Period with a few likely possibilities from the mid-Pennsylvanian Period. This new discovery pushes back the fossil record of moss about 60 Ma, or about 30 Ma if the fossils from the mid-Pennsylvanian are real.

One of the three types of fossil moss is remarkably similar to modern Sphagnum moss:

> "Hübers and Kerp's type III fossils are sufficiently well preserved so that several features can be identified on the leaves, leaving no doubt

Image: Wikipedia

Figure 2. Cast of fossil of the frond-like Ediacaran *Charnia masoni*. If fossilized 'hard parts' have now been found in the Precambrian, where are the ancestors of the animals from the Cambrian explosion?

as to their systematic affinities. These fossils are remarkable in their similarity to modern members of the Sphagnales, an order of ~350 extant species with complex morphology and anatomy that today includes the peat mosses."[25]

Apparently no evolution of this moss has occurred for 330 Ma. The fossil record of Sphagnum moss itself occurs in the Cenozoic, which means that the record of this type of common moss appears to be pushed back at least 265 Ma.[26]

If diverse mosses 'evolved' by the Carboniferous, why aren't moss fossils ubiquitous within the 'swamp' environments of that time? One explanation for this lack of preservation is because of moss's delicate nature, but moss is not really all that delicate. Some parts should fossilize readily,[26] so we should expect abundant moss fossils from the Carboniferous.

Though readily preserved in a swamp setting, the violence of the Flood may have hindered moss fossilization, especially if the 'Carboniferous forest' was composed of floating log mats.[27] When this forest was ripped up in the violence of the early Genesis Flood, the mosses may have been destroyed. Alternatively, future fossil discoveries may provide more definitive evidence.

Belemnites originated 33 Ma earlier

A belemnite is a squid-like animal, very similar to a cuttlefish, with ten arms in a generally cone-shaped shell. They are quite common as fossils worldwide (figure 4). Belemnites supposedly evolved as small forms in Europe during the early Jurassic and became extinct at the end of the Cretaceous. Some are used as index fossils.

However, two new belemnites have been discovered in Japan during the Triassic, pushing their 'origin' back 33 Ma along the geological timescale.[28] Not only do these earlier examples show significant diversity, but one of the first examples is large; with no evolutionary counterpart in Europe. This new find calls belemnites into question as index fossils, both in their expanded stratigraphic range and their lack of global uniformity. Also, the evolutionary development of belemnites will need revision, including the idea that belemnites originated in Europe as small creatures:

"Based on these remarkable findings, we provide here a major revision of the early evolutionary history of belemnites, including their origin, early phylogeny, and biogeography."[29]

Since this group survived the Triassic–Jurassic mass extinction, one of the big five mass extinctions proposed by the evolutionists, the nature of this extinction event may also require revision. The subjectivity of biostratigraphy has been illustrated too. Other pre-Jurassic belemnites had been found; from the Carboniferous of North America and the Permian and Triassic of China. These discoveries had been 'reclassified' into different groups. In the case of the Triassic specimens from China, the date was questioned:

"… because the typical belemnite morphology (long rostra with a well-developed alveolar groove), superficially exposed by the Sinobelemnitidae, had not been recorded from pre-Middle Jurassic strata in Europe."[30]

The Japanese finds demonstrate the artificial constraints imposed by paleontologists, as well as the circular reasoning that occurs in the placing and dating of fossils within the geological column.

Image: Wikipedia

Figure 3. The discovery of fossil moss remarkably similar to modern Sphagnum moss in middle to late Mississippian strata of eastern Germany poses the question of why no evolution of this moss has occurred for 330 Ma. Also, if diverse mosses 'evolved' by the Carboniferous, why aren't moss fossils ubiquitous within the 'swamp' environments of that time?

Burrowing and bioturbation pushed back into the late Precambrian

Many organisms burrow into and disturb soil or bottom sediments of a lake or ocean. This process is called bioturbation and is ubiquitous on the bottom of lakes and the oceans today.[31] Burrows of likely bilaterians have been found recently in the late Precambrian of Siberia as old as 555 Ma[32,33] and in Uruguay in rocks claimed to be older than 585 Ma.[31,34] In the burrows from Uruguay, researchers found evidence of active backfilling, the ability to burrow up and down, and meandering burrows that suggest 'advanced behavioral adaptations'. This would mean that the evolution of bilaterians was significantly earlier than was recently believed. Regardless, the evidence for bilaterians, burrowing, and bioturbation has been pushed back in evolutionary uniformitarian time about 45 Ma from the early Cambrian.

The burrows from Uruguay are very similar to those in the Phanerozoic (the time after 541 Ma) and also to modern burrows. There apparently has been no evolution of burrowing in all this time.

The burrows in Uruguay are found in what are considered glaciomarine sediments from the supposed late Precambrian ice age period, which lasted off and on for about 300 Ma. At least one of these supposed ice ages was global. The sediments contained faceted and striated rocks as well as claimed dropstones in varvites. All these features can be duplicated by gigantic submarine mass flows during the Flood.[35] It is also likely that if the earth were totally glaciated, the high reflectivity of the snow would keep the planet permanently frozen. The issue of bioturbation highlights another uniformitarian dilemma—why the bulk of all sedimentary rocks are not completely bioturbated, since the process is observed to occur rapidly.[36,37] This seems contrary to the principle of actualism. The extent of bioturbation in sedimentary rocks can be explained by the Flood. Fluctuations in the rate of sedimentation during the Flood may explain why some rocks have been reworked and others have not.

Two new 'living fossils' found

All of the above examples have extended evolutionary ranges, which complicates evolutionary history and index fossil biostratigraphy. Another problem is found when ranges are extended to the present; the discovery of 'living fossils'. One is the discovery of a new beetle of the subfamily Xylastodorinae called Proxylastodoris kuscheli from palm trees in New Caledonia in the Southwest Pacific Ocean.[38] This genus was previously only known from Baltic amber, dated to between 40 and 50 Ma ago. In addition, the subfamily was only known in the fossil record in the western hemisphere, but now is found living on the other side of the earth in the eastern hemisphere.

The second living fossil is a non-marine ostracod found in a cave in South Korea and previously known from the Eocene.[39] The genus apparently 'skipped' 40 Ma of the fossil record.

The real fossil record unknown

All these range expansions, plus others reported previously, indicate that the real fossil record is less well known than paleontologists and stratigraphers suggest. Future work may well show that the fossil order of the geological column is general at best and will have to be revised considerably in the future as more fossils are discovered.

Another trade secret is the substantial mixing of animals and plants of different ages. This is rarely reported but can

Image: Wikipedia

Figure 4. Belemnite fossils from Wyoming, USA.

be found in the buried details of museum collections and archives.[40] For example, Dr Carl Werner has discovered by interviewing museum paleontologists that mammals are usually found with dinosaurs, and that there are 430 species of mammals found in dinosaur age strata, only seven to 10 of which have modern counterparts thus far.[41] The 'Age of Reptiles' would seem to be a misnomer.

Furthermore, when paleontologists find dinosaur bones or dinosaur trace fossils in the Cenozoic they are almost always 'redated' or claimed 'reworked' and put into the Mesozoic.[42] It seems that circular reasoning and special pleading are the bulwarks of the evolutionary precision of the fossil record. If paleontologists would take a more empirical approach, absent the assumption of evolution, the fossil record might appear quite different. The fossil record of the Mesozoic and Cenozoic is probably more mixed up than non-specialists realize, and should be evaluated by multiple working hypotheses.

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References

1. Oard, M.J., Further expansion of evolutionary fossil time ranges, *J. Creation* **24**(3):5–7, 2010.
2. Oard, M.J., Fossil ranges continue to expand, *J. Creation* **26**(1):15–16, 2012.
3. Oard, M.J., Post-Flood man is becoming smarter and more human, *J. Creation* **26**(1):3–4, 2012.
4. Shelach, G., On the invention of pottery, *Science* **336**:1644–1645, 2012.
5. Bower, B., Chinese pottery is oldest known, *Science News* **182**(2):15, 2012.
6. Wu, X., Zhang, C., Goldberg, P., Cohen, D., Pan, Y., Arpin, T. and Bar-Yosef, O., Early pottery at 20,000 years ago in Xianrendong Cave, China, *Science* **336**:1696–1700, 2012.
7. Hellstrom, J., Absolute dating of cave art, *Science* **336**:1387–1388, 2012.
8. Pike, A.W.G., Hoffman, D.L., García-Diez, M., Pettitt, P.B., Alcolea, J., De Balbín, R., González-Sainz, C., de las Heras, C., Lasheras, J.A., Montes, R. and Zilhão, J., U-series dating of paleolithic art in 11 caves in Spain, *Science* **336**:1409–1413, 2012.
9. Bower, B., First Europeans may have painted, *Science News* **182**(2):15, 2012.
10. Hellstrom, ref. 7, p. 1387.
11. Paterson, J.R., García-Bellido, D.C., Lee, M.S.Y., Brock, G.A., Jago, J.B. and Edgecombe, G.D., Acute vision in the giant Cambrian predator Anomalocaris and the origin of compound eyes, *Nature* **480**:237–240, 2011.
12. Clites, E.C., Droser, M.L. and Gehling, J.G., The advent of hard-part structural support among the Ediacara biota: Ediacaran harbinger of a Cambrian mode of body construction, *Geology* **40**(4):307–310, 2012.
13. Clites *et al*., ref. 12, p. 307.
14. Clites *et al*., ref. 12, p. 309.
15. Poinar, Jr., G., Vetuformosa buckleyi n. gen., n. sp. (Ephemeroptera: Baetidae; Vetuformosinae n. subfam.), a new subfamily of mayflies in Early Cretaceous amber, *Historical Biology* **23**(4):369–374, 2011.
16. Huang, D., Engel, M.S., Cai, C., Wu, H. and Nel, A., Diverse transitional giant fleas from the Mesozoic era of China, *Nature* **483**:201–204, 2012.
17. Huang *et al*., ref. 16, p. 204.
18. Xu, X., Wang, K., Zhang, K., Ma, Q., Xing, L., Sullivan, C., Hu, D., Cheng, S. and Wang, S., A gigantic feathered dinosaur from the Lower Cretaceous of China, *Nature* **484**:92–95, 2012.
19. Feduccia, A., Is it a bird? Is it a dinosaur? *New Scientist* **214**(2862):28, 2012.
20. Oard, M.J., *Dinosaur Challenges and Mysteries: How the Genesis Flood Makes Sense of Dinosaur Evidence Including Tracks, Nests, Eggs, and Scavenged Bones*, Creation Book Publishers, Atlanta, GA, 2011.
21. Oard, M.J., Dinosaurs? *J. Creation* **25**(2):22–31, 2011.
22. Sarfati, J., creation.com/feathered-dinosaurs-not-feathers
23. Taylor, E.L. and Taylor, T.N., Paleozoic mosses: small, but no longer inconspicuous, *Geology* **40**(8):767–768, 2012.
24. Hübers, M. and Kerp, H., Oldest known mosses discovered in Mississippian (late Visean) strata of Germany, *Geology* **40**(8):755–758, 2012.
25. Taylor and Taylor, ref. 23, p. 767.
26. Hübers and Kerp, ref. 24, p. 757.
27. Woolley, J.F., The origin of the Carboniferous coal measures—part 3: a mathematical test of lycopod root structure, *J. Creation* **25**(3):74–78, 2011.
28. Iba, Y., Sano, S.-I, Mutterlose, J. and Kondo, Y., Belemnites originated in the Triassic—a new look at an old group, *Geology* **40**(10):911–914, 2012.
29. Iba *et al*., ref. 28, p. 911.
30. Iba *et al*., ref. 28, p. 913.
31. Droser, M.L. and Gehling, J.G., Old and Groovy, *Science* **336**:1646–1647, 2012.
32. Rogov, V., Marusin, V., Bykova, N., Goy, Y., Nagovitsin, K., Kochnev, B., Karlova, G. and Grazhdankin, D., The oldest evidence of bioturbation on Earth, *Geology* **40**(5):395–398, 2012.
33. Powell, D., Early burrower may have been worm, *Science News* **181**(10):9, 2012.
34. Pecoits, E, Konhauser, K.O., Aubet, N.R., Heaman, L.M., Veroslavsky, G., Stern, R.A. and Gingras, M.K., Bilaterian burrows and grazing behavior at >585 million years ago, *Science* **336**:1693–1696, 2012.
35. Oard, M.J., *Ancient Ice Ages or Gigantic Submarine Landslides?* Creation Research Society Books, Chino Valley, AZ, US, 1997.
36. Woodmorappe, J., Are soft-sediment trace fossils (ichnofossils) a time problem for the Flood? *J. Creation* **20**(2):113–122, 2006.
37. Froede, Jr, C.R., Sediment bioturbation experiments and the actual rock record, *J. Creation* **23**(3):3–5, 2009.
38. Van Doesburg, P.H., Cassis, G. and Monteith, G.B., Discovery of a living fossil: a new xylastodorine species from New Caledonia (Heteroptera: Thaumastocoridae) and first record of the subfamily from the eastern hemisphere, *Zoologische Mededelingen Leiden* **84**:93–115, 2010.
39. Smith, R.J., Lee, J., Choi, Y.G., Chang, C.Y. and Colin, J.-P., A Recent species of Frambocythere Colin, 1980 (Ostracoda, Crustacea) from a cave in South Korea; the first extant representative of a genus thought extinct since the Eocene, *J. Micropalaeontology* **31**:131–138, 2012.
40. Dr Carl Werner, personal communication.
41. Werner, C., Living Fossils—Evolution: *The Grand Experiment vol. 2*, 2nd edn, New Leaf Press, Green Forest, AR, pp. 169–182, 2012.
42. Oard, M.J., *Dinosaur Challenges and Mysteries: How the Genesis Flood Makes Sense of Dinosaur Evidence Including Tracks, Nests, Eggs, and Scavenged Bones*, Creation Book Publishers, Powder Springs, GA, pp. 156–162, 2012.

Michael J. Oard *has an M.S. in atmospheric science from the University of Washington and is now retired after working as a meteorologist with the US National Weather Service in Montana for 30 years. He is the author of* Frozen in Time, Ancient Ice Ages or Gigantic Submarine Landslides?, Flood by Design, Dinosaur Challenges and Mysteries, *and* Exploring Geology with Mr. Hibb.. *He serves on the board of the Creation Research Society.*